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BMO CAPITAL MARKETS RESEARCH

Oil & Gas Global Cost Study

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BMO Capital Markets

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Global Integrated Oils

BP PLC (BP - NYSE) B1
Cenovus Energy (CVE - TSX, NYSE) B12
Chevron (CVX - NYSE) B21
China Petroleum & Chemical Corporation Limited (SNP - NYSE) B32
CNOOC (CEO - NYSE) B41
ConocoPhillips (COP - NYSE) B51
Ecopetrol (EC - NYSE) B62
Eni S.P.A. (ENI - XMIL) B72
Equinor (EQNR - OSE, NYSE) B82
Exxon Mobil (XOM - NYSE) B93
Husky Energy Inc. (HSE - TSX) B104
Imperial Oil (IMO - TSX, AMEX) B114
Petrobras (PBR - NYSE) B124
Pemex (PEMEX) B134
PetroChina Company Limited (PTR - NYSE) B144
Repsol (REP - XMAD) B153
Rosneft OAO (ROSN - LN) B163
Royal Dutch Shell PLC (RDS - NYSE) B172
Suncor Energy Inc. (SU - TSX, NYSE) B183
Total S.A. (TOT - NYSE) B194

North American Senior Producers

Anadarko Petroleum Corp. (APC - NYSE) C1
Antero Resources (AR - NYSE) C11
Apache Corp. (APA - NYSE) C19
ARC Resources Ltd. (ARX - TSX) C30
Cabot Oil & Gas Corporation (COG - NYSE) C38
Canadian Natural Resources Limited (CNQ - TSX, NYSE) C46
Chesapeake Energy Corp. (CHK - NYSE) C57
Cimarex (XEC - NYSE) C65
Concho Resources Inc. (CXO - NYSE) C73
Continental Resources (CLR - NYSE) C81
Crescent Point Energy Corp. (CPG - TSX) C89
Diamondback Energy (FANG - NASDAQ) C97
Devon Energy Corp. (DVN - AMEX) C105
Encana Corp. (ECA - TSX, NYSE, Restricted) C115
EOG Resources Inc. (EOG - NYSE) C124
EQT Corporation (EQT - NYSE) C134
Hess Corp. (HES - NYSE) C142
Marathon Oil Corporation (MRO - NYSE) C153
MEG Energy Corp. (MEG - TSX) C164
Murphy Oil Corporation (MUR - NYSE) C172
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Occidental Petroleum Corp. (OXY - NYSE) C194
Peyto Exploration & Development Corp. (PEY - TSX) C205

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QEP Resources (QEP - NYSE, Restricted)....C224
Range Resources Corporation (RRC - NYSE)....C233
Seven Generations Energy Ltd. (VII - TSX)....C241
Southwestern Energy (SWN - NYSE)....C249
Tourmaline Oil Corp. (TOU - TSX)....C257
Ultra Petroleum (UPL - NYSE)....C265
Vermilion Energy Inc. (VET - TSX)....C274
Whiting Petroleum (WLL - NYSE)....C281
WPX Energy (WPX - NYSE)....C289

Small and Intermediate Producers

Advantage Oil & Gas (AAV - TSX)....D1
Approach Resources (AREX - NASDAQ)....D7
Athabasca Oil (ATH - TSX)....D13
Baytex Energy (BTE - TSX)....D19
Bellatrix Exploration (BXE - TSX)....D25
Berry Petroleum (BRY - NSDQ)....D31
Birchcliff Energy Ltd. (BIR - TSX)....D37
Bonanza Creek Energy (BCEI - NYSE)....D43
Bonavista Energy Corporation (BNP - TSX)....D49
Bonterra Energy Corp. (BNE - TSX)....D55
Callon Petroleum (CPE - NYSE)....D61
Cardinal Energy (CJ - TSX)....D67
Carrizo Oil & Gas Inc. (CRZO - NASDAQ)....D73
Centennial Resource Development (CDEV - NASDAQ)....D79
Comstock Resources Inc. (CRK - NYSE)....D85
Crew Energy Inc. (CR - TSX)....D91
Delphi Energy Corp. (DEE - TSX)....D97
Denbury Resources (DNR - NYSE)....D103
Enerplus Corporation (ERF - TSX)....D109
EP Energy (EPE - NYSE)....D115
Extraction Oil & Gas (XOG - NASDAQ)....D121
Freehold Royalties Ltd. (FRU - TSX)....D127
Halcon Resources (HK - NYSE)....D133
High Point Resources (HPR - NYSE)....D139
Jagged Peak Energy (JAG - NYSE)....D145
Journey Energy Inc. (JOY - TSX)....D151
Kelt Exploration Ltd. (KEL - TSX)....D157
Laredo Petroleum (LPI - NYSE)....D163
Leucrotta (LXE - TSX)....D169
Matador Resources (MTDR - NYSE)....D175
Montage Resources (MR - NYSE)....D181
Northern Oil & Gas (NOG - AMEX)....D187
NuVista Energy Ltd. (NVA - TSX)....D193
Oasis Petroleum (OAS - NYSE)....D199

Obsidian Energy (OBE - NYSE) D205
Painted Pony Petroleum Ltd. (PONY - TSX) D211
Paramount Resources Ltd. (POU - TSX) D217
Parsley Energy (PE - NYSE) D223
PDC Energy (PDCE - NASDAQ) D229
Pengrowth Energy Corporation (PGF - TSX) D235
Perpetual Energy Inc. (PMT - TSX) D241
Sanchez Energy Corp. (SN - NYSE) D247
SM Energy Company (SM - NYSE) D253
SRC Energy (SRCI - NYSE) D259
Storm Resources (SRX - TSX) D265
Surge Energy (SGY - TSX) D271
Tamarack Valley Energy Ltd. (TVE - TSX) D277
TORC Oil & Gas Ltd. (TOG - TSX) D283
Unit Corp. (UNT - NYSE) D289
Whitecap Resources Inc. (WCP - TSX) D295
Zargon Oil & Gas Ltd. (ZAR - TSX) D301

International Producers

Canacol Energy (CNE - TSX) E1
EnQuest (ENQ - LSE) E7
Frontera Energy Corporation (FEC - TSX) E13
Galp Energia (GALP - XLIS) E19
Genel Energy (GENL - LSE) E25
Gran Tierra (GTE - TSX, AMEX) E31
Igas Energy (IGAS - LSE) E37
Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB) E43
Lundin Petroleum AB (LUPE - OMX, TSX) E49
Madalena Energy (MVN - TSX) E55
Niko Resources Ltd. (NKO - TSX) E61
Orca Exploration (ORC.B - TSX) E67
Oryx Petroleum (OXC - TSX) E73
Pan Orient Energy (POE - TSXV) E79
Parex Resources Inc. (PXT - TSX) E85
Premier Oil (PMO - LSE) E91
Santos Ltd. (STO - ASX; STOSY - NYSE) E97
SOCO International (SIA - LSE) E103
TransGlobe Energy Corp. (TGL - TSX) E109
Tullow Oil plc (TLW - LN) E115
Valeura Energy (VLE - TSX) E121

Executive Summary

Our Global Cost Study covers 125 companies producing 35 million b/d and 126 Bcf/d

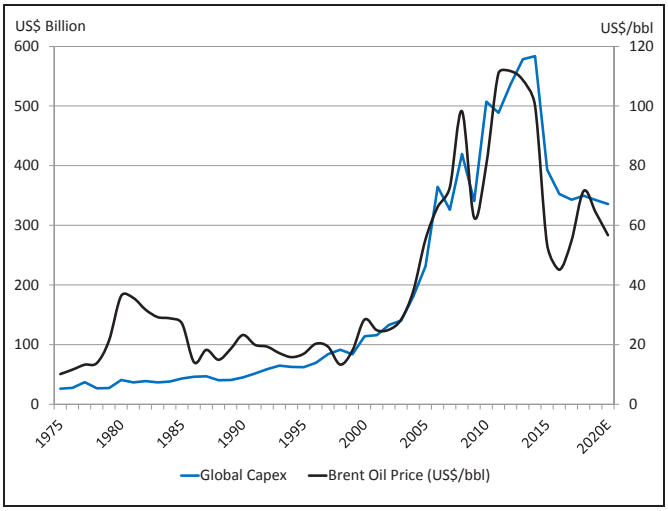
BMO's Annual Global Cost Study reviews the oil and gas industry's cost structure based on the results of 125 major resource companies with worldwide crude oil production of 35 million barrels per day (b/d) and natural gas production of 126 billion cubic feet per day (Bcf/d), in addition to numerous legacy companies. We translate reported costs (reserve replacement, operating, G&A, taxes) into "breakeven prices," defined as the oil-equivalent price required to recover all costs plus provide a 10% return on capital. To facilitate comparison we translate these to benchmark-equivalent oil prices (Brent oil and Henry Hub gas) taking into account oil/gas weighting and quality differentials. We convert natural gas to oil-equivalent using the actual value versus oil (which we define as the "realized ratio") rather than the traditional 6:1 relationship used in reserve reporting. We believe our analysis provides two practical applications: (1) acts as a fundamental guide for long-term commodity prices by providing a perspective on the true "all-in" cost structure; and (2) acts as an initial stock screen to identify companies positioned to deliver superior returns over time.

Indicator of Future Oil Prices

Global supply costs drive commodity price cycles

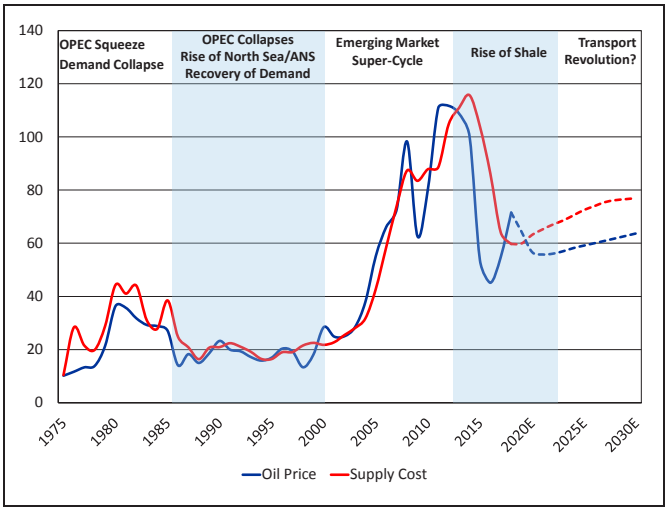
We believe that crude oil and natural gas prices are largely determined by their respective supply costs. This is because higher commodity prices lead to higher cash flow and capital spending, which in turn drive higher production and ultimately cost inflation as producers compete for scarce resources and productivity falters. Similarly, a lower commodity price translates to lower cash flow, lower spending, and lower production, as illustrated in Exhibit 1. Since 1975, there have been four broad cycles as shown in Exhibit 2, with deviations within the cycle due to more transitory influences.

Exhibit 1: Global Capex vs. Brent Oil Price



Source: Bloomberg, BMO Capital Markets

Exhibit 2: Supply Cost vs. Brent Oil Price (US$/bbl)



Source: Bloomberg, BMO Capital Markets

We expect the next commodity price cycle to begin in 2022-23

In our view the current cycle began in 2014 and was caused in part by the prior period of high oil prices that translated into higher levels of capital spending. More importantly, high oil prices facilitated the emergence of U.S. shale oil, which increased supply and drove down costs. We believe that U.S. shale currently establishes the fundamental trading range for crude oil prices of US$55-65/bbl for Brent and will continue to do so until growth potential slows. Importantly, the collapse in crude oil prices has also led to a sharp reduction in global capital spending outside of North America, which combined with slower growth in U.S. shale has

See pages F1 to F4 for analyst coverage.

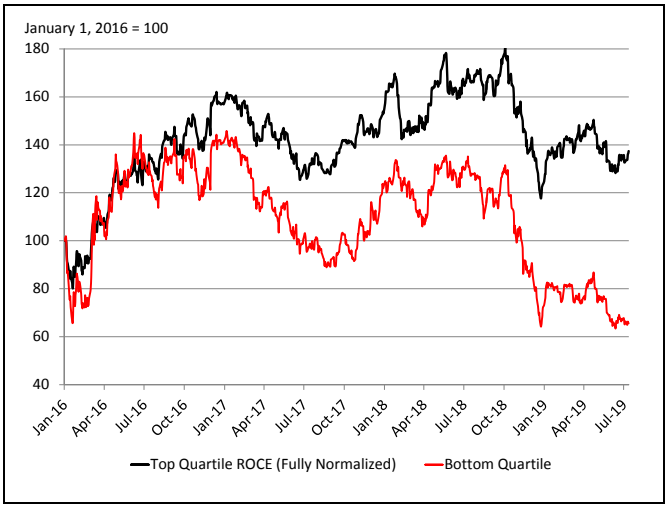
sowed the seeds for the next oil price cycle that we expect to begin in the 2022-2023 time period.

Stock Selection Screen

Companies that consistently achieve lower full-cycle supply costs tend to deliver higher returns on capital and stronger share price performance

We believe that companies that deliver improving supply cost performance are best positioned to outperform their peers. Our study demonstrates that stock market performance for oil and gas producers is integrally linked to Returns on Capital (ROCE), as shown in Exhibit 3. Over the last three years, the share price of top quartile ROCE generating companies in our study outperformed the bottom quartile by more than 70%. The common "controllable" characteristic of companies that deliver higher returns on capital than their peers is lower supply costs. Exhibit 4 demonstrates how theoretical investment in the top-quartile lowest-cost companies from our study has consistently and materially outperformed investment in higher cost peers. We believe that isolating these companies can be an effective first step in creating a core investment position in the sector.

Exhibit 3: BMO ROCE Performance Index Retrospective



Source: BMO Capital Markets, Company Reports

Note: Reflects share performance of top-quartile, based on fully normalized 3-year ROCE (excluding cumulative impairments to the capital base since 2014)

Exhibit 4: BMO Cost Study Performance Retrospective



Source: BMO Capital Markets, Company Reports

Each year we have been able to show that the share prices of the lowest cost companies in our study based on a ranking of three-year average "all-in" supply costs have outperformed their higher cost peers when measured over the same prior three-year period. Admittedly, this backward looking performance review proves less helpful as a barometer for go-forward stock market performance, as the lowest cost producers each year do not necessarily outperform in subsequent periods. We believe there are a number of factors that influence go-forward performance:

1) ***Low costs already recognized.*** In many cases, consistent low costs are recognized by the equity market, which means they lose some of their predictive power. Conversely, companies demonstrating improving cost trends may tend to outperform as the market begins to recognize their potential for improving returns.

2) ***Cyclical market factors.*** The shares of lower quality (typically higher cost) companies tend to outperform during periods of commodity price recovery as the insolvency risk is repriced.

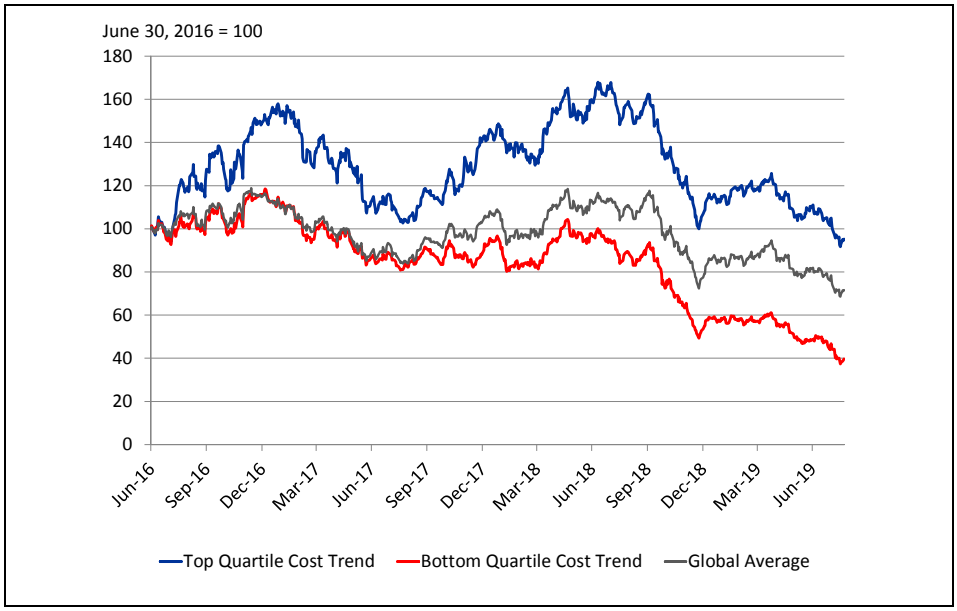
3) ***Capital structure not considered.*** Too much debt can cause the share performance of companies with relatively low supply costs to underperform over certain periods.

4) ***News-driven E&Ps.*** International E&Ps tend to react heavily to positive exploration results despite having generally higher implied supply costs due to the lag between spending and reserve recognition. Similarly, the rise of U.S. shale oil has driven outperformance for some producers, despite reporting relatively average costs to date. Again, industry trends can take time to reflect in actual supply costs.

5) ***Market capitalization not considered.*** We assess share price performance using an equal-weighted index. Integrated oils and Super Majors are less sensitive to upstream cost structure given downstream and midstream business exposure.

Notwithstanding these issues, there remains a strong relationship between supply costs and equity performance, especially the trend in supply costs. Intuitively this makes sense: companies demonstrating improving cost trends are more likely to outperform as the market begins to recognize their potential for improving financial returns. This relationship is demonstrated in Exhibit 5, which shows that investment in the top companies with the most favourable trend in three-year average supply costs from our study (rebalanced annually upon cost study release) has consistently outperformed both the global average and companies with worse cost trends over the past four releases of our study. We believe that even better performance can be achieved by further vetting the list to exclude extraordinary outliers based on single-year cost trends and insights from coverage analysts.

Exhibit 5: Cost Study "Purchase Index" - Based on Three-Year Average Cost Trend



Source: BMO Capital Markets, Company Reports
Notes: Based on top/bottom quartile ranking based on percentage change in 3-year average supply costs

Key Findings From the 2019 Study

Cost Curve Establishing a Cycle Bottom. As we surmised in last year's study, 2017 was the trough for supply costs, as confirmed by the return of inflation to both capital and field operating costs in 2018. The implied price of Brent-equivalent crude oil required to recover the costs of finding, developing, and producing a barrel of crude oil and/or natural gas worldwide increased 11% to $61.45/boe. That said, three-year average costs slipped below $60/boe, notably lower than the previous market bottom, and suggesting some structural influence. Still, our cost curves point out that relatively few reserves generate sustainable returns below $60/bbl or $3/Mcfe at the cycle bottom, which underscores fundamental support levels for each. Supply ***costs for oil-weighted companies*** rose 17% to $68.23/boe (three-year $63.31/boe), and ***costs for global natural gas*** increased 4% to $3.50/Mcfe (three-year $3.53/Mcfe).

Assessing Sustainability and Supply Implications. Lower costs and notable deepwater exploration success have motivated a growing pipeline of new project proposals that potentially add two million b/d of incremental supply by 2025 as compared to our 2017 outlook. More structural influence on costs is evident with the impact of technology on U.S. shale and offshore drilling times, prolific wells in Guyana and Brazil, as well as project optimization in the North Sea. That said, cyclical forces are also at play and likely to reverse with a recovery in activity. Specifically, deepwater drilling day rates are off 70-80% from the peak, and while unlikely to retest highs, the expectation of rising demand could drive re-inflation in excess of 100% for this major component of project costs.

Regional Cost Perspective. The majority of the cost inflation in 2018 was evident in North American operations, although North America retains a slight edge in three-year average costs at $59.52/boe as compared to international operations averaging $62.18/boe. Asia has the lowest three-year average costs at $53.29, followed by North America. Southeast Asia and the North Sea specifically retain the lowest three-year average track record.

Tight Oil Benefit Tightens, Oil Sands Competitive + Friendly. The prolific nature of U.S. tight oil is largely behind the structural shift lower in costs with some plays boasting well-level breakevens below $50/bbl. That said our work continues to show that, collectively, "all-in" reported costs are materially higher and not sustainably better than the global average. In 2018 the typical cost benefit of tight oil producers of $9/boe since 2010 narrowed to just $2/boe because of high cost M&A and evidence of decreasing efficiencies by some operators. The Permian claims the lowest costs in 2018 but were still above the global average overall. We also reiterate that Canadian oil sands is not only competitive on full-cycle costs, but also leads industry efforts on ESG performance with a heavy focus on R&D, which could ultimately drive costs lower relative to competing sources.

Supply Cost Outlook: Stability at Last. Global industry costs reached a floor in 2017 and are now reversing course, albeit not in a meaningful way. With the dust settled, we anticipate more normalized spending and reserve additions ahead. Based on our team's coverage, unit operating costs should remain relatively stable through 2021. Global development spending is forecast to expand just 5% cumulatively by 2021, implying F&D cost growth of 7% in 2019 and a cumulative 15% by 2021 to just under $15/boe. Taken together, the global supply cost should increase 3% to $63/boe in 2019 and may expand toward $67/boe by 2021, implying solid cost structure support for oil prices in the $65/bbl range.

Returns Recovering – But Is It Good Enough? Worldwide ROCE continued to recover in 2018 from all-time lows on the back of both higher oil prices and noted improvements in costs. We estimate fully normalized ROCE averaged 7.3% in 2018. This all said, average returns are still

well below the average cost of capital while our outlook for rising costs and a stable oil price environment in the $60-65/bbl range does not give hope for material improvement to average returns from here. Based on our team's coverage, industry returns in fact could retreat toward 4% (normalized basis) in 2019 with lower oil prices before clawing back toward the 7% level by 2021.

The Norm, Not the Exception – Seeing Value in the Select Few. The vast majority of oil and gas equities have languished over the past two cycles as a function of lacklustre financial returns – *the "typical" oil and gas stock has lost 60% of its value since 2007*. Despite lower costs and recovering profitability in 2018, sentiment toward the sector has been tarnished and valuation effectively impaired. Forward EV/EBITDA multiples for large cap producers are near all-time lows at 5.2x, while median EV-to-production metrics have fallen to pre-2004 levels at ~$40,000/boe/d from $90,000/boe in 2014 and EV-to-reserves values have fallen to $9/boe from $18/boe. Canadian companies have seen the steepest retraction with widening product discounts. The obvious takeaway is that navigating opportunity in the oil and gas sector requires extreme diligence and selectivity. However, it *also means that the "select few" low cost/high return companies within the group offer compelling value given the valuation discount inflicted on the sector with a broad brush*.

An Industry in Harvest Mode. The prolonged downturn has forced many producers to constrain growth spending and instead focus on capital efficiency and free cash flow. We estimate that aggregate free cash flow has ballooned to nearly $100 billion in 2018, roughly in line with historic highs. The Global Majors contribute the bulk in aggregate; however, the *Canadian Integrateds and select International E&Ps demonstrate the strongest FCF-generating capability on a relative basis*. Canadian oil sands producers specifically are poised to "out-harvest" other peers. This FCF movement in turn has motivated widespread share repurchases based on the belief that stocks are significantly undervalued versus historic metrics.

Company Performance Rankings. We believe that all-in, full-cycle costs and financial returns on capital can drive stock market performance over time. Our report provides screens on three different cost performance metrics, along with rankings on normalized ROCE and FCF growth:

- Lowest cost companies on the basis of *Total Proved* supply costs include oil producers **Parex**, **Encana (Restricted), Northern Oil, Vermilion**, and **Cimarex** as well as gas producers **Peyto, Cabot, Paramount, Chesapeake,** and **Arc Resources**. Lowest cost companies on a *Proved Developed* basis include **Parex, Cimarex, Conoco, Eni,** and **Continental** and gas companies **Cabot, Peyto, Chesapeake, Arc Resources,** and **Paramount**. Notable *cost improvements* are also seen by **Shell, Pan Orient, Petrobras, ConocoPhillips,** and **Comstock.**
- Based on normalize three-year average ROCE, companies with the highest average returns records include **Parex, Orca, Galp, Ecopetrol,** and **Jagged Peak.**
- The highest free cash flowing companies over the past three years include integrateds **Sinopec, Shell, Ecopetrol, Petrobras** and **Equinor**, while top E&Ps include **Santos, Orca, Freehold, Tullow,** and **Lundin**. Companies with the strongest positive FCF growth include Integrateds **Shell, Equinor,** and **Imperial,** as well as E&Ps **Tullow, Lundin,** and **Santos**.

Relative Value for Given Returns. Based on our outlook, the largest incremental improvements in returns going forward are expected from **Parex, Cabot, ConocoPhillips, Berry,** and **Range.** When viewed relative to 2020 market valuation, we believe that Integrateds **Total** and **Suncor,** as well as Senior Producers **Cabot, EOG,** and **Continental** offer compelling value given superior ROCE outlooks, while **Conoco, Canadian Natural,** and **Parsley** appear undervalued relative to peer average returns. Among SMID-cap producers, **Parex, Jagged Peak, Enerplus,** and **SRC** screen well for relative value against returns outlooks.

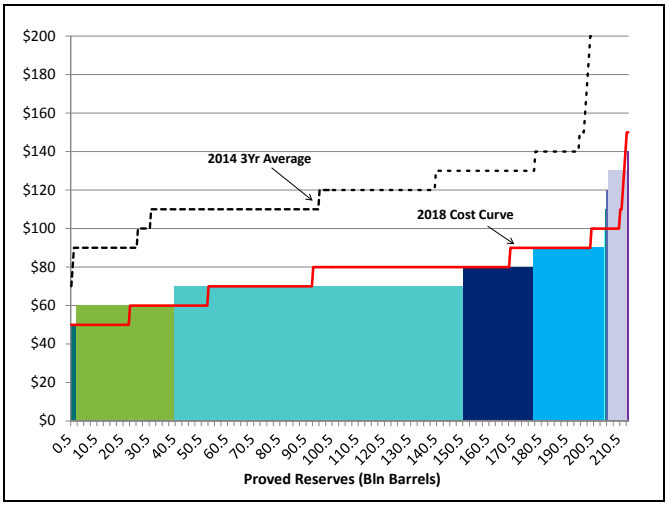
Overview of Global Cost Curves

Still relatively few barrels can generate sustainable returns at oil prices <$60/bbl or gas <$3/Mcf after reaching cycle bottom costs, which suggests reasonable floor values for each

The global oil cost curve shifted materially lower to what we consider trough levels in 2017, and subsequently stabilized with some modest inflation in 2018. Based on three-year average costs, the vast majority of global reserves generate economic returns at or below $70/bbl, and roughly one-third do sub-$60/bbl (Exhibit 6). The cost curve implied by 2018 single-year results has moved modestly higher with some apparent industry inflation and suggests slightly less than half of reserves are economic below $70/bbl, and the vast majority generate investment returns below $80/bbl. As we believe 2017 was likely market bottom in the cost cycle, this provides fundamental support for oil markets in the $60+/bbl range.

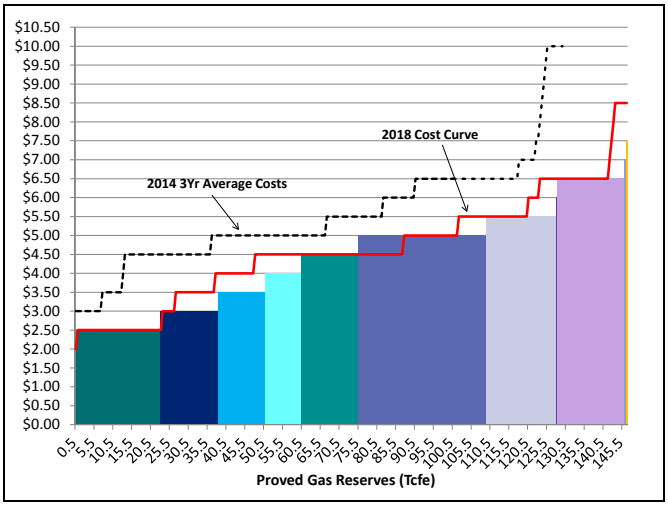
For natural gas, we estimate that approximately 50% of proved reserves are economic at prices at or below $4.50/Mcf based on three-year average costs. Relatively few reserves are economic sub-$3/Mcf. As such, it appears the go-forward cost structure and price support level for global gas prices is established in the $4-5/Mcf range (Exhibit 7).

Exhibit 6: Proved Oil Supply Cost Curve ($/Bbl, Brent)



Source: BMO Capital Markets, Company Reports
Notes: Blocks represent three-year average supply costs at realized gas:oil ratio

Exhibit 7: Proved Natural Gas Supply Cost Curve ($/Mcf HH)



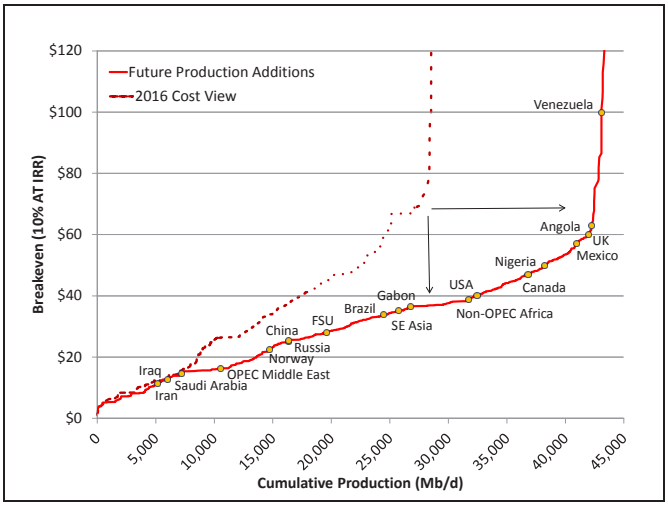
Source: BMO Capital Markets, Company Reports

Supply Implication of Lower Costs – How Sustainable Are Savings?

New project proposals add nearly 2 million b/d of potential supply through 2025

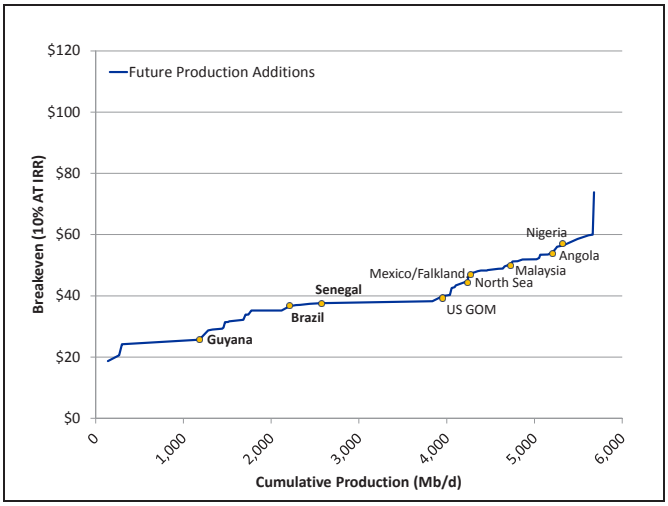
In Exhibit 8 we illustrate how current development costs for future planned major projects have decreased materially since 2016. This has promoted a noticeable increase in proposals and Final Investment Decisions (FIDs) for new developments. In particular, the cost structure for a growing list of deepwater projects has slid nearly 40% since the market peak, including more than a 50% drop in associated capital costs due to a mix of both structural and cyclical factors (Exhibit 9). A large volume of deepwater resource is now believed to be economically viable for development at oil prices in the range of $25-40/bbl.

Exhibit 8: Global Cost Curve - Future Production Additions



Source: BMO Capital Markets, Wood Mackenzie

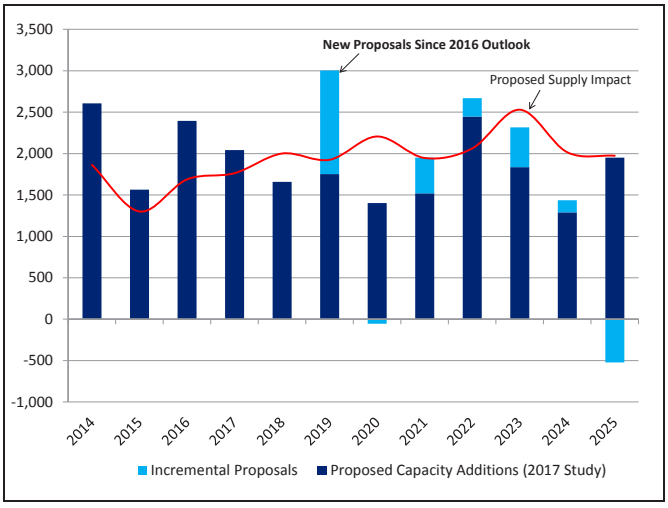
Exhibit 9: Deepwater New Project Cost Curve (US$/bbl)



Source: BMO Capital Markets, Wood Mackenzie

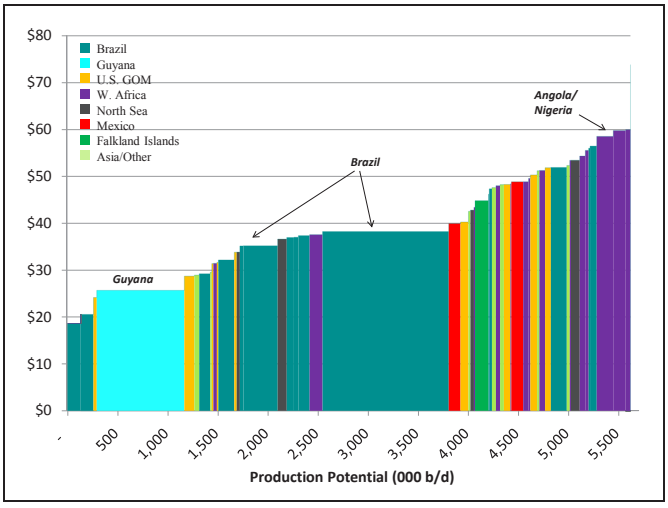
Compared to our 2017 assessment, new proposals have added nearly two million b/d of potential supply through 2025, including a notable advancement of projects slated for commissioning in 2019 and 800,000 b/d post-2020, as we show in Exhibit 10. This trend has been supported by deepwater success offshore Guyana and Senegal, the resumption of activity offshore Mexico, and expanded development offshore Brazil. Latin America includes some of the most economic and prolific near-term development options (Exhibit 11).

Exhibit 10: Oil Additions From Major New Projects (000 b/d)



Source: International Energy Agency, BMO Capital Markets

Exhibit 11: Deepwater Project Cost Curve ($/bbl)



Source: Wood Mackenzie, BMO Capital Markets

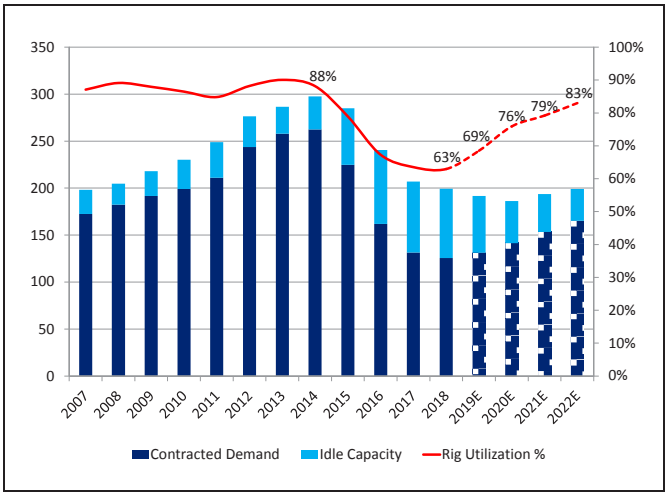
Inflation Risks to New Supply Linger

Rising offshore rig demand and day rates could influence the economic viability of some long lead projects, 70% of which are still unsanctioned

We believe the possibility of re-inflation for new projects in response to a recovery in industry activity is still a meaningful risk to the pipeline, and future global supply. Structurally, offshore drilling times have effectively been cut in half with new technology, while the emergence of high volume wells in Brazil and Guyana have increased productivity. Project optimization—specifically a shift away from greenfield developments toward phased, satellite tie-backs and project consolidation— has also played a role. That said, we do question the true sustainability of certain "structural" gains related to project execution and reliability, which can be influenced by corporate behaviour and a renewed focus on productivity through a downturn.

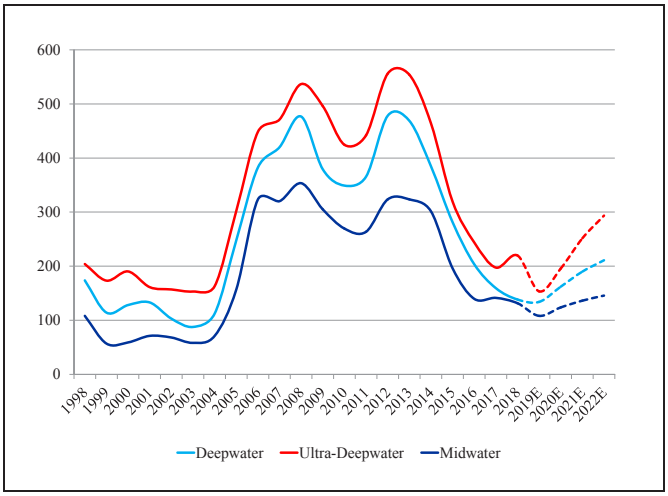
Cyclical forces have also influenced costs and are likely to reverse course. Day rates for ultra-deepwater offshore drilling rigs have fallen 70-80% from peak rates in excess of $500,000/day to just $125,000/day given utilization rates near 60% (Exhibit 12). Although unlikely to re-test peak levels, the expectation of rising rig demand could drive re-inflation in excess of 100% for this major portion of project costs, with top spec rigs forecast to eventually fetch more than $300,000/day (Exhibit 13).

Exhibit 12: Forecast Offshore Rig Utilization



Source: IHS Petrodata, BMO Capital Markets

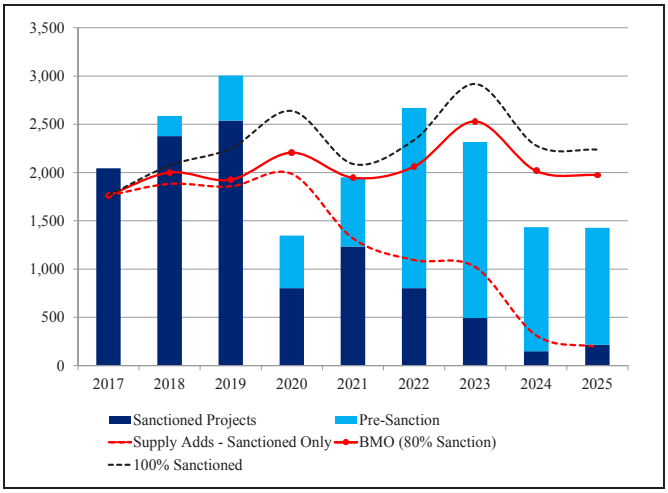
Exhibit 13: Floating Rig Day Rates – Annual Trend ($000/day)



Source: IHS Petrodata, BMO Capital Markets

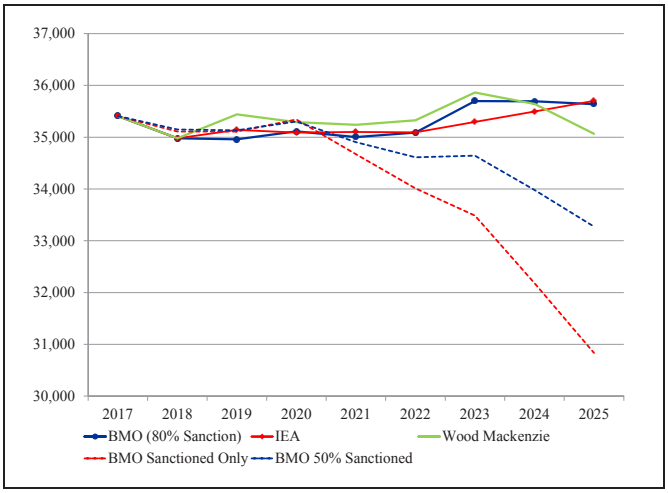
At face value the supply implications of lower costs may be significant—more than two million b/d of incremental supply annually to 2025; but we believe there is risk to achieving these targets due to execution and cost inflation risks. More than 70% of projects beyond 2020 are unsanctioned: technical discoveries in various stages of evaluation and early delineation. In our view these are far from certain, particularly marginal projects whose economics appear viable under current costs but may fail with increases in contract drilling rates. The impact on supply/demand could be significant given steep global production declines (Exhibit 15).

Exhibit 14: International Non-OPEC New Projects (000 b/d)



Source: BMO Capital Markets, Company Reports

Exhibit 15: International Non-OPEC Supply (000 b/d)

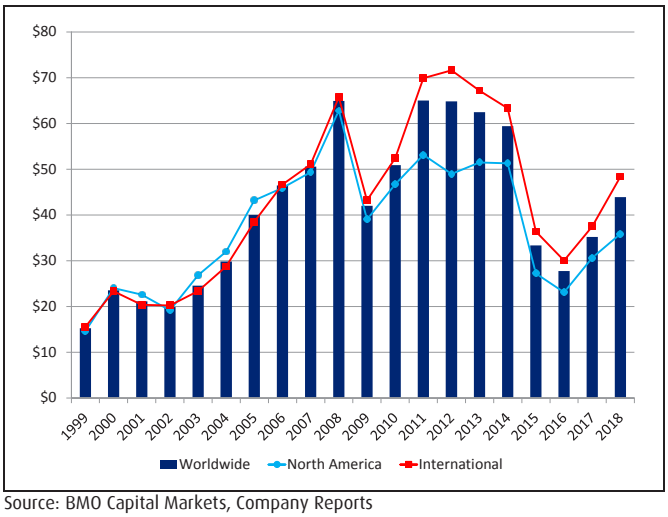


Source: BMO Capital Markets, IEA, Wood Mackenzie

2018 Cost Trends: Re-inflation Confirms Cycle Bottom

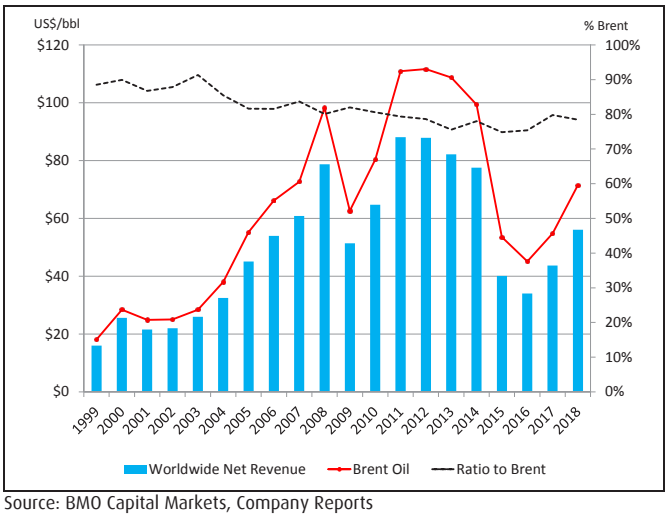
After reaching new cycle lows of just over $55/boe in 2017, our study suggests that the price of Brent crude oil required to cover all costs of finding, developing, and producing a barrel of crude oil and/or natural gas reversed course in 2018, increasing 11% to $61.45/boe. It appears that both capital and operating costs are rising with modest increases in industry activity on the back of stronger oil prices. Brent crude oil prices increased 30% in 2018 to average $71.51/bbl while NYMEX natural gas prices were flat on the year. Despite higher benchmark prices, however, regional price differentials were volatile and also effectively increased implied costs for exposed producers (particularly in Canada and certain U.S. regions).

Exhibit 16: Upstream Net Revenue by Region ($/Boe)



Source: BMO Capital Markets, Company Reports

Exhibit 17: Revenue vs. Brent Oil Prices ($/Boe)



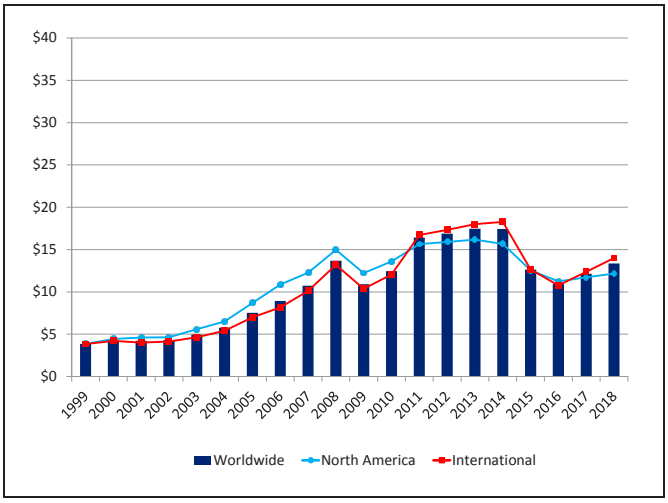
Source: BMO Capital Markets, Company Reports

Field operating costs continued to rise off 2016 lows in 2018, but remain 35% below peak

Modest Operating Cost Inflation Trend

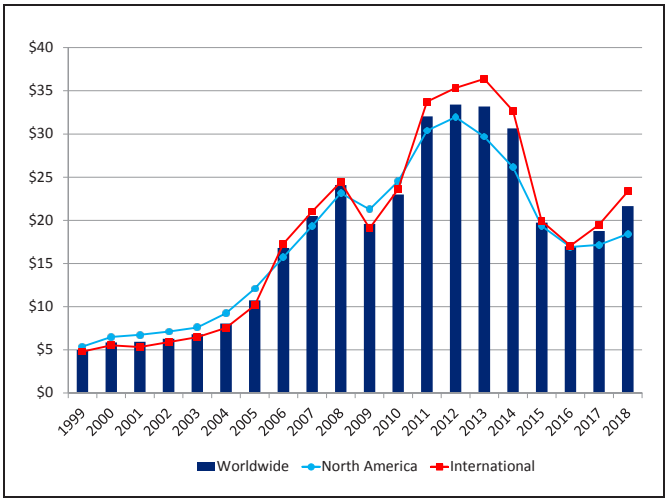
In 2018, industry operating costs continued to rise off the 2016 lows. Field production costs increased another 10% to $13.35/boe (6:1 oil/gas basis), now 24% below the market peak. On the basis of our realized ratio methodology, operating costs are now 35% below peak levels and still 10% lower than was seen in 2009 (Exhibit 19).

Exhibit 18: Production Costs by Region ($/Boe)



Source: BMO Capital Markets, Company Reports

Exhibit 19: Operating Costs ($/Boe, Realized Oil/Gas Ratio)

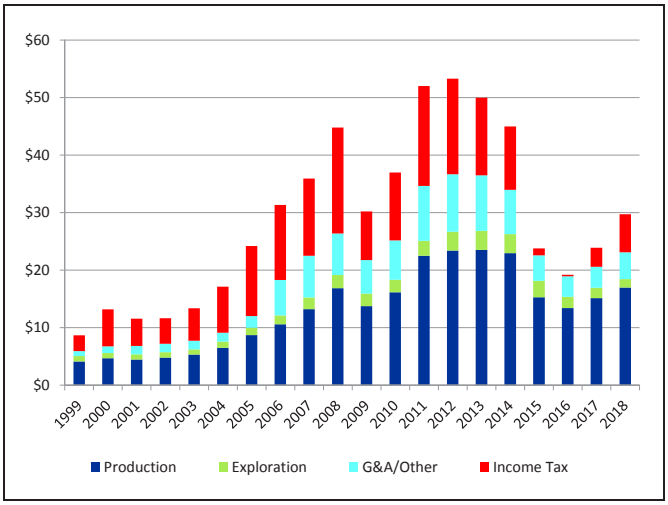


Source: BMO Capital Markets, Company Reports

Total upstream costs, including exploration, G&A/other costs and taxes increased another 24% in 2018 to average $29.71/boe (Exhibit 20). Excluding variable taxes, core upstream costs

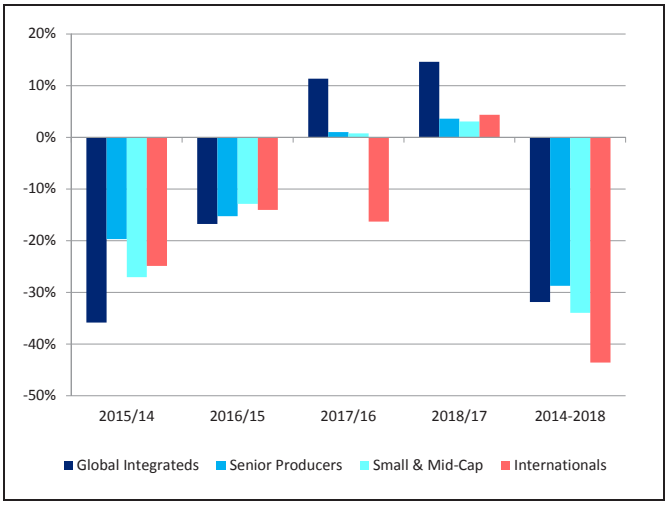
increased 12% to $23.10/boe, but remain 37% below the peak. Over the prior year, lease operating costs increased 12%, while G&A/other expenses rose 28%, although this was offset by a 21% decrease in exploration costs. The majority of cost inflation has been driven by the Global Majors based on our study results.

Exhibit 20: Operating Cost Structure ($/Boe, Realized Ratio)



Source: BMO Capital Markets, Company Reports

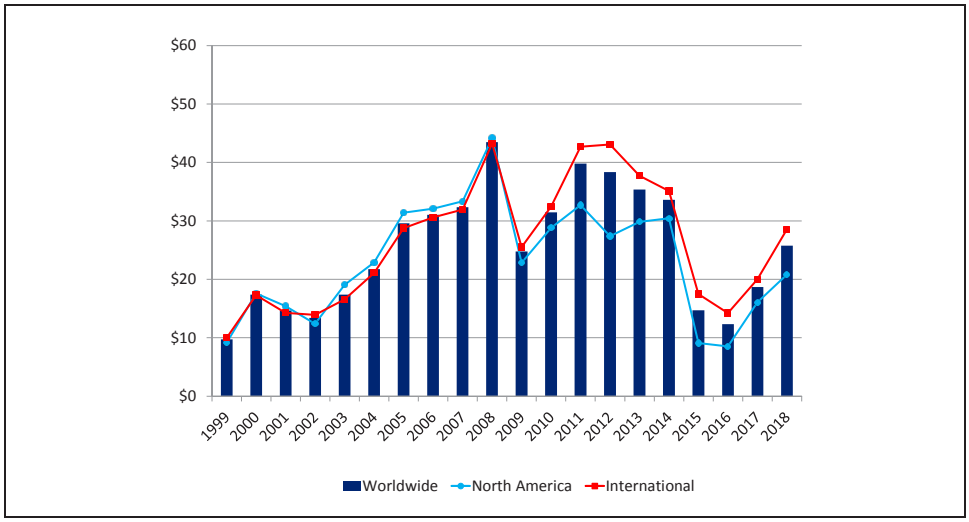
Exhibit 21: Operating Cost Reductions by Peer Group (%)



Source: BMO Capital Markets, Company Reports

Rising commodity prices and revenue growth so far have outpaced cost inflation in this early part of the cycle, and allowed producers to post significantly better profitability and returns on capital employed in 2018. Worldwide operating earnings (a proxy for upstream cash flow) increased by another 38% to $25.77/boe (Exhibit 22).

Exhibit 22: Upstream Operating Earnings by Region ($/Boe)



Source: BMO Capital Markets, Company Reports
Notes: Operating earnings calculated as net revenue less production costs, exploration costs, and Other costs

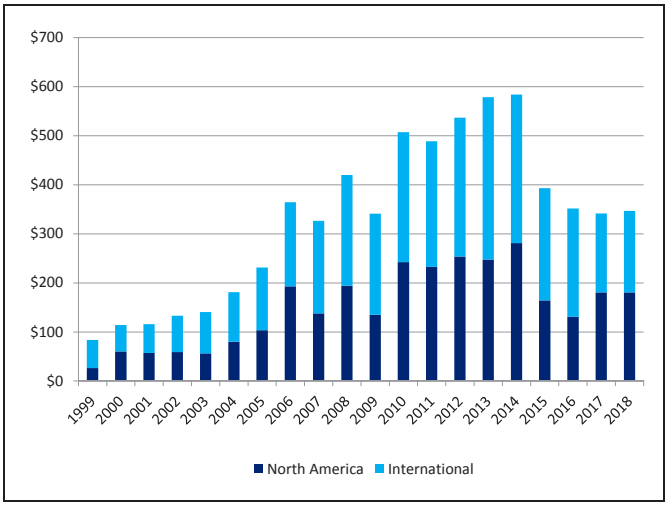
Reserve replacement costs reached a floor in 2017 and have since reversed course; however, low costs relative to previous market troughs suggest more structural change

Reserve Costs on the Rise, but Still Historically Low …

Reserve replacement cost (Finding and Development, or F&D) is the single-most important component of full-cycle supply cost, representing capital investment in reserves and production. Global reserve replacement costs have reached a cyclical floor and are now on the rise following substantial decreases in capital spending since 2014 and improvements in replacement performance since 2017. In 2018 spending increased marginally while reserve

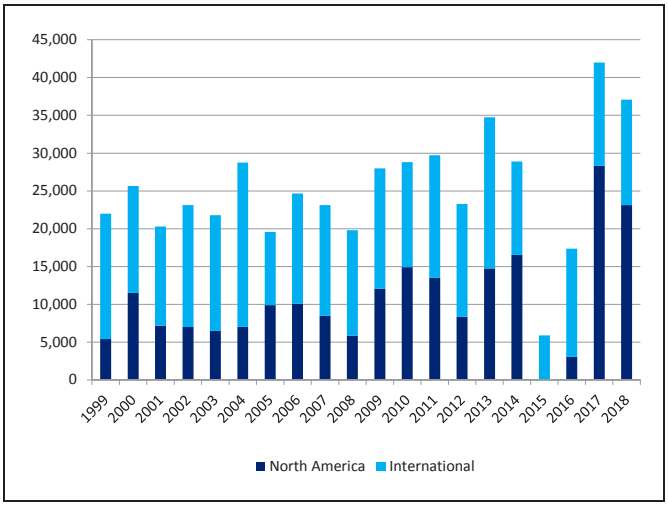
efficiency gains are slowing, resulting in a modest increase to reserve replacement costs. North American operations have been the primary driver of deflation since 2014, but also experienced the most re-inflation in 2018 as a function of rising shale oil activity. *The fact the F&D costs remain well below previous cycle trough levels indicates to us that structural factors are leading to sustainably lower costs.*

Exhibit 23: Upstream Capital Spending by Region ($ Billion)



Source: BMO Capital Markets, Company Reports

Exhibit 24: Worldwide Proved Reserve Adds (Million Boe)

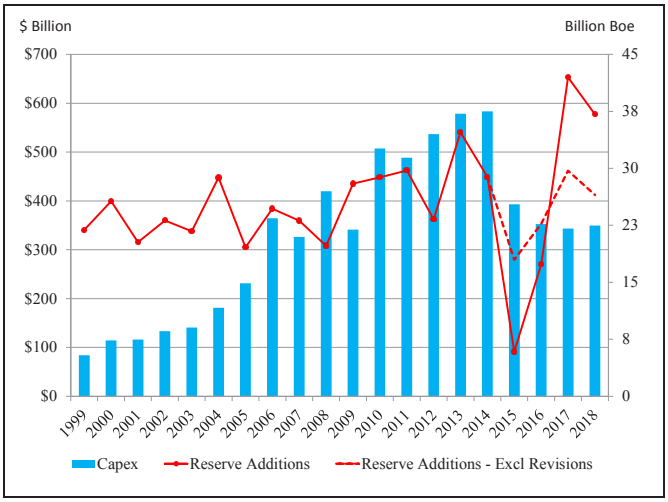


Source: BMO Capital Markets, Company Reports

Solid Reserve Replacement Maintained

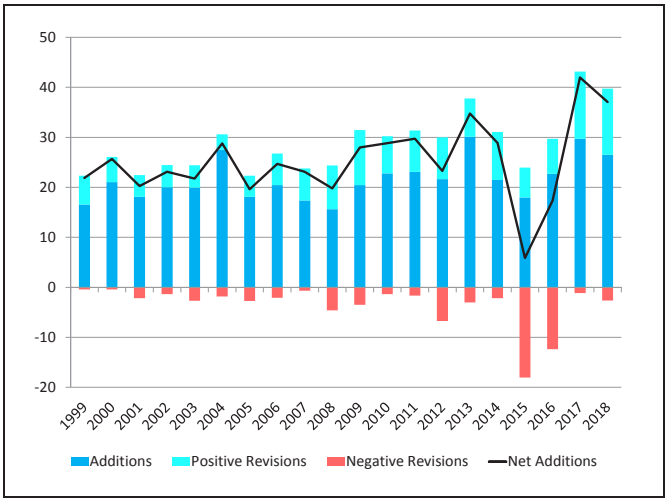
Capital spending remained constrained in 2018 as many companies are under pressure to return cash to shareholders. Total spending for companies in our study was $350 billion, an increase of $6 billion or 2%. Vastly improved capital efficiencies that were first seen in 2017 carried into 2018 as reserve replacement performance continues to benefit from more discerning corporate investments in core operations. As shown in Exhibit 26, net additions to proved reserves were 40 billion boe compared to 43 billion boe in 2017. Positive economic revisions related mostly to higher oil prices were again larger than normal and improved results. Drill bit additions held relatively strong considering spending levels. This trend continues to speak to the influence of ongoing advancements in pad drilling in U.S. shale plays.

Exhibit 25: Reserve Replacement vs. Capital Spending



Source: BMO Capital Markets, Company Reports

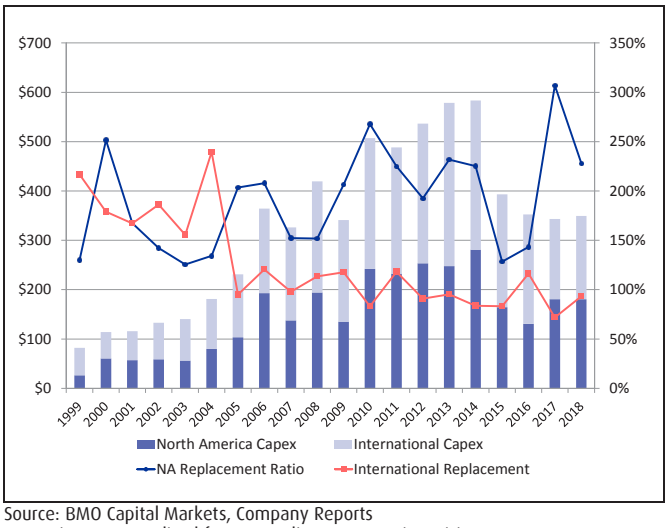
Exhibit 26: Worldwide Reserve Adds by Source (Billion Boe)



Source: BMO Capital Markets, Company Reports

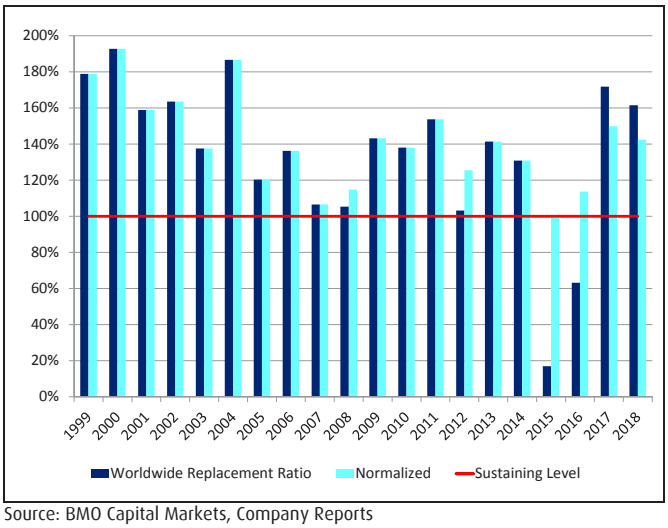
In Exhibit 27 we show that North American operations have been primarily responsible for improved reserve replacement since 2015, while international reserve additions continue to hover below sustainable levels of 100% of production despite a 4% uptick in spending. North American capital spending was flat at $180 billion. Taken together, global reserve replacement (additions as a percentage of production) stabilized around 140% on a normalized basis—again, supported almost solely by better North American reserve performance.

Exhibit 27: Capex vs. Reserve Replacement ($ Billion, %)



Source: BMO Capital Markets, Company Reports
Note: Figures normalized for extraordinary economic revisions

Exhibit 28: Global Reserve Replacement (% of Production)

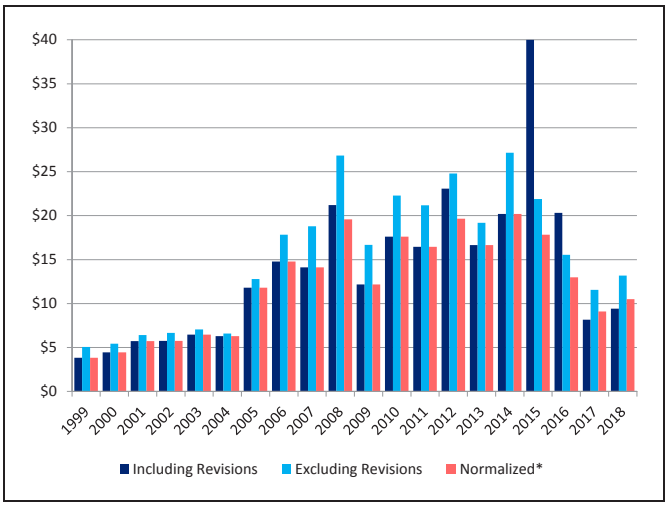


Source: BMO Capital Markets, Company Reports

Despite rising 16% in 2018, global F&D costs remain well below the last cycle bottom

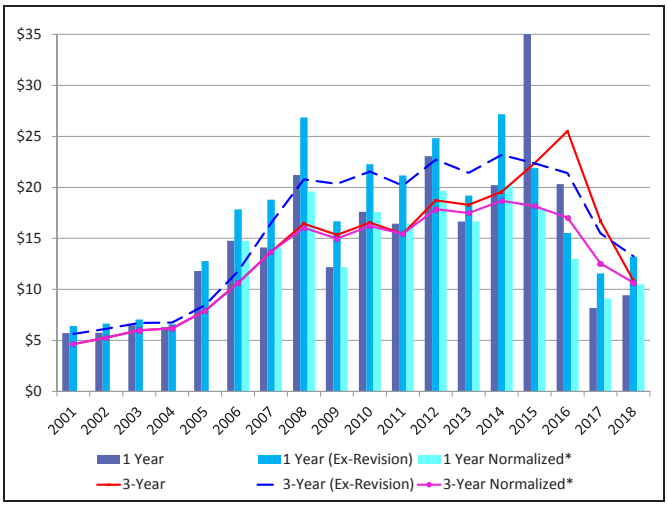
Taken together, worldwide F&D costs as reported on a standard 6:1 basis were $9.42/boe in 2018, while three-year costs averaged $10.84/boe with the influence of significant positive economic revisions (Exhibit 29). Excluding abnormal revisions, we estimate that core F&D costs rose 15% to $10.51/boe, while three-year normalized costs eased 15% to $10.66/boe. Details regarding worldwide average reserve replacement are outlined in Exhibit 30, below.

Exhibit 29: Proved Reserve Replacement Costs ($/Boe, 6:1)



Source: BMO Capital Markets, Company Reports

Exhibit 30: Worldwide Reserve Costs ($/Boe, 6:1)



Source: BMO Capital Markets, Company Reports

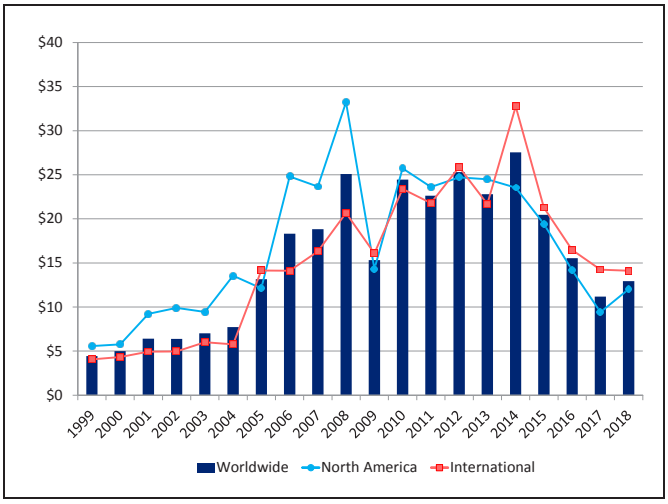
Solid reserve replacement was maintained in 2018, largely on the back of North American shale efficiencies

When viewed on a realized oil/gas price ratio basis, we estimate that normalized F&D costs increased 16% to $12.94/boe, which is notably still 16% below the 2009 cycle low (Exhibit 31). Inflation in North American F&D costs outpaced international operations, rising 24% to $9.36/boe, but remain much lower overall compared to $12.09/boe (Exhibit 32). On a three-

See pages F1 to F4 for analyst coverage.

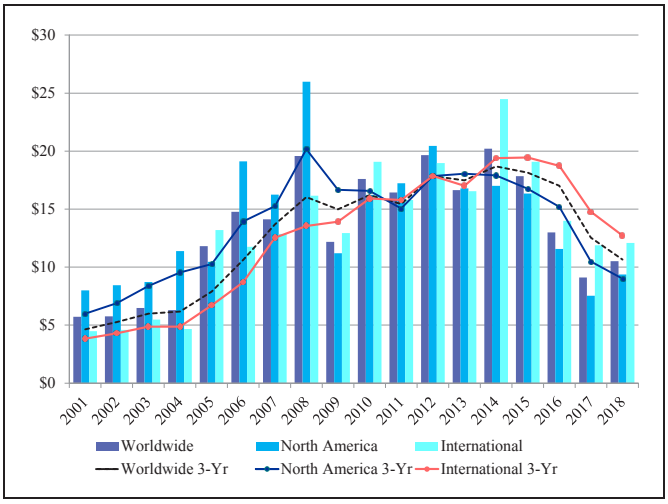
year average basis, North American costs have decreased 50% since 2014 to $9.01/boe compared to a 34% decrease for international operations at $12.72/boe.

Exhibit 31: F&D Costs ($/Boe, Realized Oil/Gas Ratio)



Source: BMO Capital Markets, Company Reports

Exhibit 32: Reserve Replacement Costs by Region ($/Boe)



Source: BMO Capital Markets, Company Reports

Exhibit 33: Worldwide Reserve Replacement Cost Summary ($, 6:1 Gas:Oil Ratio Basis)

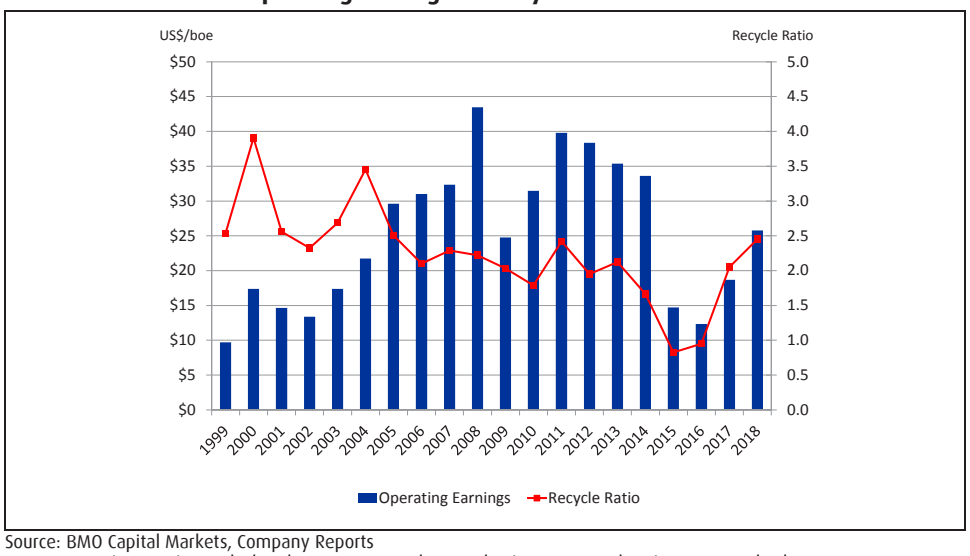
Worldwide F&D Cost Summary (US$, net)	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	105,618	109,919	115,141	118,623	119,533	121,475	121,453	121,709	120,586	122,230	125,764	122,860	122,349
Liquids Production (b/d)	29,520,017	29,942,029	30,321,535	29,291,908	29,682,016	31,225,141	32,054,887	33,617,748	33,046,396	33,580,583	34,132,737	33,586,572	33,286,470
Total Production (boe/d)	47,123,074	48,261,864	49,511,654	49,062,425	49,604,205	51,470,979	52,297,127	53,902,664	53,144,071	53,952,224	55,093,412	54,063,236	53,677,900
% Gas Production	37%	38%	39%	40%	40%	39%	39%	38%	38%	38%	38%	38%	38%
% Oil Production	63%	62%	61%	60%	60%	61%	61%	62%	62%	62%	62%	62%	62%
Proven Reserves:													
Gas Reserves (bcf)	578,083.8	592,943.7	607,359.6	625,362.2	591,151.5	633,544.2	641,749.4	594,535.7	590,026.8	616,585.3	616,905.0	607,839.0	611,960.4
Oil Reserves (mmbbls)	115,434.4	126,029.4	130,590.4	134,177.7	139,951.1	154,425.4	166,405.4	155,425.7	145,746.0	155,083.0	164,406.3	155,078.4	157,413.3
Total Proven Reserves (mmboe)	211,781.7	224,853.3	231,817.0	238,404.8	238,476.4	260,016.1	273,363.7	254,515.0	244,083.8	257,847.2	267,223.7	256,384.9	259,406.7
% Gas Reserves	45%	44%	44%	44%	41%	41%	39%	39%	40%	40%	38%	40%	39%
% Oil Reserves	55%	56%	56%	56%	59%	59%	61%	61%	60%	60%	62%	60%	61%
Proven Reserve Life Index	12.4	12.9	12.9	13.5	13.3	13.9	14.3	13.0	12.6	12.6	12.6	12.6	13.0
Proven Net Reserve Additions:													
Gas Additions (bcf)	56,154.6	55,065.8	68,182.8	62,283.3	11,313.9	66,631.9	60,077.2	2,686.1	53,138.7	73,324.4	52,285.1	178,748.2	241,511.5
Oil Additions (mmbbls)	8,749.6	16,047.5	13,574.5	17,129.4	16,782.1	15,443.5	14,945.6	2,875.7	3,400.2	21,598.4	23,754.0	48,752.6	66,573.8
Net Additions (mmboe)	18,108.7	25,225.1	24,938.3	27,509.9	18,667.7	26,548.8	24,958.5	3,323.3	12,256.6	33,819.1	32,468.2	78,543.9	106,825.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	13,258.2	17,910.9	17,128.8	19,987.0	19,932.6	22,469.8	18,343.1	16,069.4	13,318.0	19,431.9	20,954.4	53,704.3	88,116.8
Net Acquisitions	2,418.8	2,598.0	5,623.1	2,894.9	1,735.3	8,078.5	3,090.3	2,309.1	9,430.7	10,266.5	5,538.3	25,235.4	30,634.8
Dispositions/Other	(1,680.4)	(2,761.7)	(3,881.9)	(2,202.1)	(4,603.9)	(8,201.1)	(3,923.1)	(2,547.0)	(5,102.1)	(8,169.3)	(4,615.6)	(17,887.0)	(24,357.1)
Revisions of Estimates	4,112.1	7,477.9	6,068.4	6,830.1	1,603.8	4,201.6	7,448.2	(12,508.2)	(5,389.9)	12,290.0	10,591.1	17,491.2	12,431.2
Abnormal Revisions/Adjustments	(1,637.1)	-	-	-	(4,036.8)	-	-	(16,162.6)	(9,793.1)	4,307.8	3,825.1	(1,660.3)	(17,822.8)
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	73.2%	71.0%	68.7%	72.7%	106.8%	84.6%	73.5%	483.5%	108.7%	57.5%	64.5%	68.4%	82.5%
Acquisitions	13.4%	10.3%	22.5%	10.5%	9.3%	30.4%	12.4%	69.5%	76.9%	30.4%	17.1%	32.1%	28.7%
Dispositions	-9.3%	-10.9%	-15.6%	-8.0%	-24.7%	-30.9%	-15.7%	-76.6%	-41.6%	-24.2%	-14.2%	-22.8%	-22.8%
Revisions of Estimates	22.7%	29.6%	24.3%	24.8%	8.6%	15.8%	29.8%	-376.4%	-44.0%	36.3%	32.6%	22.3%	11.6%
Additions as % of Production:													
Gas	145.7%	137.3%	162.2%	143.8%	25.9%	150.3%	135.5%	6.0%	120.7%	164.4%	113.9%	132.9%	108.2%
Oil	81.2%	146.8%	122.7%	160.2%	154.9%	135.5%	127.7%	23.4%	28.2%	176.2%	190.7%	132.6%	109.6%
Total	105.3%	143.2%	138.0%	153.6%	103.1%	141.3%	130.8%	16.9%	63.2%	171.7%	161.5%	132.7%	109.0%
Additions as % of Reserves:													
Gas	9.7%	9.3%	11.2%	10.0%	1.9%	10.5%	9.4%	0.5%	9.0%	11.9%	8.5%	29.4%	39.5%
Oil	7.6%	12.7%	10.4%	12.8%	12.0%	10.0%	9.0%	1.9%	2.3%	13.9%	14.4%	31.4%	42.3%
Total	8.6%	11.2%	10.8%	11.5%	7.8%	10.2%	9.1%	1.3%	5.0%	13.1%	12.2%	30.6%	41.2%
Capital Expenditures (US$million):													
Exploration	$61,099	$55,795	$60,668	$72,352	$82,473	$86,905	$79,049	$53,435	$38,168	$39,697	$38,765	$116,630	$249,114
Development	$260,966	$230,871	$272,321	$327,069	$382,400	$417,991	$433,897	$300,765	$245,085	$206,746	$231,029	$682,861	$1,417,522
Acquisitions	$99,111	$55,119	$175,716	$89,347	$70,294	$73,214	$68,385	$38,169	$61,454	$88,348	$76,913	$226,714	$333,268
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	-$1,463	-$864	-$1,451	-$249	$1,518	$322	$2,215	$646	$7,918	$8,443	$2,780	$19,140	$22,001
Total Expenditures	$419,713	$340,922	$507,254	$488,519	$536,685	$578,432	$583,546	$393,015	$352,625	$343,234	$349,487	$1,045,345	$2,021,906
Expenditures as % of Total (US$million):													
Exploration	14.6%	16.4%	12.0%	14.8%	15.4%	15.0%	13.5%	13.6%	10.8%	11.6%	11.1%	11.2%	12.3%
Development	62.2%	67.7%	53.7%	67.0%	71.3%	72.3%	74.4%	76.5%	69.5%	60.2%	66.1%	65.3%	70.1%
Acquisitions	23.6%	16.2%	34.6%	18.3%	13.1%	12.7%	11.7%	9.7%	17.4%	25.7%	22.0%	21.7%	16.5%
Cashflow (US$million)	$479,792	$345,711	$439,008	$524,593	$524,735	$525,321	$506,950	$303,171	$246,664	$325,974	$413,542	$986,181	$1,796,302
Cashflow (US$/boe)	$27.90	$19.63	$24.29	$29.29	$28.98	$27.96	$26.56	$15.41	$12.72	$16.55	$20.56	$16.66	$18.34
Recycle Ratio	1.3x	1.6x	1.4x	1.8x	1.3x	1.7x	1.3x	0.2x	0.6x	2.0x	2.2x	1.5x	1.2x
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$18.54	$11.29	$14.35	$14.89	$21.59	$18.93	$19.89	$99.46	$35.73	$7.77	$8.55	$11.23	$16.58
Acquisition Costs	$40.97	$21.22	$31.25	$30.86	$40.51	$9.06	$22.13	$16.53	$6.52	$8.61	$13.89	$8.98	$10.88
All Sources (incl. Revisions)	$21.21	$12.18	$17.60	$16.44	$23.06	$16.65	$20.20	$66.95	$20.31	$8.17	$9.42	$10.84	$15.41
Exploration & Development - Normalized*	**$16.94**	**$11.29**	**$14.35**	**$14.89**	**$18.18**	**$18.93**	**$19.89**	**$17.96**	**$15.98**	**$8.99**	**$9.73**	**$10.97**	**$14.08**
All Sources - Normalized*	**$19.59**	**$12.18**	**$17.60**	**$16.44**	**$19.65**	**$16.65**	**$20.20**	**$17.84**	**$12.99**	**$9.11**	**$10.51**	**$10.66**	**$13.57**
Exploration & Development (excl. revisions)	$24.29	$16.01	$19.44	$19.98	$23.32	$22.47	$27.96	$22.04	$21.27	$12.68	$12.88	$14.89	$18.91
Acquisition Costs	$40.97	$21.22	$31.25	$30.86	$40.51	$9.06	$22.13	$16.53	$6.52	$8.61	$13.89	$8.98	$10.88
All Sources (excl. revisions)	$26.84	$16.67	$22.28	$21.17	$24.80	$19.19	$27.16	$21.89	$15.54	$11.56	$13.19	$13.24	$17.03
Geographically Segmented Costs													
North America	**$25.98**	**$11.19**	**$16.23**	**$17.23**	**$20.46**	**$16.78**	**$17.01**	**$16.35**	**$11.57**	**$7.53**	**$9.36**	**$9.01**	**$11.55**
International	**$16.16**	**$12.93**	**$19.08**	**$15.78**	**$18.98**	**$16.55**	**$24.48**	**$19.09**	**$13.99**	**$11.88**	**$12.09**	**$12.72**	**$15.99**
Africa	$16.87	$18.63	$17.47	$32.01	$30.06	$40.90	$30.29	$19.97	$13.01	$12.51	$11.83	$12.46	$16.71
Europe	$18.32	$8.82	$12.60	$8.01	$14.16	$8.42	$18.11	$17.87	$7.42	$9.72	$10.02	$8.83	$11.47
Asia	$12.06	$12.46	$21.11	$23.16	$23.57	$17.31	$23.47	$12.69	$16.31	$11.11	$14.59	$13.93	$15.45
Latin America	$23.47	$9.80	$13.14	$15.56	$21.12	$23.02	$25.86	$29.01	$27.19	$20.34	$12.06	$19.87	$22.60
Other / Non-Segmented	$17.05	$24.23	$16.81	$32.97	$11.55	$41.77	$39.07	$27.96	$51.65	$51.65	$51.65	$39.56	$44.40

Source: BMO Capital Markets, Company Reports
Note: Reserve replacement costs calculated based on after royalty reserves, F&D costs exclude dispositions

Rising Profitability Measures on Better Earnings, Lower F&D

The rapid increase in operating earnings that we outlined above outpaced F&D cost inflation, resulting in meaningful improvements in recycle ratios, which increased to 2.1x from an unsustainable 0.95x back in 2016 (Exhibit 34).

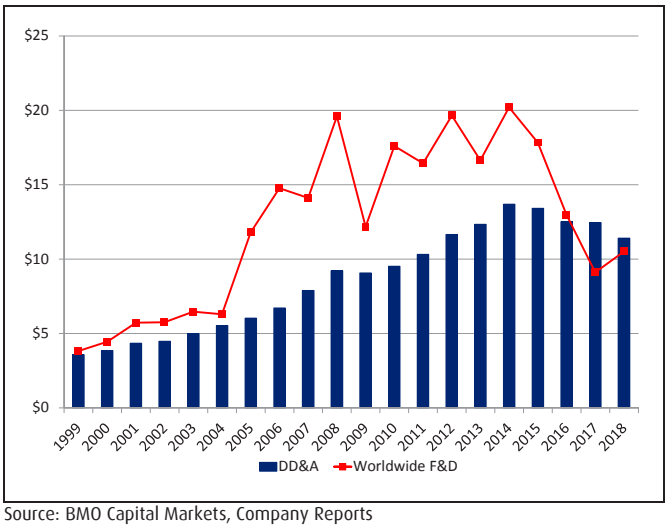
Exhibit 34: Worldwide Operating Earnings vs. Recycle Ratio



Source: BMO Capital Markets, Company Reports
Notes: Operating earnings calculated as net revenue less production costs, exploration costs, and Other costs

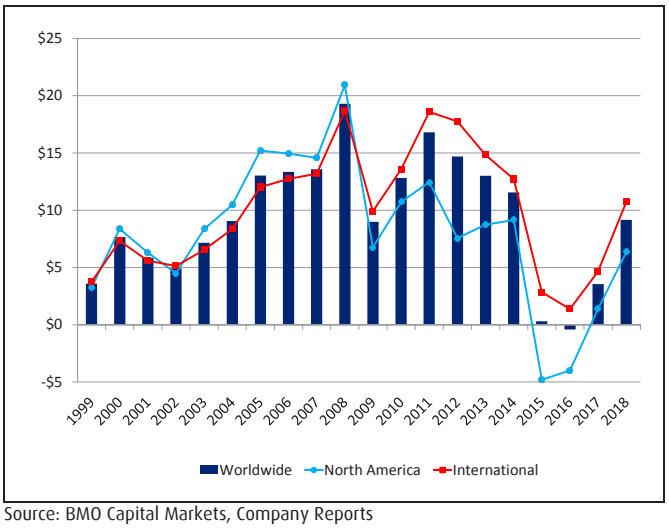
Taking into account a decreasing trend in depreciation, Upstream Results of Operations have recovered to nearly $10/boe, which remains below pre-2014 levels but when compared to materially lower capital costs implies improving profitability and returns on capital.

Exhibit 35: Upstream DD&A vs. Capital Costs ($/Boe)



Source: BMO Capital Markets, Company Reports

Exhibit 36: Upstream Results of Operations ($/Boe)



Source: BMO Capital Markets, Company Reports

Improving Additions to *Proved Developed* Reserves

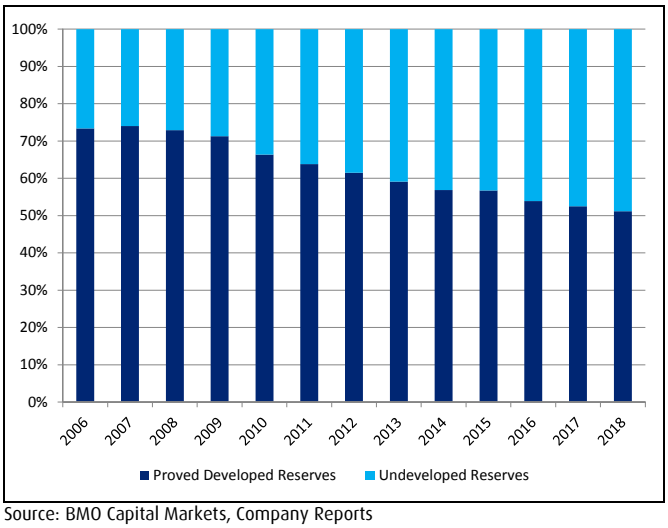
The cost of adding "productive" reserves has decreased slightly less than for total proved reserves

We typically use Total Proved reserves as the basis for calculating the unit capital component of supply costs because it is the most widely available measure and it is a reasonable stock screen when a full-cycle track record of costs (3-5 years) is considered. That said, it is not a perfect measure over the short term because aggressive booking of Proved Undeveloped reserves (PUDs) can *underestimate the implied cost of productive barrels* as they require more capital to bring onto production. All else equal, companies with large reserve additions from PUDs have higher costs for reserves that actually impact the bottom line. This can have an impact on peer cost rankings and the translation of "low costs" to reported returns on capital. Independent producers in our study have booked relatively large PUD additions in recent years. As a result, developed reserves now account for just ~50% of total proved reserves from more

than 70% prior to 2010 (Exhibit 37). The trend of overbooking PUDs improved slightly in 2018 with developed additions making up around 70% of total proved (Exhibit 38).

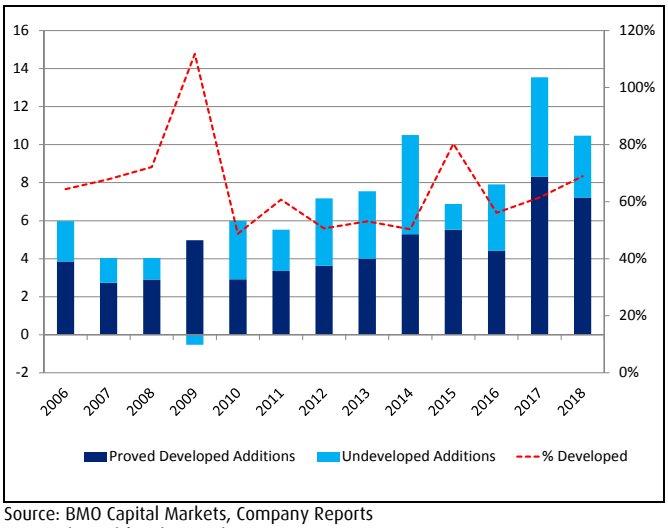
Aggressive reserve booking practices and immature asset bases contribute to a higher proportion of undeveloped reserves and additions for small and mid-cap producers. *Senior producers in general boast the highest proportion of productive reserves.*

Exhibit 37: Developed vs. Undeveloped Reserves – E&Ps



Source: BMO Capital Markets, Company Reports

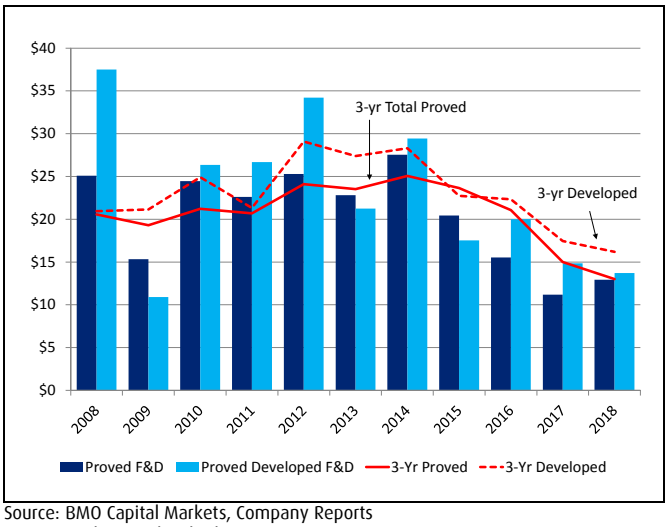
Exhibit 38: Developed vs. Undeveloped Additions – E&Ps



Source: BMO Capital Markets, Company Reports
Note: Adjusted for abnormal negative revisions to reserves

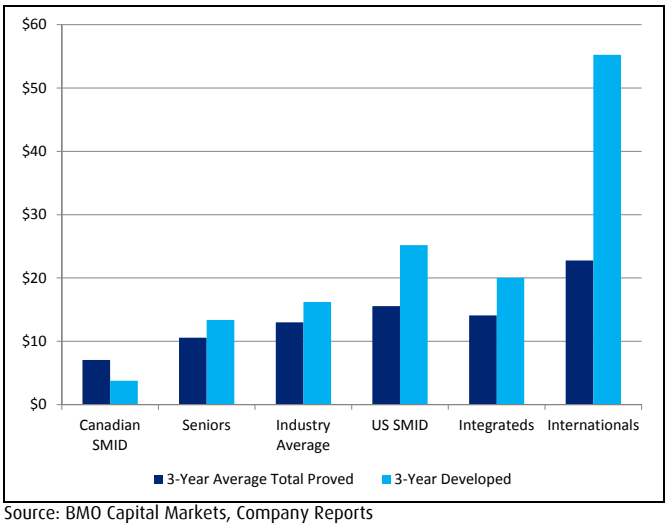
All told, the industry's Proved Developed reserve replacement cost decreased 8% to $13.72/boe in 2018, compared to an increase in Total Proved costs of 16%, demonstrating the improvements in adding established as opposed to undeveloped reserves. On a three-year basis, Proved Developed costs average $16.20/boe versus Total Proved costs of $13.01/boe.

Exhibit 39: Total Proved vs. Developed F&D Costs ($/Boe)



Source: BMO Capital Markets, Company Reports
Note: Based on Realized Oil:Gas Ratio

Exhibit 40: Three-Year Proved vs. Developed F&D ($/Boe)



Source: BMO Capital Markets, Company Reports

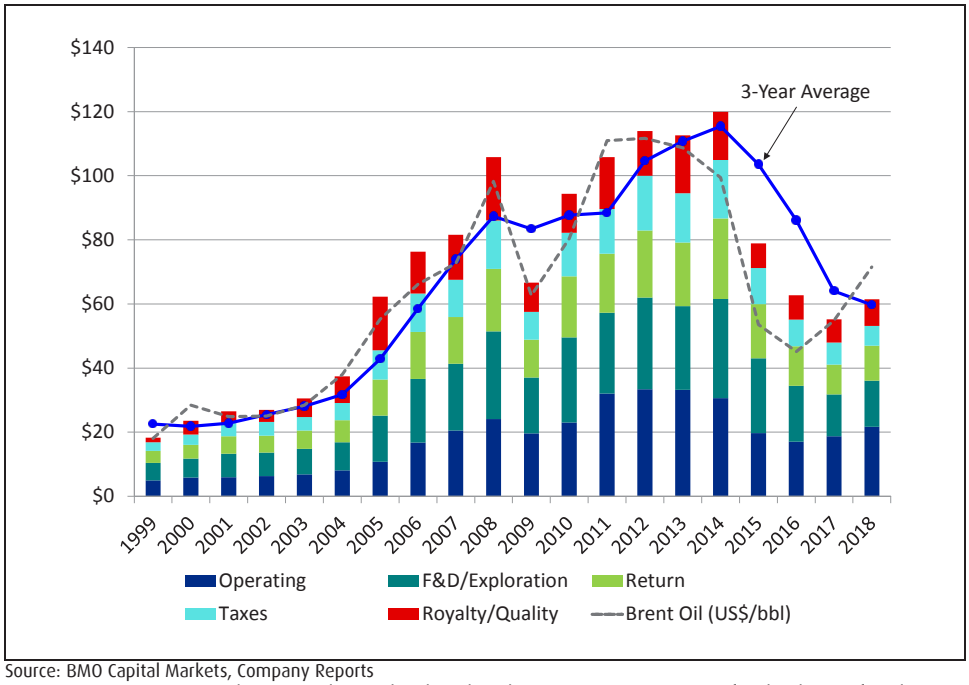
Worldwide Breakeven Emerging From Trough

Global supply costs rose 11% in 2018 but remain roughly 50% below the 2014 peak

Industry costs emerging from the cycle low in 2017 and three-year average supply costs settling in at $60/bbl reaffirm our belief that $60/bbl is the new floor for go-forward trading range

Taking all reported costs and product quality discount of companies in our study, we infer the ***global supply cost on a Brent crude oil-equivalent basis (realized oil-to-gas price ratio) increased 11% in 2018 to average $61.45/boe from a low of $55.18/boe in 2017*** (Exhibit 41)[1]. That said, global supply costs are still roughly 50% lower than 2014 peak levels. Three-year average costs eased another 7% to settle in just below $60/boe. Given our view that 2017 was the trough year for costs in this current cycle, we believe that $60/bbl is a reasonable floor value for the go-forward trading range of crude oil. As we discuss further, supply costs may creep upward in coming years as commodity price-linked expenses such as royalties and taxes rise, and industry service costs modestly re-inflate with activity.

Exhibit 41: Global Brent-Equivalent Supply Cost ($/Boe, Realized Oil/Gas Ratio)

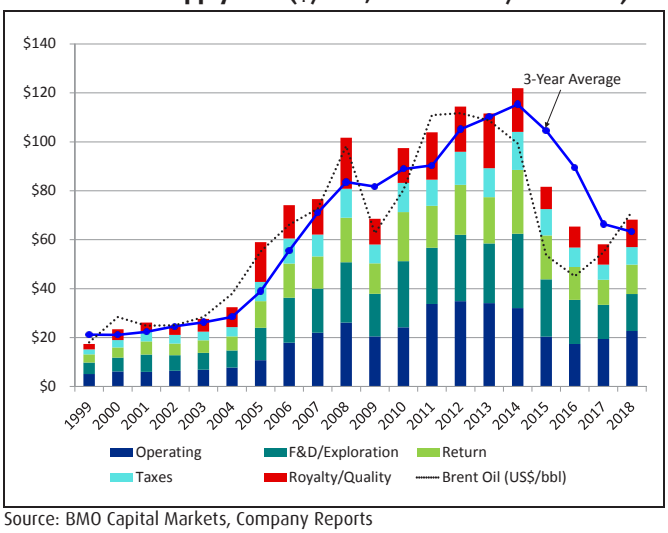


Source: BMO Capital Markets, Company Reports
Notes: Gas reserves converted to Brent oil equivalent based on the corporate average ratio of realized prices for oil:gas

Supply costs for oil-weighted companies in our survey rose 17% to $68.23/boe from $58.10/boe in 2017 and are now 44% below the 2014 peak. Three-year average oil costs decreased a further 5% to average $63.31/boe (Exhibit 42). Reported costs for natural gas weighted producers rose by just 4% to $3.50/Mcfe from $3.36/Mcfe in 2017, while three-year average costs decreased another 17% to $3.53/Mcfe (Exhibit 43).

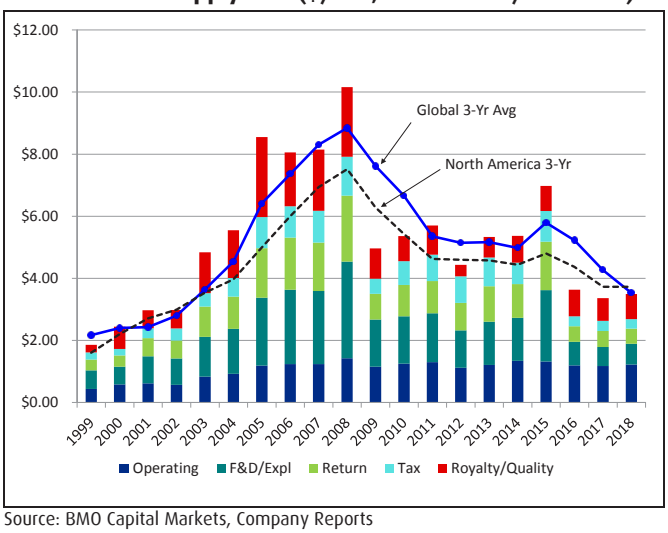
[1] The ultimate goal of our study is to determine the price of crude oil and/or natural gas required to incentivize development – that is, to cover the costs of finding, developing, and producing crude oil and natural gas globally, including a 10% return on capital.

Exhibit 42: Oil Supply Cost ($/Boe, Realized Oil/Gas Ratio)



Source: BMO Capital Markets, Company Reports

Exhibit 43: Gas Supply Cost ($/Mcf, Realized Oil/Gas Ratio)



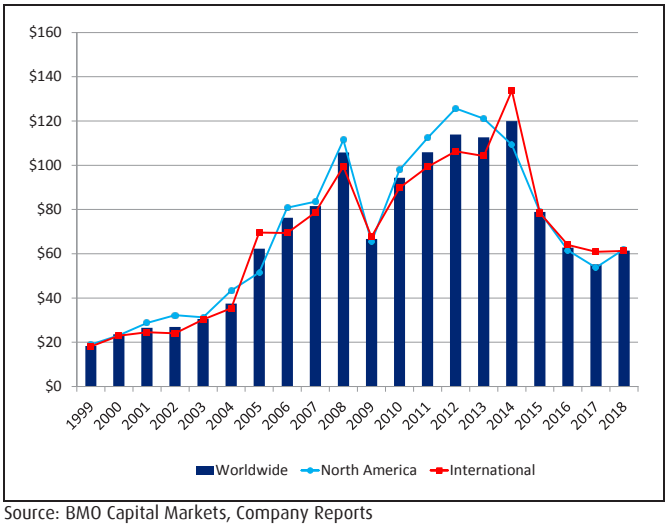
Source: BMO Capital Markets, Company Reports

Re-inflation Most Evident in North America, but Still Among Lowest Cost

North America saw the highest inflation in 2018 but retains lower three-year average supply costs than international assets

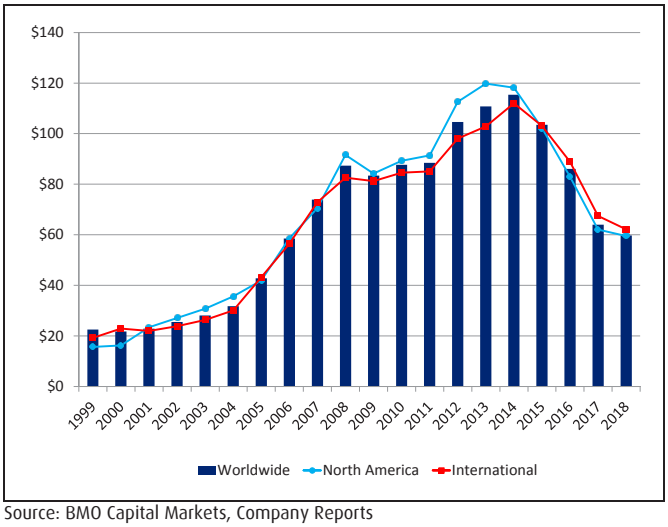
While global average supply costs rose 11% in 2018, the majority of the inflation was evident in North America. As shown in Exhibit 44, supply costs implied by the North American operations of companies in our study increase 16% to $62.07/boe, giving back most of the cost improvement seen the prior year. International operations experienced only a slight 1% re-inflation to average $61.25/boe. Despite this, North America retains a slight edge in three-year average costs, which fell 4% to $59.52/boe versus international costs of $62.18/boe.

Exhibit 44: Required Oil Price by Region ($/Boe, Brent)



Source: BMO Capital Markets, Company Reports

Exhibit 45: Three-Year Required Price ($/Boe, Brent)

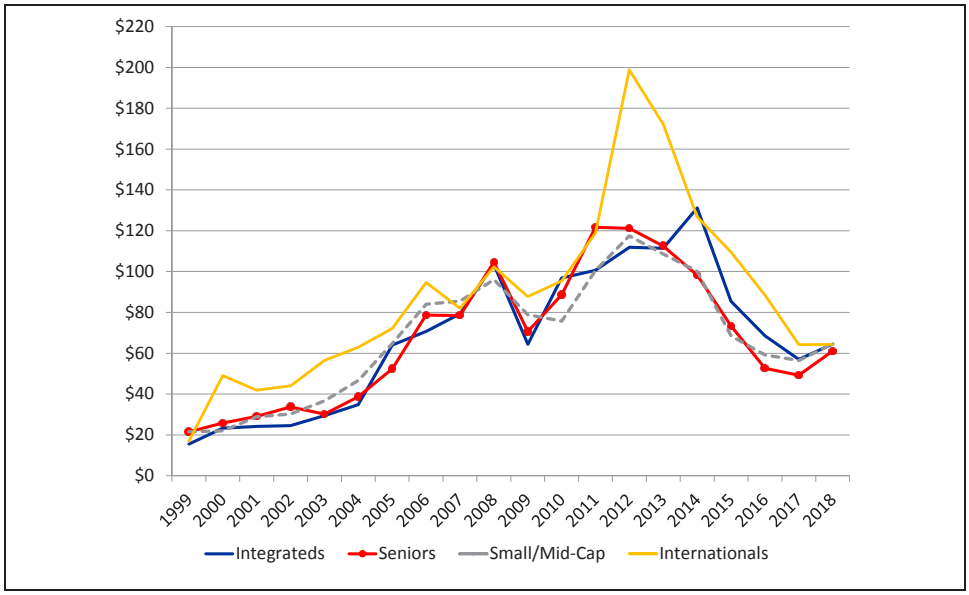


Source: BMO Capital Markets, Company Reports

Senior Producers continue to demonstrate the lowest supply costs

The variance in cost structure between peer groups has converged and tightened since 2014, although the independent Senior Producers continue to demonstrate a slight advantage with average costs of $61.11/boe in 2018 and $53.85/boe over three years (Exhibit 46).

Exhibit 46: Worldwide Supply Cost Group Comparisons ($/Boe, Realized Ratio)



Source: BMO Capital Markets, Company Reports

Exhibit 47 outlines the cost data that builds up to our Breakeven Oil Price estimates.

Exhibit 47: Breakeven Oil Price Analysis by Region ($/Boe, Realized Gas:Oil Price Ratio)

Worldwide	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.86	13.76	16.15	22.51	23.42	23.51	22.94	15.29	13.42	15.13	16.99	15.18	16.64
Exploration Expense	2.30	2.16	2.16	2.60	3.26	3.31	3.31	2.86	1.92	1.82	1.45	1.73	2.26
G&A/Other	7.23	5.84	6.84	9.52	9.99	9.67	7.72	4.45	3.58	3.63	4.66	3.96	4.76
F&D Costs	25.08	15.32	24.45	22.62	25.30	22.80	27.55	20.45	15.54	11.19	12.94	13.01	16.76
Return on Capital	19.49	11.75	19.04	18.45	20.93	19.90	25.16	16.88	12.37	9.26	10.90	10.69	14.07
Income Taxes	15.10	8.74	13.53	13.89	17.10	15.32	18.19	11.25	8.25	6.94	6.19	7.03	9.46
Breakeven Oil Price	86.06	57.56	82.18	89.60	99.99	94.52	104.87	71.18	55.09	47.98	53.13	51.61	63.94
Quality/Royalty	19.76	9.10	12.18	16.24	13.94	18.07	15.04	7.68	7.66	7.21	8.33	8.10	9.18
Required Brent Price	105.82	66.67	94.36	105.84	113.92	112.59	119.91	78.86	62.74	55.18	61.45	59.70	73.13

North America	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	20.64	17.78	20.31	25.23	25.95	24.67	21.98	16.10	14.61	15.11	15.96	15.25	16.61
Exploration Expense	2.11	2.32	2.24	2.49	3.24	3.23	3.05	3.57	2.08	1.72	1.38	1.72	2.33
G&A/Other	2.99	3.46	4.20	5.24	6.03	5.13	4.14	3.61	2.30	2.00	2.44	2.25	2.86
F&D Costs	33.23	14.31	25.72	23.62	24.69	24.49	23.54	19.42	14.18	9.41	12.02	11.32	15.71
Return on Capital	26.92	12.94	25.88	25.85	27.11	26.67	24.58	16.70	10.97	8.65	11.53	10.07	14.46
Income Taxes	12.64	5.48	11.35	12.28	14.67	14.41	12.79	6.27	5.38	5.03	3.35	4.47	6.42
Breakeven Oil Price	98.53	56.30	89.69	94.70	101.69	98.60	90.09	65.66	49.51	41.92	46.69	45.08	58.39
Quality/Royalty	12.89	9.07	8.25	17.67	23.95	22.50	19.20	13.20	12.04	11.79	15.38	14.45	14.32
Required Brent Price	111.42	65.36	97.94	112.38	125.64	121.11	109.29	78.85	61.55	53.71	62.07	59.52	72.71

International	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.59	12.45	15.61	22.43	23.50	24.41	23.36	14.90	12.87	15.13	17.52	15.14	16.65
Exploration Expense	2.37	2.11	2.25	2.74	3.40	3.53	3.43	2.54	1.85	1.87	1.48	1.74	2.23
G&A/Other	8.69	6.64	8.03	11.33	11.82	11.95	9.29	4.82	4.17	4.41	5.83	4.79	5.65
F&D Costs	20.67	16.08	23.39	21.78	25.87	21.68	32.73	21.26	16.48	14.22	14.11	15.01	19.76
Return on Capital	15.79	11.63	16.98	15.69	19.03	17.20	28.90	17.24	13.28	11.11	11.05	11.86	15.84
Income Taxes	14.38	9.67	13.42	13.00	16.51	14.23	22.92	12.57	9.68	9.14	6.82	8.53	11.65
Breakeven Oil Price	77.49	58.57	79.67	86.98	100.12	93.01	120.64	73.33	58.32	55.88	56.81	57.07	71.77
Quality/Royalty	21.93	9.02	10.14	12.27	6.21	11.18	13.09	5.00	5.66	5.01	4.44	5.10	6.64
Required Brent Price	99.42	67.59	89.81	99.25	106.34	104.19	133.73	78.33	63.99	60.89	61.25	62.18	78.41

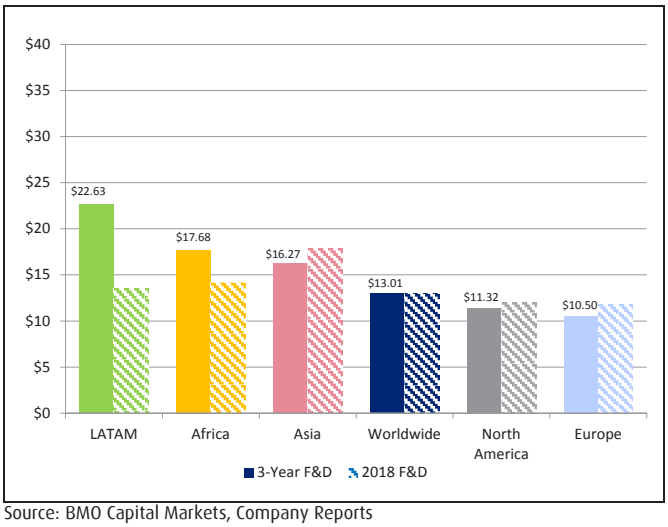
Source: BMO Capital Markets, Company Reports

Regional Supply Cost Perspective

Europe reflects the lowest F&D costs globally, followed closely by North America given the influence of resource plays

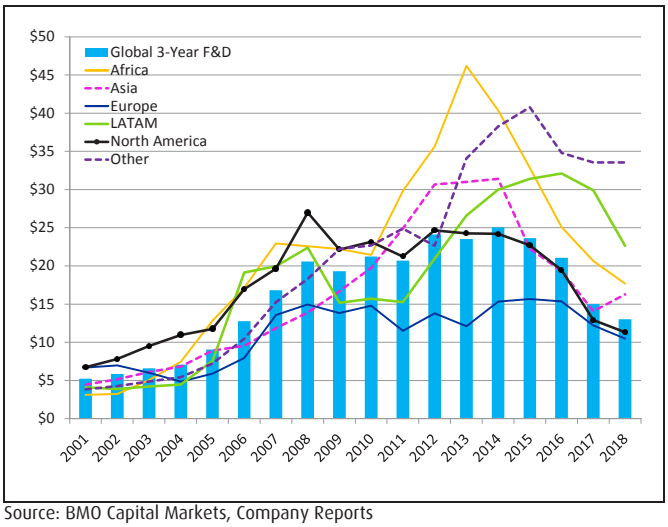
Exhibits 48 and 49 highlight average reserve replacement costs implied by the segmented operations of companies in our study by continent. According to our work, reserve costs are the highest in LATAM and Africa, while Europe, North America, and Asia imply below-average capital costs. North American costs have exhibited the strongest downward trend in recent years benefitting from increased manufacturing-style resource play development. European operations (including Russia/FSU) retain the lowest three-year average F&D costs at just $10.50/boe, followed by North America at $11.32/boe.

Exhibit 48: Average F&D by Region ($/Boe, Realized Ratio)



Source: BMO Capital Markets, Company Reports

Exhibit 49: Three-Year F&D Cost Trend ($/Boe, Realized Ratio)

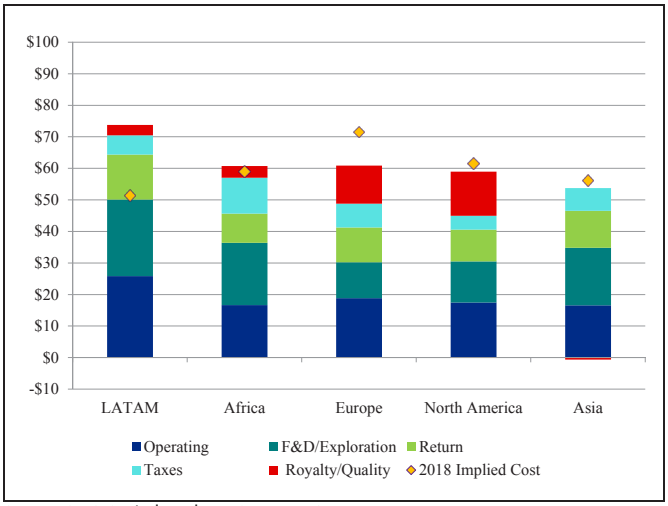


Source: BMO Capital Markets, Company Reports

Based on total costs, Asian operations have the lowest three-year average breakeven, followed by North America given vast improvements since 2014

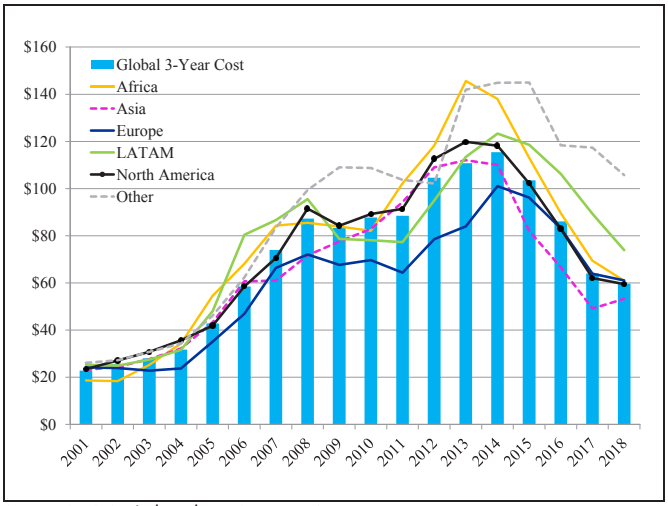
When considering total costs including reserve replacement and operating items, Asia and North America imply the lowest three-year average supply costs at $53.29/boe and $59.52/boe, respectively, while LATAM has the highest average cost at $73.93/boe. The costs of both North American and Asian oil and gas operations have moved significantly downward since 2014 (Exhibit 50). Single-year costs in 2018 were once again lowest in Asia at $57.01/boe, followed by Africa at $59.62/boe.

Exhibit 50: Implied Supply Costs ($/Boe, Realized Ratio)



Source: BMO Capital Markets, Company Reports

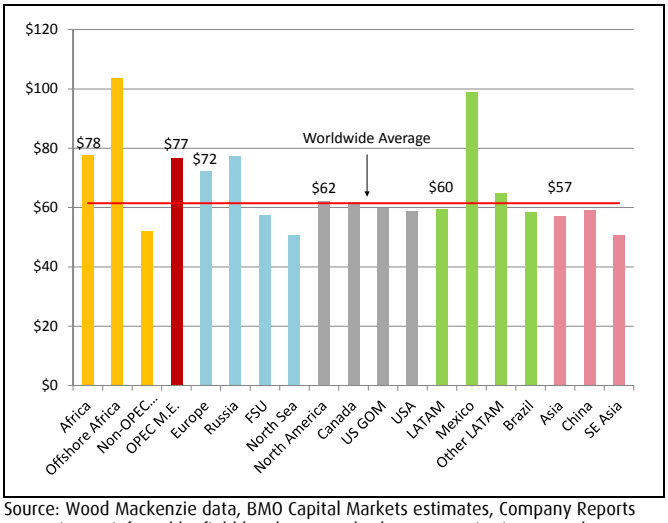
Exhibit 51: Global Three-Year Average Supply Costs ($/Boe)



Source: BMO Capital Markets, Company Reports

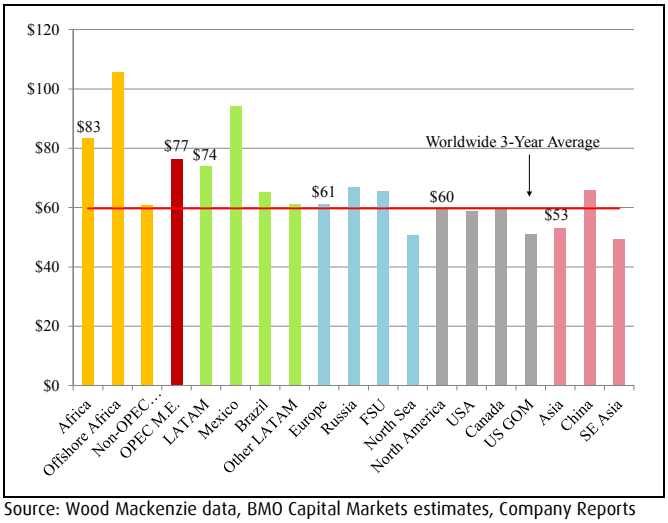
Distilling these regional results further, the North Sea (led by Norway) and Southeast Asian countries were among the lowest cost in 2018, while Offshore Africa and Mexico are among the highest. Based on three-year average trends, Southeast Asia, the U.S. Gulf of Mexico and the North Sea imply the lowest cost of supply (Exhibit 52).

Exhibit 52: 2018 Supply Cost Estimate by Country ($/Boe)



Source: Wood Mackenzie data, BMO Capital Markets estimates, Company Reports
Note: Figures inferred by field level costs and select companies in our study

Exhibit 53: Three-Year Supply Costs by Country ($/Boe)

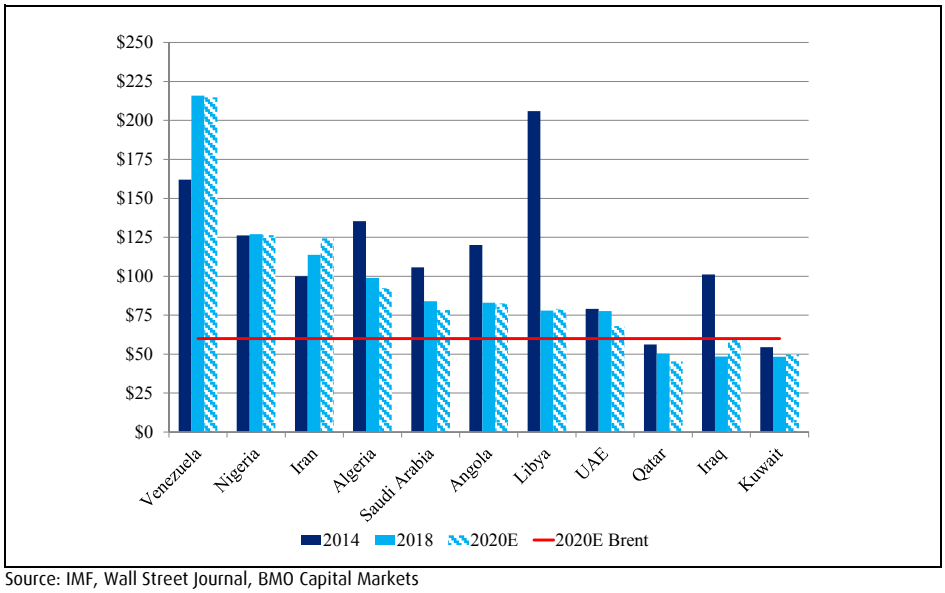


Source: Wood Mackenzie data, BMO Capital Markets estimates, Company Reports

OPEC Middle East supply costs are improving but still above the global average at $77/bbl, led by Saudi Arabia at $84/bbl

Based on fiscal estimates from the International Monetary Fund (IMF), OPEC Middle East supply costs averaged roughly $77/boe in 2018, up from just $70/boe in 2017, which implies three-year average costs of $75/boe (Exhibit 54). Aside from Iran (impacted by sanctions), Saudi Arabia retains the highest implied costs at $84/boe. The fiscal outlooks for several OPEC Middle East countries suggest modest ongoing improvement in supply costs because of government austerity measures and cuts to social programs.

Exhibit 54: OPEC Fiscal Breakeven Trend (US$/Bbl)



Source: IMF, Wall Street Journal, BMO Capital Markets

Resource Play Cost Perspectives

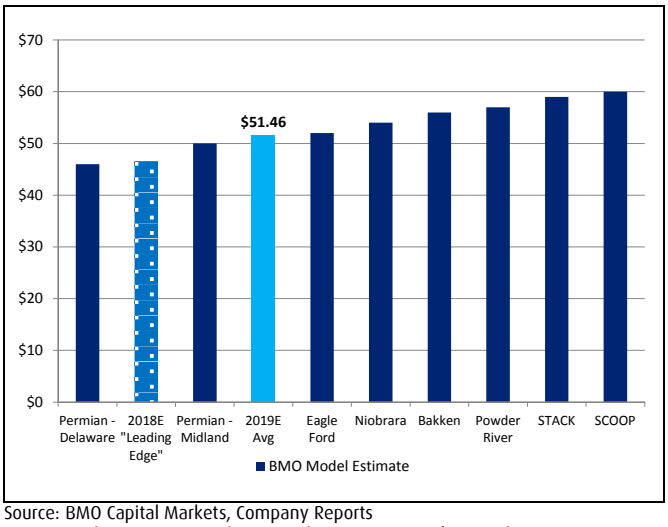
Oil and gas resource play development in North America continues to dominate industry discussion as it captures a rising portion of world supply. The attraction reflects the resource scale and manufacturing style development, which in theory translates to lower costs and better returns. Indeed, the dramatic rise of tight oil in the United States contributed to the latest global oil supply glut and we believe is partly behind a structural shift lower in average costs for the industry. Cost reductions and corporate efficiency gains in recent years have implied that half-cycle costs in some regions are now below $50/bbl, and the average economic threshold for new shale oil wells is in the range of $50-55/bbl. That said, our work continues to show that, collectively, "all-in" corporate results of producers in our study have yet to demonstrate sustainably better performance and selectivity within the peer group is vitally important. We reiterate our view that Canadian oil sands producers can compete with tight oil on the basis of risk-adjusted full-cycle economics. What is more, we believe that Canadian oil sands companies lead industry efforts to improve Environmental, Social and Governance (ESG) given the heavy focus on R&D and innovation, which in fact could influence future costs relative to competing sources.

Tight Oil – Is the Supply Cost Advantage Shrinking?

We expect reported costs to improve as land consolidation slows and lower drill-bit costs are exposed, especially for Permian players

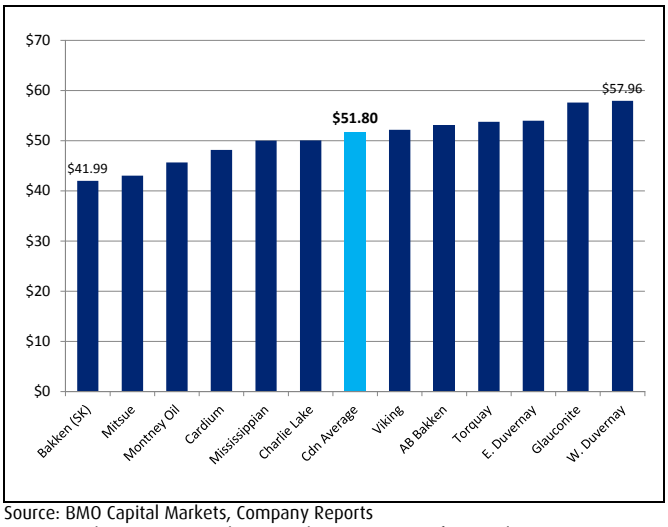
We estimate that "half cycle" supply costs for key tight oil plays average roughly $51/bbl Brent (range $45-60/bbl) based on our internal modeling of type curves, as shown in Exhibit 55. The Delaware and Midland Permian retain the lowest costs among U.S. plays, followed by the Eagle Ford and Niobrara. We estimate that average Canadian oil play breakevens are, on average, in line with competing U.S. plays at roughly $52/bbl, despite constrained natural gas prices. This is in part because of the impact of the lower Canadian dollar on US$ costs. Among Canadian plays, the Saskatchewan Bakken and Montney hold the lowest average supply costs ranging from $42/bbl to $45/bbl Brent (Exhibit 56).

Exhibit 55: U.S. Tight Oil Model Breakeven ($/Bbl, Brent)



Source: BMO Capital Markets, Company Reports
Notes: Breakevens converted to Brent-basis using BMO forecast long-term WTI-Brent spread; assumes $2.60/mmbtu Henry Hub price for associated gas

Exhibit 56: Canadian Oil Play Model Breakeven ($/Bbl, Brent)

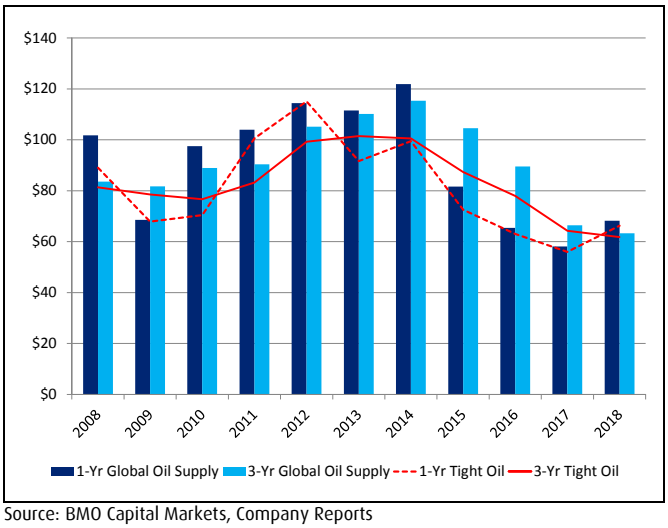


Source: BMO Capital Markets, Company Reports
Notes: Breakevens converted to Brent-basis using BMO forecast long-term WTI-Brent spread of $5.00; assumes $2.60/mmbtu Henry Hub gas and US$0.75/$C

While these low half-cycle cost estimates may suggest that oil prices are sustainable at much lower prices, our study which looks at the "all-in" full cycle costs reported by these producers continues to tell a slightly different the story. That is, the reported financial results of tight oil producers typically imply full-cycle costs that are meaningfully higher. As we illustrate in

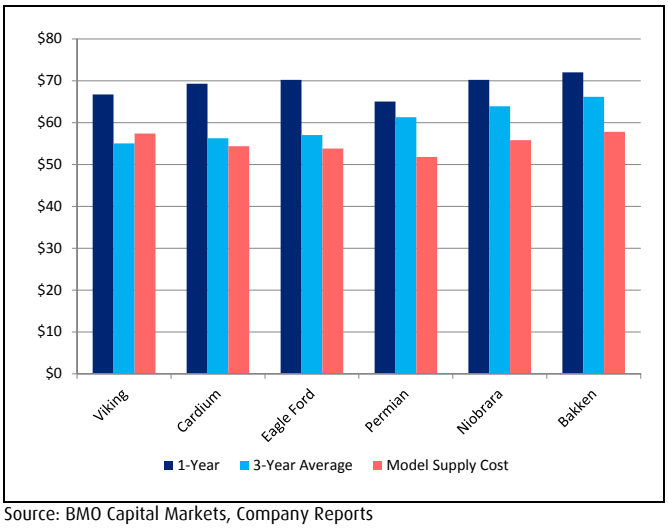
Exhibit 57, tight oil has maintained a three-year average cost discount of roughly $9/boe (~10%) since 2010. *However, this variance has tightened to just $2/bbl as a result of high-cost M&A activity as well as evidence of decreasing productivity by some operators.* Based on this year's study, tight oil supply costs in fact increased by more than the global oil average, rising 18% to average $66.30/boe, while three-year average costs improved 3% to $61.84/boe. The lowest average supply costs based on 2018 results remain in the Permian, although the best three-year average costs are reflected by smaller-scale Canadian oil plays and the Eagle Ford at roughly $55-57/boe (Exhibit 58).

Exhibit 57: Reported Tight Oil Supply Costs ($/Boe)



Source: BMO Capital Markets, Company Reports

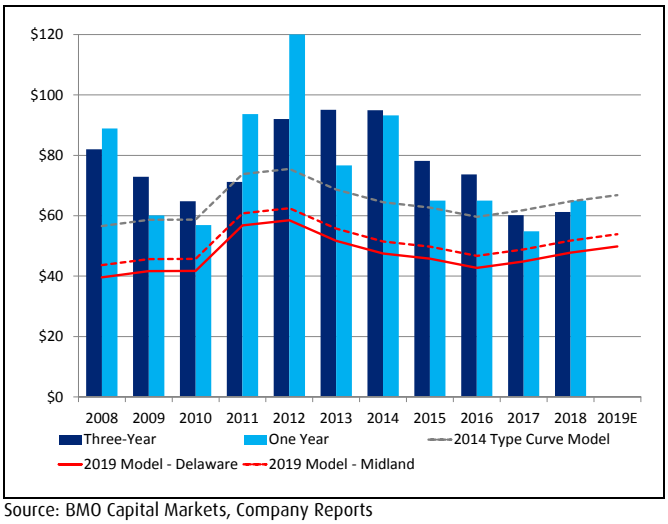
Exhibit 58: Reported Tight Oil Supply Cost vs. Model ($/Bbl)



Source: BMO Capital Markets, Company Reports

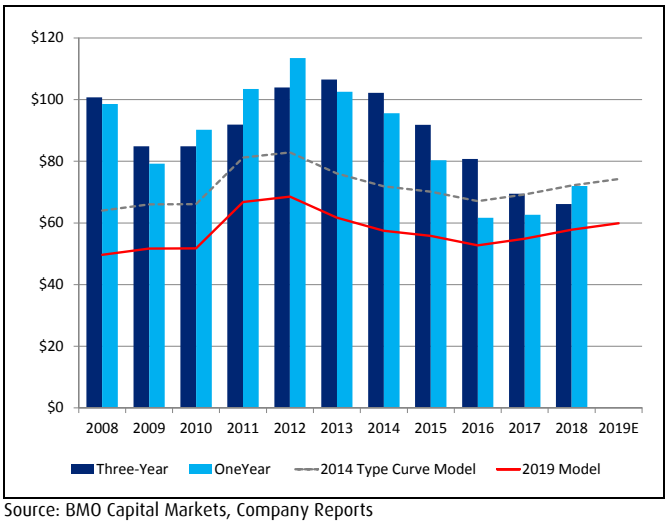
The Permian continues to dominate production growth, demonstrating its prolific nature. Average reported supply costs among Permian producers increased by 19% to $65.02/boe in 2018, and 2% on a three-year basis to $61.28/boe (Exhibit 59). Supply costs among Bakken producers increased by 15% in 2018 to $71.99/boe (Exhibit 60), while three-year average costs fell 5% to $66.15/boe but remain above the global average.

Exhibit 59: Permian Reported Supply Cost vs. Model ($/Bbl)



Source: BMO Capital Markets, Company Reports

Exhibit 60: Bakken Reported Supply Cost vs. Model ($/Bbl)

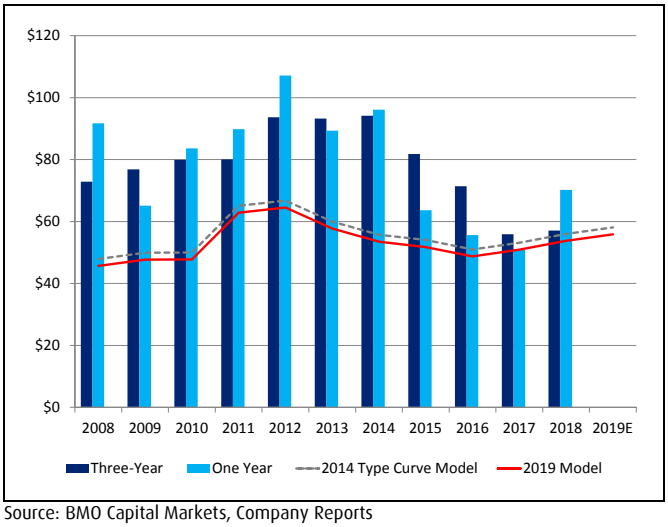


Source: BMO Capital Markets, Company Reports

Producers in the Eagle Ford collectively saw the largest increase in 2018 supply costs, increasing 37% to average $70.22/boe, while three-year average costs increased slightly to $57.04/boe but remain among the lowest in the group (Exhibit 61). Finally, producers in the

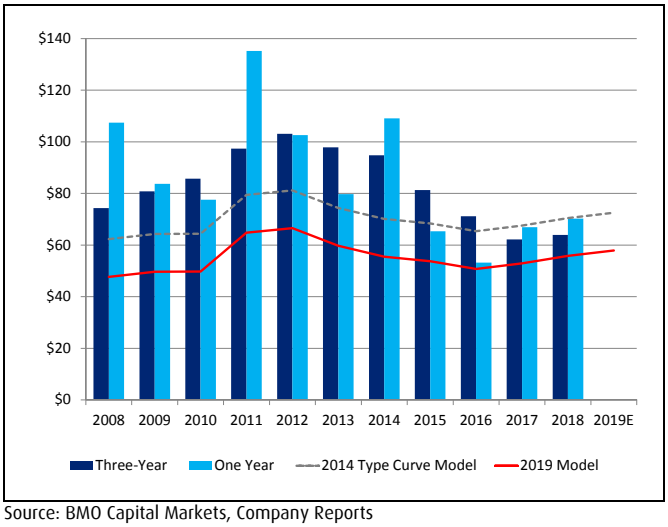
Niobrara on average saw supply costs increase a modest 5% to $70.21/boe or 3% on the three-year average of $63.91/boe or roughly in line with the global oil average (Exhibit 62).

Exhibit 61: Eagle Ford Reported Supply Cost vs. Model ($/Bbl)



Source: BMO Capital Markets, Company Reports

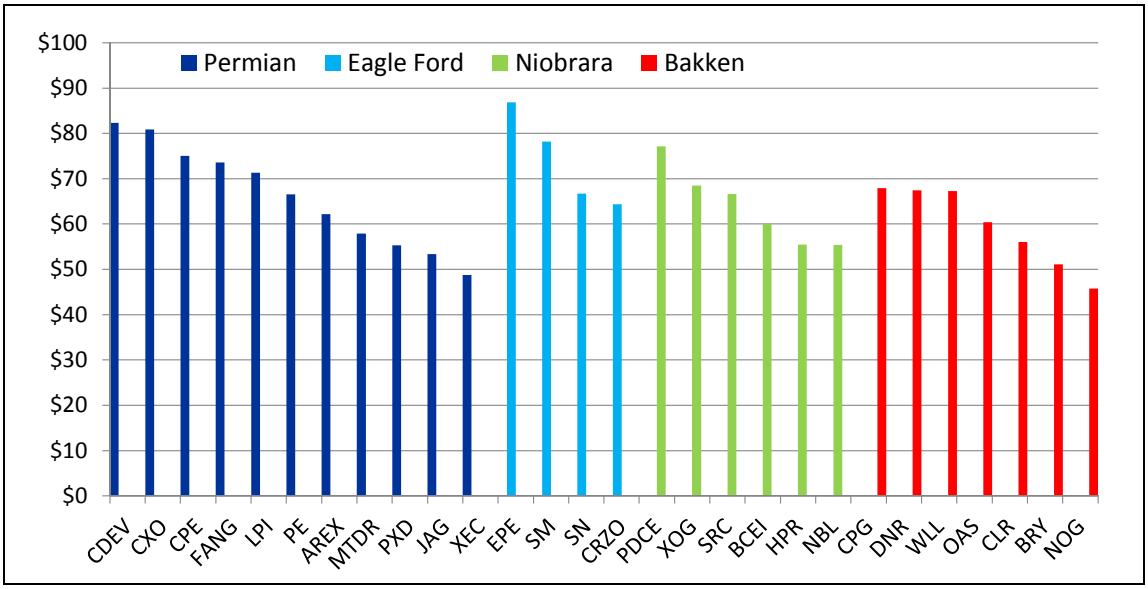
Exhibit 62: Niobrara Reported Supply Cost vs. Model ($/Bbl)



Source: BMO Capital Markets, Company Reports

We outline the relative supply cost performance of "pure play" U.S. tight oil producers (based on three-year average) in Exhibit 63. The lowest costs include Northern Oil and Berry Petroleum in the Bakken, Cimarex and Jagged Peak in the Permian, as well as Noble and HighPoint in the Niobrara. Because of our study's methodology, which captures all costs associated with the business including acquisitions, many Permian producers do not rank as well as one might expect. That said, if the cost of drill-bit related additions continue to impress, *the reported breakevens of select operators should improve in coming years as land consolidation slows.*

Exhibit 63: North America Tight Oil Producer Supply Cost Ranking ($/Bbl, Realized Ratio)

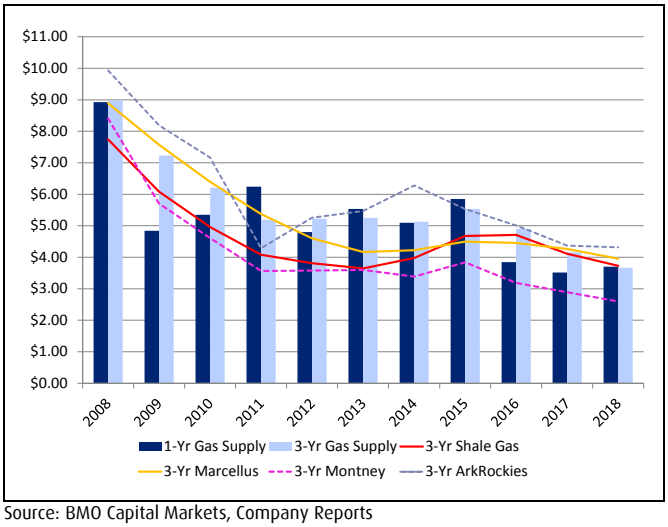


Source: BMO Capital Markets, Company Reports

North American Shale Gas

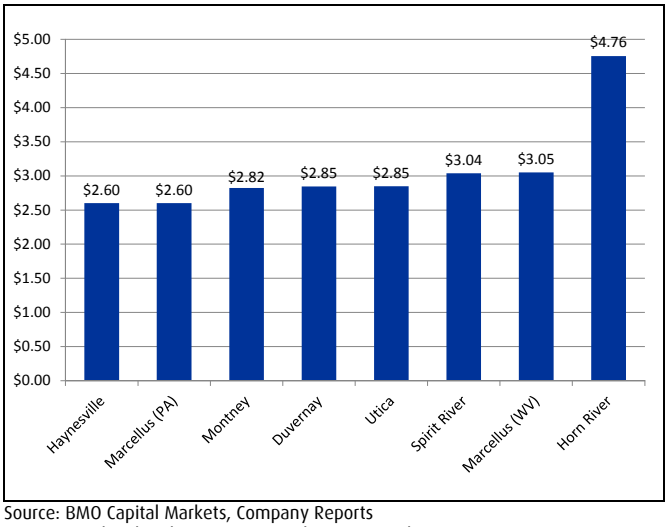
Fundamental cost support for gas prices in North America has been firmly set in the $3.50-4.00/Mcf range. As illustrated in Exhibit 64, three-year average gas supply costs in North America decreased 12% in 2018 to $3.67/Mcfe. Exhibit 65 lays out our BMO type curve model breakeven assumptions for select gas plays. The lowest costs are demonstrated in the Haynesville, Marcellus/Utica, and Canadian Montney, with breakevens in the $2.60-3.00/Mcf range.

Exhibit 64: North American Gas Supply Costs ($/Mcfe)



Source: BMO Capital Markets, Company Reports

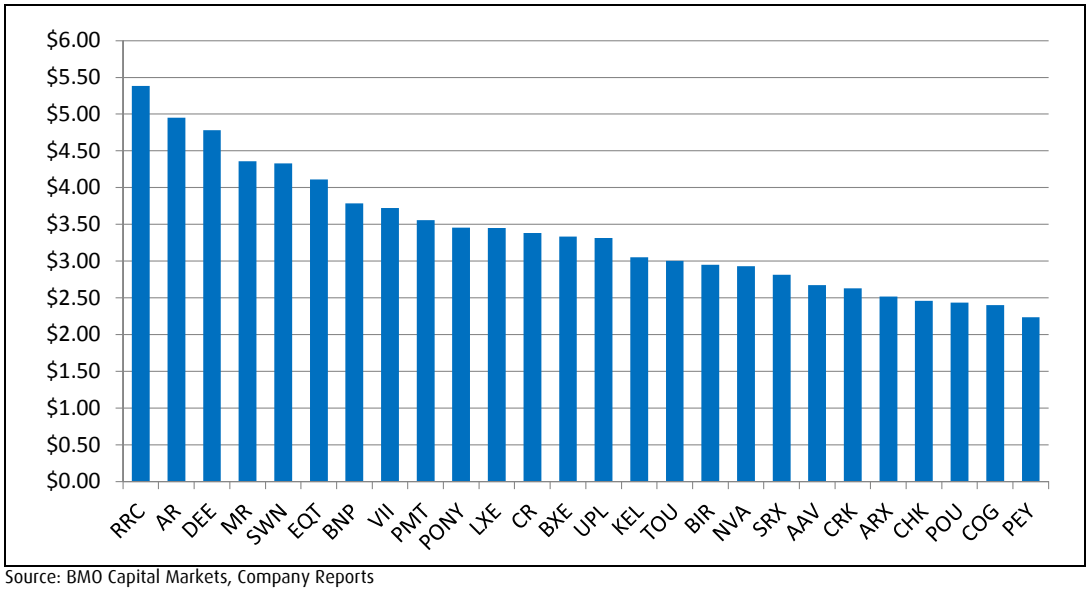
Exhibit 65: Type Curve Model Breakeven ($/Mcf, Henry Hub)



Source: BMO Capital Markets, Company Reports
Notes: Canadian breakevens converted to Henry-Hub using BMO 2019E AECO Basis

The lowest cost North American natural gas producers in our study based on three-year average costs include Peyto, Paramount, and Arc Resources among Canadian companies and Cabot, Chesapeake, and Comstock among U.S. operators (Exhibit 66).

Exhibit 66: North American Gas Producer Supply Costs ($/Mcfe)



Source: BMO Capital Markets, Company Reports

Oil Sands Supply Costs – Competitive and Friendly

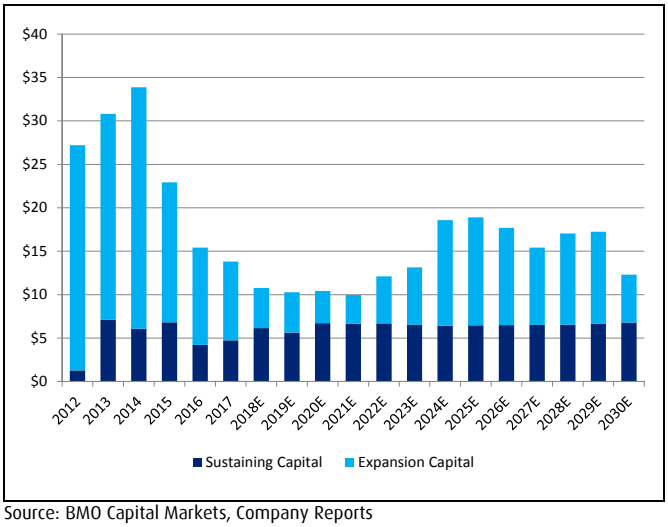
Our work continues to show that oil sands producers are competitive on full cycle supply costs...

We believe there continues to be a promising future for oil sands, and many developments are competitive with tight oil particularly when viewed in the context of their lower full-cycle reinvestment risks and diversification benefits. We estimate that *existing* oil sands production generates positive cash flow well below $50/bbl and that these projects boast go-forward breakevens of just $39/bbl for in situ and $45/bbl for mining. We also believe that many new oil sands investments can generate returns at oil prices in the range of $55-65/bbl.

...Plus, oil sands companies are leading ESG efforts given a heavy focus on R&D, which could ultimately drive costs even lower

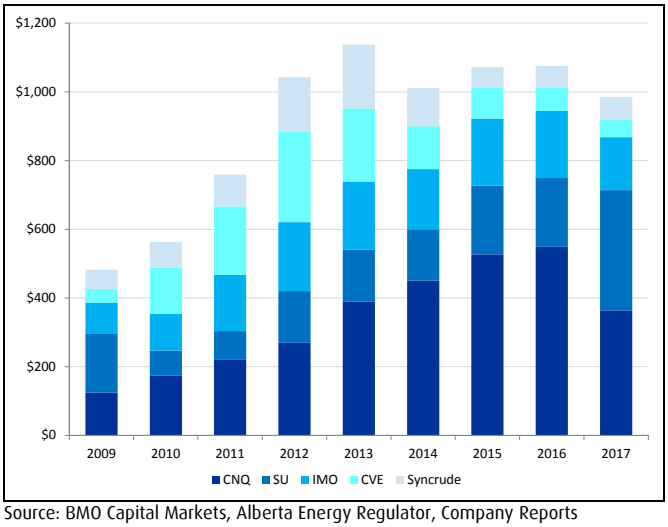
2016/2017 marked the end of the last wave of major oil sands expansion spending. Capital expenditures were merely C$10 billion in 2018, representing a 68% decrease from 2014 as developers focus on sustaining activities. Spending is likely to remain tempered through at least 2023 before developers commit to any material new growth investment. That said, past investment continues to have a prolonged impact on production growth given ongoing ramp-up and debottlenecking of recent expansion projects. At the same time, oil sands producers are reducing costs considerably due largely to the application of new technology and innovations that have been led by sustainability initiatives and industry-leading R&D investment (Exhibit 67). As we highlighted in a recent in-depth report on ESG in the oil sands (see report), we believe this dynamic between renewed capital efficiency and production growth is important, as it is driving record levels of free cash flow for the sector, at the same time extending its ability to further advance innovation and drive down costs.

Exhibit 67: Oil Sands Capital Spending Outlook ($Billion)



Source: BMO Capital Markets, Company Reports

Exhibit 68: Oil Sands R&D Spending (C$ Millions)



Source: BMO Capital Markets, Alberta Energy Regulator, Company Reports

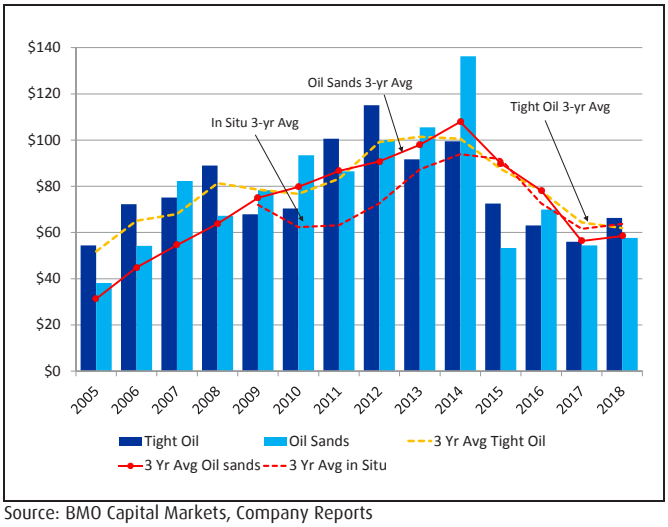
Improving and Competitive Costs

Oil sands assets generate free cash flow well below $50/bbl WTI, given relatively low sustaining capital requirements

Our work continues to reinforce a view that oil sands are economically competitive taking into consideration all-in costs incurred. In Exhibit 69 we show that the three-year average breakeven for oil sands companies in our study was just $58.43/bbl in 2018, below the average supply cost of $63.68/bbl implied by tight oil producers. Single-year costs were $57.65/bbl, meaningfully below the tight oil average of $66.30/bbl.

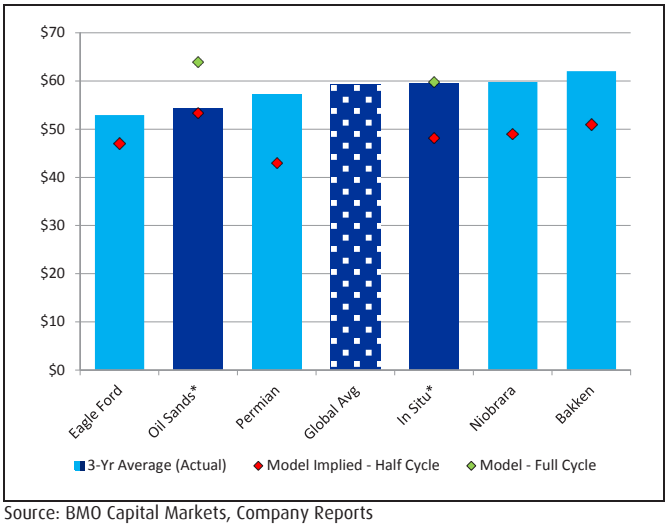
We further demonstrate in Exhibit 70 that actual reported costs for oil sands producers are more consistent with model breakevens, largely given the "half cycle" nature of typical tight oil well economics, which exclude many important full cycle expenses such as land, infrastructure, and overhead.

Exhibit 69: Breakeven – Reported Costs (US$/bbl, Brent)



Source: BMO Capital Markets, Company Reports

Exhibit 70: Three-Year Reported Cost vs Model (US$/boe, WTI)

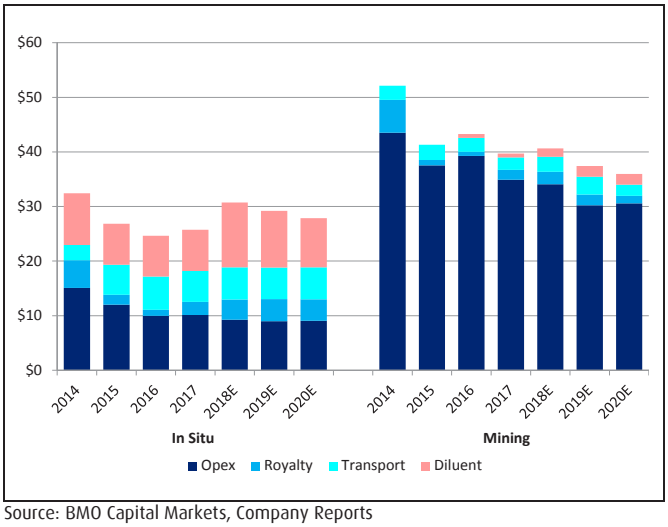


Source: BMO Capital Markets, Company Reports

Oil sands producers continue to demonstrate competitive costs, with go-forward breakevens of just $39-45/bbl and full-cycle costs of $55-65/bbl for select new projects

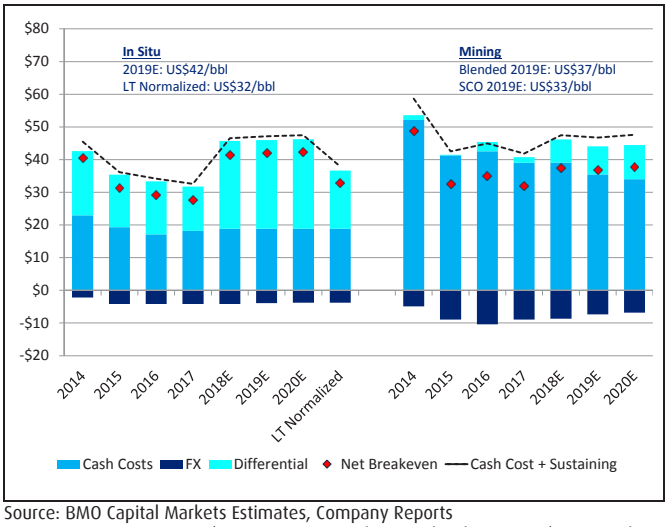
Oil sands cash costs have declined materially with oil prices since 2014. We estimate that in situ operating costs have decreased 40%, while costs for mining operations have decreased 30% (Exhibit 71). Taking all factors into consideration, we expect total in situ cash costs to average C$28/bbl by 2020, or 14% below 2014, and mining costs to decrease to ~$36/bbl, or 31% lower. Converting these cash costs into WTI-equivalent cash breakevens, we estimate that in situ projects require a WTI price of $32/bbl long-term to generate positive cash flow (under normalized light-heavy oil market conditions), and mining operations require $37/bbl ($30/bbl for SCO). With relatively minimal sustaining capital of $5/bbl for in situ and $10/bbl for mining, most *existing projects generate free cash flow at oil prices below $50/bbl.*

Exhibit 71: Cash Cost Trend 2014-2020E (C$/bbl)



Source: BMO Capital Markets, Company Reports

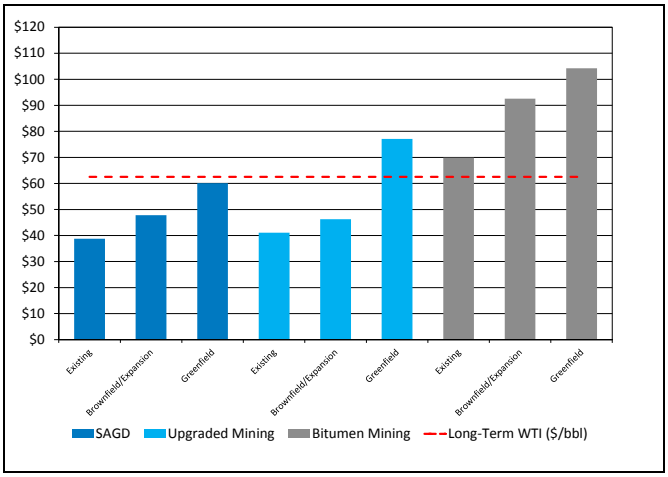
Exhibit 72: Oil Sands Cash Breakevens (US$/bbl, WTI)



Source: BMO Capital Markets Estimates, Company Reports
Notes: 2019 assumes a US$27 WTI-WCS spread; Normalized assumes $17 spread

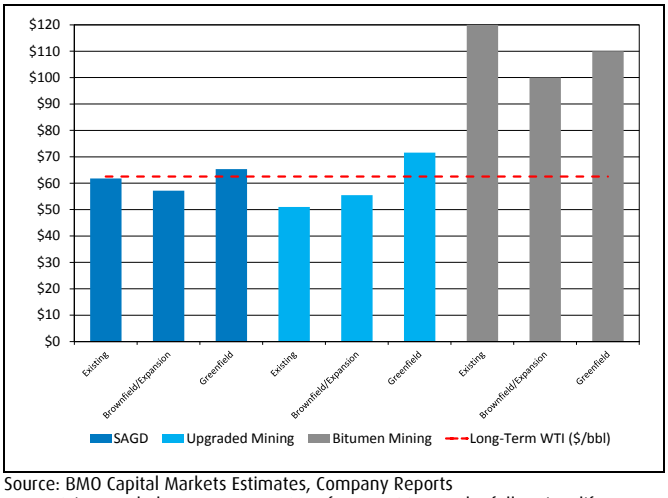
Our model estimates back up this assumption, as *go-forward breakeven prices (excluding sunk capital) are only $39/bbl for in situ and $45/bbl for mining, as shown in Exhibit 73.* In Exhibit 74 we outline weighted-average full-cycle breakeven for oil sands projects by type. We reiterate that there are notable differences in economics between greenfield projects and brownfield expansions. We estimate full-cycle breakeven on expansions average $57/bbl for SAGD, $55/bbl for upgraded mining, and over $100/bbl for bitumen mining. Some new greenfield SAGD remain economically viable with average full cycle breakevens of $65/bbl.

Exhibit 73: "Go-Forward" Breakeven by Type (US$/bbl, WTI)



Source: BMO Capital Markets Estimates, Company Reports
Note: Price needed 2017-forward to generate an NPV of zero, excl. sunk capital

Exhibit 74: Full-Cycle Breakeven by Project Type (US$/Bbl)



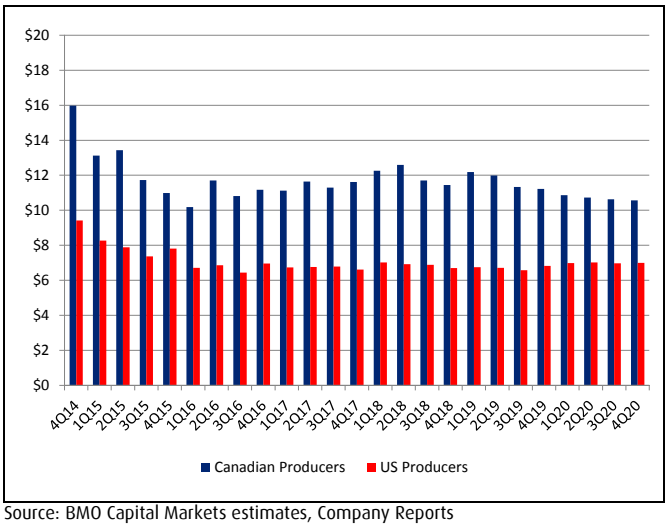
Source: BMO Capital Markets Estimates, Company Reports
Notes: Price needed to generate a 10% after-tax IRR over the full project life

Supply Cost Outlook: Stability at Last

Industry operating costs are expected to remain relatively stable through 2021, based on our coverage

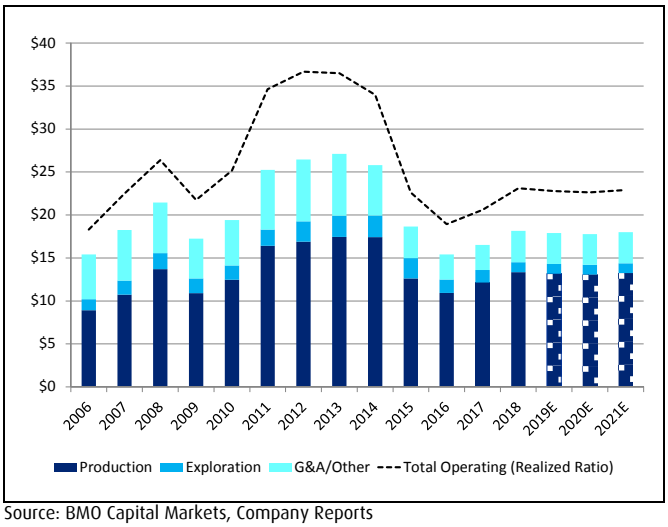
In total, global industry costs have improved approximately 50% from the peak in 2014, and remain below the previous downturn of 2009 despite modest re-inflation in 2018. Cyclical cost reductions reached a floor in 2017 and are now reversing course, albeit not in a meaningful way. With the dust settled, we anticipate more normalized spending and reserve additions will be established in years ahead. Based on our team's coverage, we forecast unit operating costs to in fact improve by another 1-2% per year through 2020, before seeing further inflation of 1-2% in subsequent years (Exhibit 75). Applied to our Cost Study, we assume total unit operating expenses hold flat around $22-23/boe through 2021 (Exhibit 76).

Exhibit 75: BMO Coverage OPEX Trend ($/Boe, 6:1 Gas:Oil)



Source: BMO Capital Markets estimates, Company Reports

Exhibit 76: Industry Operating Costs Forecast (US$/Boe)



Source: BMO Capital Markets, Company Reports

After recovering 2% in 2018, global capital spend is expected to grow only 5% by 2021

Floor Value Reserve Costs

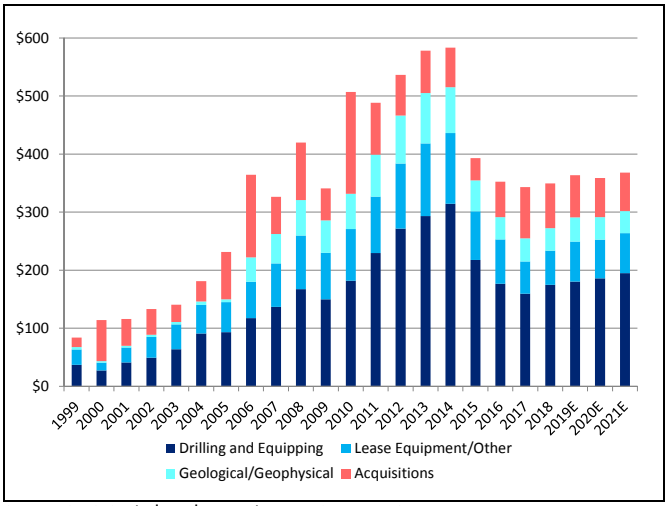
As mentioned, 2017 was the cycle floor on reserve replacement costs which means that cyclical efficiency gains have likely peaked and we should expect some stabilization in both spending and reserve additions. While operators have indeed improved the efficiency of

Considering normalized reserve replacement, we forecast global F&D costs to increase 7% in 2019 and 15% by 2021 to ~$15/boe – well below historic norms

adding new reserves with less capital, further gains may be offset by anticipated increases in service costs as industry activity picks up. The recent improvement in reserve replacement performance likely reflects the ramp-up in half-cycle development activity. Our expectation is that reserve replacement performance may return to more normalized levels in coming years. Moreover, we still hold the belief that producers will need to venture further and further out the risk curve in order to sustain production levels longer term, which means that capital cost pressure remains to the upside longer term.

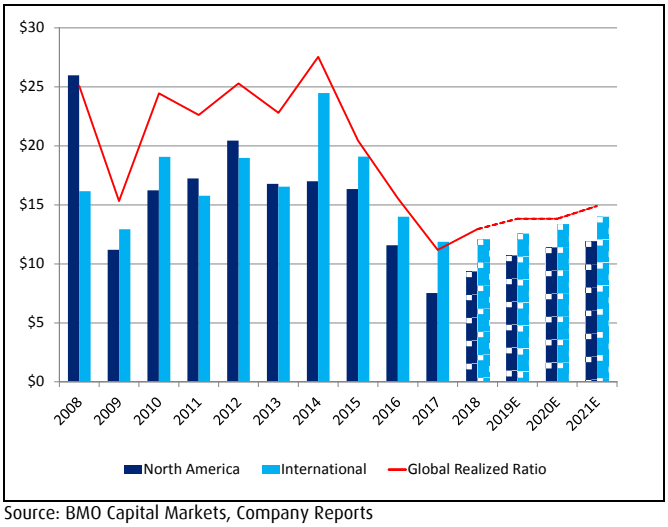
We estimate that global capital spending has fallen by as much as $300 billion or 45% since 2014, after recovering by just 2% in 2018. Our survey of capital spending guidance suggests that global development spending may expand by another 4% in 2019 and a cumulative 5% through 2021 (Exhibit 77). Based on this, we forecast global reserve replacement costs to increase by another 7% in 2019 to $13.83/boe, and a cumulative 15% to just under $15/boe by 2021. *We reiterate that this suggests global F&D costs remain well below the historical average (Exhibit 78).*

Exhibit 77: Industry Capital Spending Outlook (US$ Billion)



Source: BMO Capital Markets estimates, Company Reports

Exhibit 78: Industry F&D Cost Forecast by Region ($/Boe)



Source: BMO Capital Markets, Company Reports

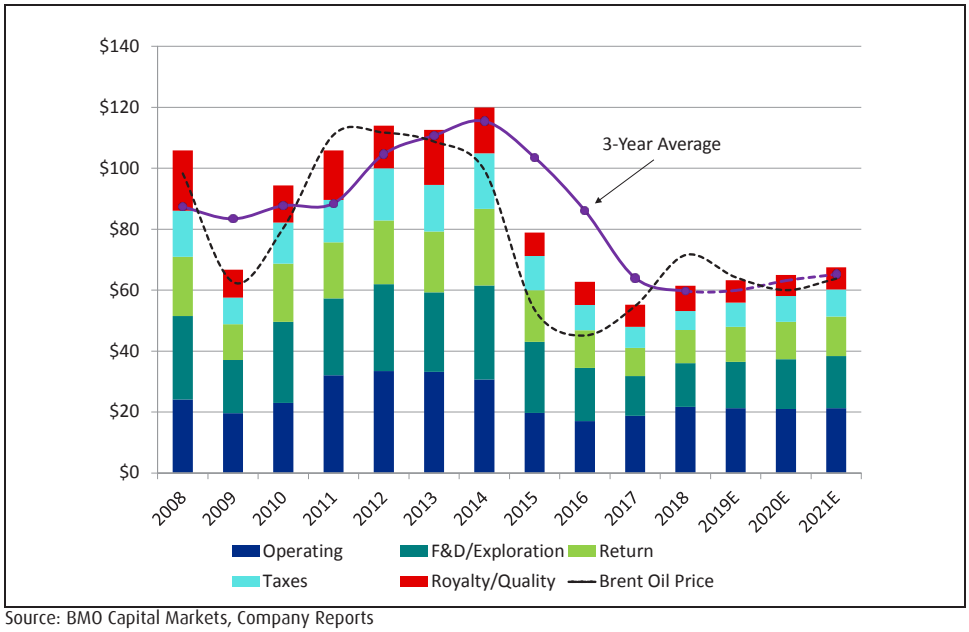
Our outlook for stability in both operating and capital costs points to solid cost structure support for oil prices in the $65/bbl range

Cost Structure Support for Brent Oil Prices ~$65/boe

Based on our outlook for relative stability in both operating and capital costs ahead, we believe that there is solid global cost structure support for oil prices in the $60-65/bbl range. We forecast the global supply cost to increase 3% to $63/boe in 2019 and expand toward $67/boe by 2021. Three-year average costs are implied at $65.18/boe by 2021.

We forecast global supply costs to remain well below historical norms and previous market lows, given a paradigm shift in cost structure

Exhibit 79: Global Brent Supply Cost Outlook (US$/Boe, Realized Oil/Gas Ratio)

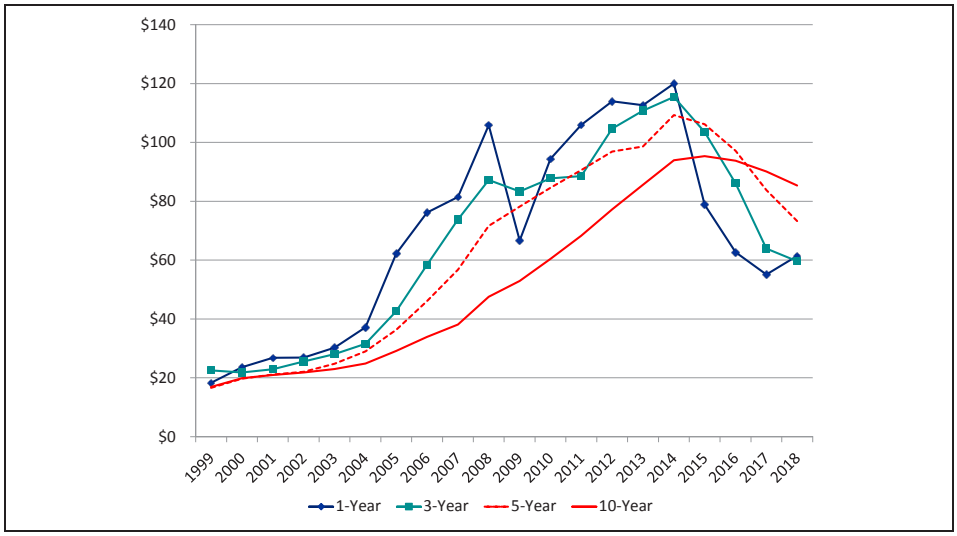


Source: BMO Capital Markets, Company Reports

Resource Scarcity Means Long-term Costs Risked to the Upside

Our outlook for relative stability in costs (and oil prices) over the next several years is not to suggest we never see significant inflation again. As we discussed earlier, we believe that the long-term risk for costs is still to the upside given resource scarcity. In our view the world's supply of oil is finite while steepening global base production declines and rising demand level place significant pressure on producers to develop new major projects. Meanwhile, exploration discovery of meaningful new resource is on in fact in decline and the efficiency gains seen of U.S. shale oil are unique and not necessarily transferrable to the majority of the global supply base. So even though long-term cost trends (5- and 10-year averages) have declined modestly as a result of the latest downturn, we expect that the longer-term inflation trend will ultimately resume over time (Exhibit 80).

Exhibit 80: Worldwide Supply Cost ($/Boe, Realized Ratio)



Source: BMO Capital Markets, Company Reports

Returns Recovering – But Is It Good Enough?

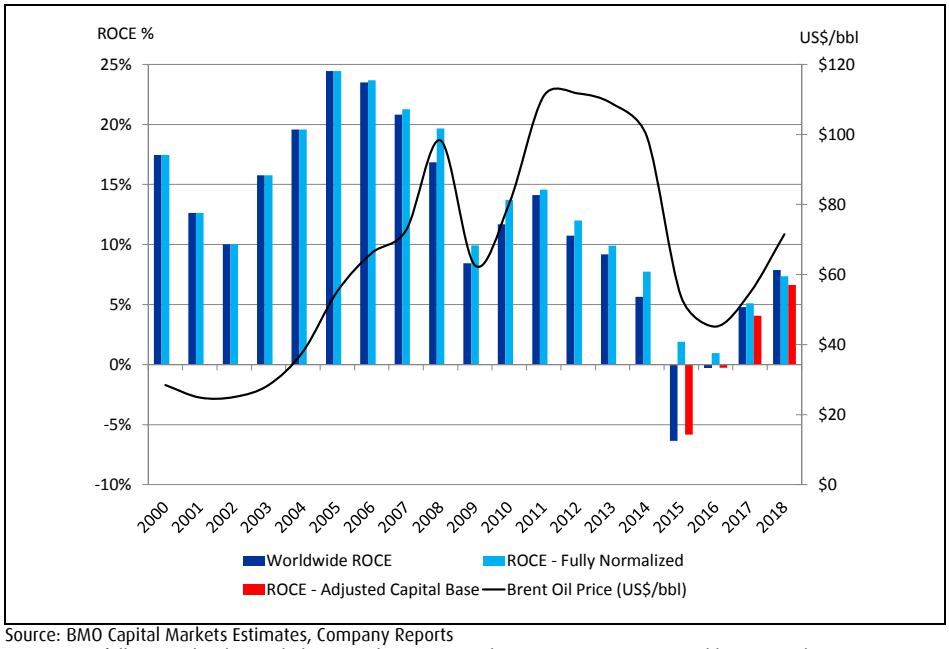
As we have highlighted in past versions of our study, very few companies have generated positive stock market returns over the last decade, mirroring generally poor underlying financial performance. Fortunately, there are signs of sustainable structural improvement in cost structure in the latest cycle downturn, which has been aided by technology, necessary efficiency improvements, and investment cutbacks. As evidenced by our evaluation of 2018 results, these factors are beginning to have a notable compounding effect on financial return measures as the oil price environment improves. That said, we have seen this before. Our work over the long history of our cost study has highlighted that there are few select companies that effectively manage cost structure and returns well through the industry ups and downs—as a result, we believe that investors must still be highly selective with a focus on cost structure and returns track record as this tends to support superior investment returns over time.

Back to 2014 ...

Illustrated in Exhibit 81, worldwide average ROCE measures continued to recover in 2018 from all-time lows in 2015-2016, on the back of both higher average oil prices and noted improvements in costs. Companies in our study reported average unadjusted *returns* on capital of 7.9% compared to 4.8% in 2017. That said, aggregate capital writedowns have exceeded $470 billion since 2014, which artificially inflates recent return measures and makes the comparison to prior years less meaningful. As we illustrate, we estimate that 2018 returns are closer to 6.6%, taking into account cumulative PP&E impairments since 2014. *Adjusting for impairment impacts to earnings and the capital base, fully normalized ROCE averaged 7.3% in 2018, just shy of 7.7% achieved in 2014.* This all said, industry returns still sit well below the benchmark cost of capital. So the *question remains: can the industry reclaim adequate returns in years ahead in order to regain investor interest in the sector?*

In 2018, Industry ROCE recovered back to 2014 levels ... but remains below the cost of capital and unlikely to improve further near term ...

Exhibit 81: Return on Capital Employed vs. Brent Oil Price

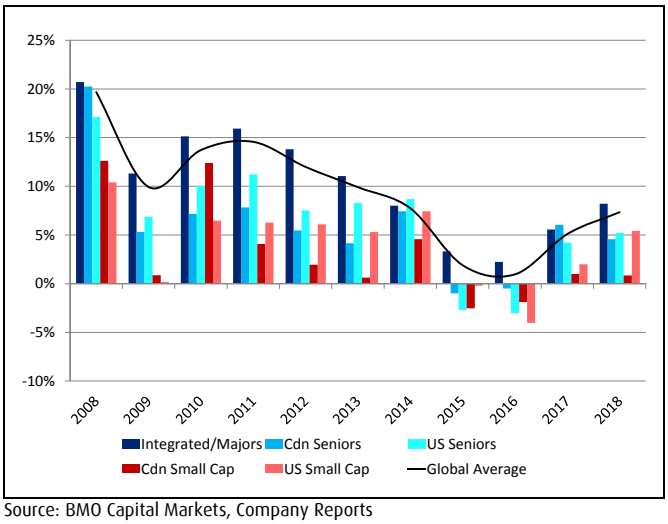


Source: BMO Capital Markets Estimates, Company Reports
Notes: ROCE fully normalized to exclude unusual impairment charges against earnings and base capital.

Canadian and U.S. Senior Producers have demonstrated the largest improvement in ROCE versus 2016, averaging 7%, while smaller producers continue to struggle with returns of just 1-3%. Despite encouraging improvements in 2018, the damage caused by the latest downturn is

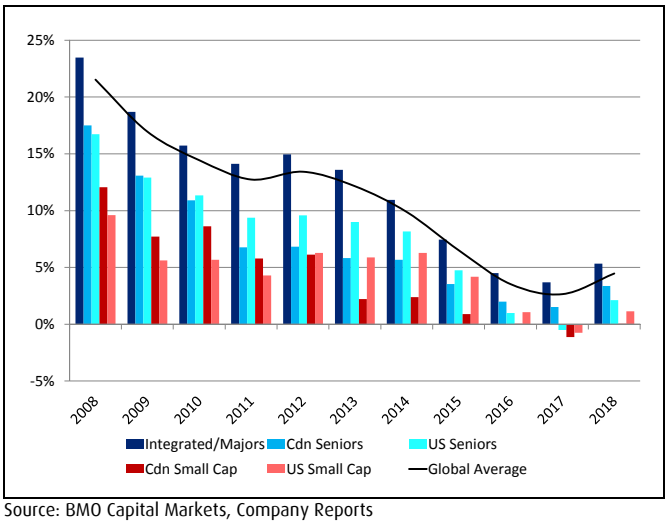
still evident in longer-term trends, as three-year ROCE remains well below 2014 and the average cost of capital, driven mostly by poor returns to E&Ps. The highest returning group, the Global Integrateds, have three-year average returns of just over 5%.

Exhibit 82: Fully Normalized ROCE by Peer Group



Source: BMO Capital Markets, Company Reports

Exhibit 83: Three-Year Normalized ROCE



Source: BMO Capital Markets, Company Reports

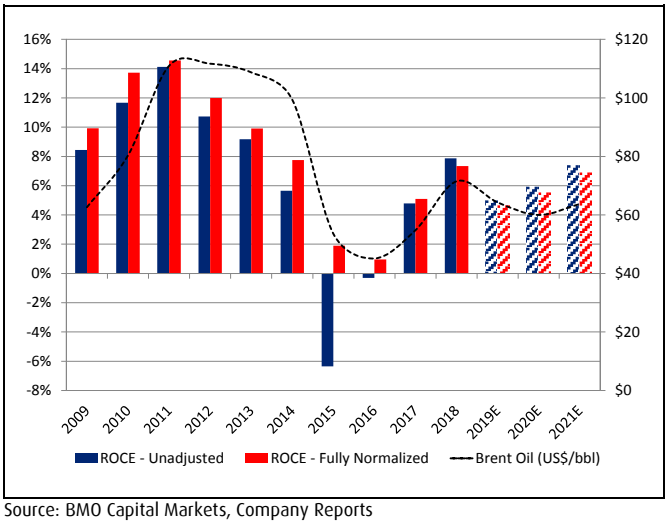
Returns Outlook Better, Not Great

Industry average ROCE remains stable with oil prices though 2021 ...

... Implying an ongoing need to isolate the few exceptions from the norm

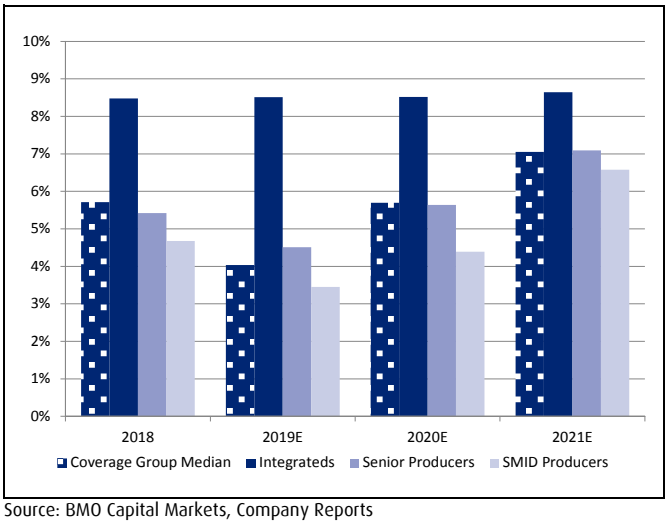
Although we do anticipate returns could improve in a rising commodity price environment, our near-term outlook is for relatively stable oil prices given the responsive supply of U.S. shale and so-far resilient non-OPEC production. Based on our team's coverage, we expect industry wide returns could in fact retreat back toward 5.0% (4.2% on a normalized basis) in 2019, assuming lower average Brent oil prices of ~$64/bbl ($72/bbl in 2018). Returns may subsequently recover to just below 7% by 2021, adjusting for base capital write-offs (Exhibit 84). No peer groups on average are expected to generate returns above the 10% cost of capital assumption by 2021 (Exhibit 85). This reinforces the ongoing need to be highly vigilant, with a discerning eye for those companies within the industry that offer superior costs and return track records.

Exhibit 84: Adjusted Industry ROCE Forecast (%)



Source: BMO Capital Markets, Company Reports

Exhibit 85: Forecast Median ROCE by Peer Group (%)



Source: BMO Capital Markets, Company Reports

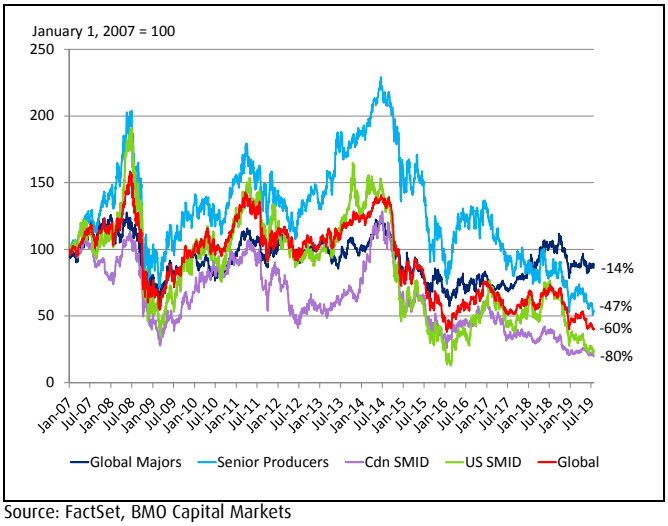
Market Sentiment (and Valuation) Drags Lower on Returns Reality

Commodity price volatility has no doubt fuelled periods of share price strength for oil and gas equities over the last two energy cycles. But the reality is that the vast majority of oil and gas equities have slowly languished over this time frame as a function of the lacklustre financial returns highlighted above. Investors have since grown weary, causing broad sector sentiment and valuation levels to retreat, arguably even decoupling from fundamentals. The average indexed performance of surviving oil and gas producers has gained a mere 3% in aggregate since 2007, although because the average is greatly skewed by the strong performance of a select few, we show in Exhibit 86 that *the stocks of "typical" oil and gas producers (based on median performance) have lost 60% of their value since 2007*.

The Norm, Not the Exception – Seeing Value in the Select Few

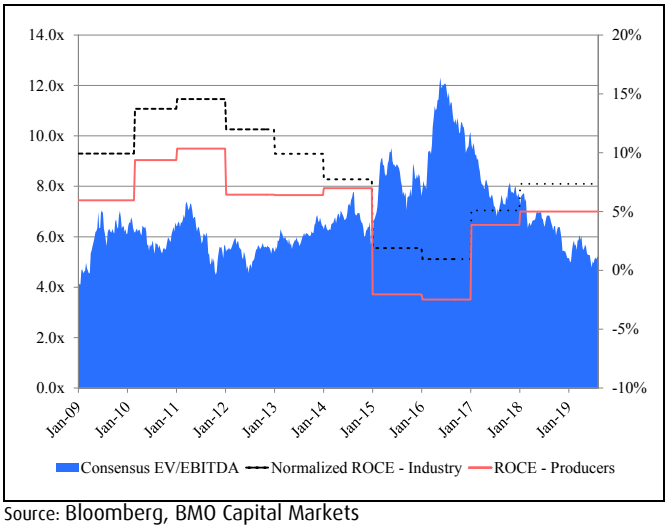
Bottom line, the oil and gas sector has been very unkind to investors, and we believe closely tied to an all-too-common corporate focus on growth as opposed to returns. As a result of this—and despite modest improvements in ROCE recently—the sector's valuation has become impaired. On average, the average valuation of large cap producers is currently tracing near all-time lows at just 5.2x forward EV/EBITDA, compared to 7.8x in 2017 (Exhibit 87).

Exhibit 86: 10-Year Median Share Price Performance



Source: FactSet, BMO Capital Markets

Exhibit 87: Forward EV/EBITDA vs. ROCE (Large Caps)

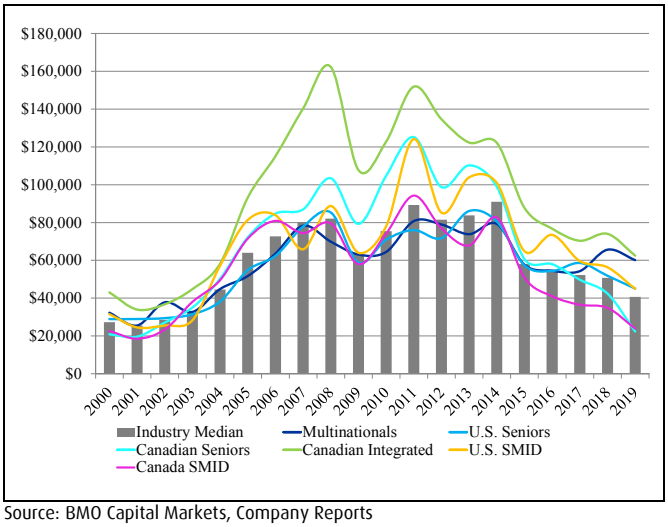


Source: Bloomberg, BMO Capital Markets

A similar trend can be seen in enterprise value (EV) metrics on production and reserves, as presented in Exhibits 88 and 89, respectively. Median EV-to-production values for the group have recently fallen to pre-2004 levels at roughly $40,000/boe/d, compared to more than $90,000 in 2014. In similar vein, EV-to-reserves metrics have fallen toward $9.00/boe from prior levels around $18/boe. Canadian companies generally have seen the steepest retraction on this basis, partly reflecting product discounts that have resulted from market access constraints.

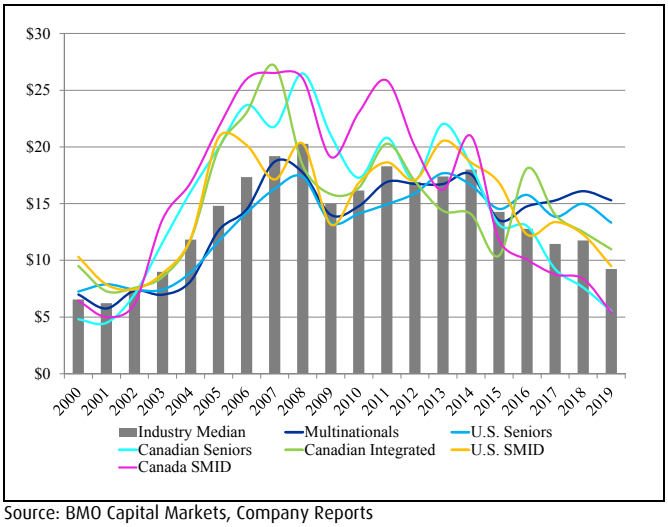
The takeaways from these trends are twofold. First and most obvious is that navigating opportunity in the oil and gas sector requires that investors be extremely diligent and selective. Again, we believe that the key to sustainable investment success in this sector is in identifying the companies that take the full-cycle cost management responsibility seriously. Second, ***the broad valuation discount that has inflicted the sector means that the "select few" may offer compelling value within the space***.

Exhibit 88: Median Production Valuation ($EV/boe/d, net)



Source: BMO Capital Markets, Company Reports

Exhibit 89: Median Proved Reserve Valuation ($EV/boe, net)

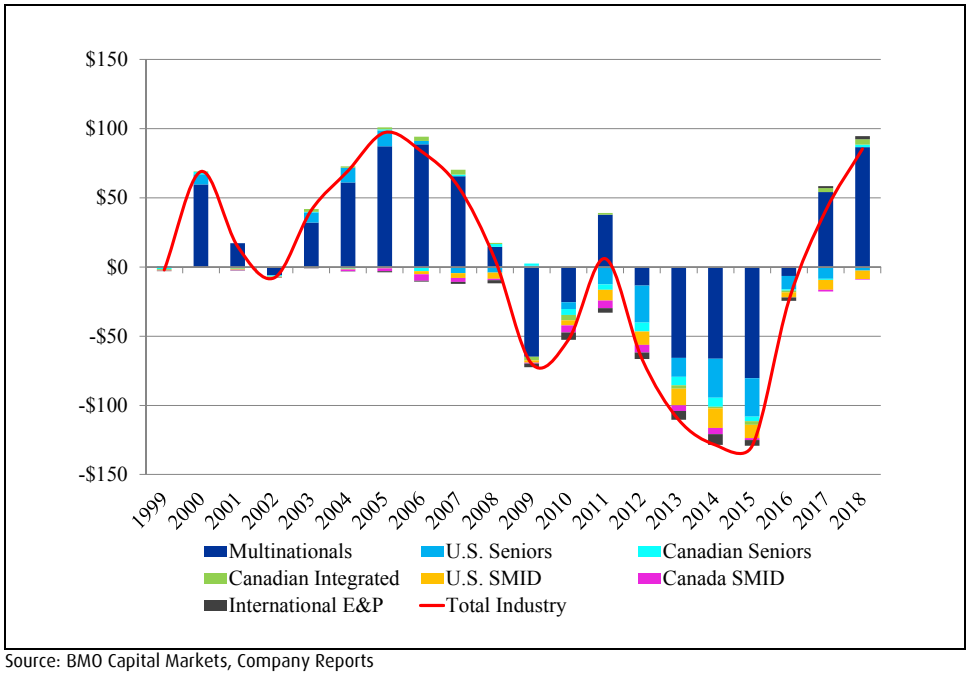


Source: BMO Capital Markets, Company Reports

An Industry in Harvest Mode

In response to lower oil prices (and pressure from shareholders), many companies have reduced spending on new projects and instead focused on capital efficiency and harvesting cash flow. As shown in Exhibit 90, industry free cash flow (excluding acquisition/disposition capital) increased to nearly $100 billion in 2018—roughly in line with peak levels back in 2005. The global Majors contribute the bulk of it in aggregate, but we highlight that Canadian large cap producers as well as select international E&Ps have also generated rising levels of free cash since 2016.

Exhibit 90: Industry Free Cash Flow ($ Billion)

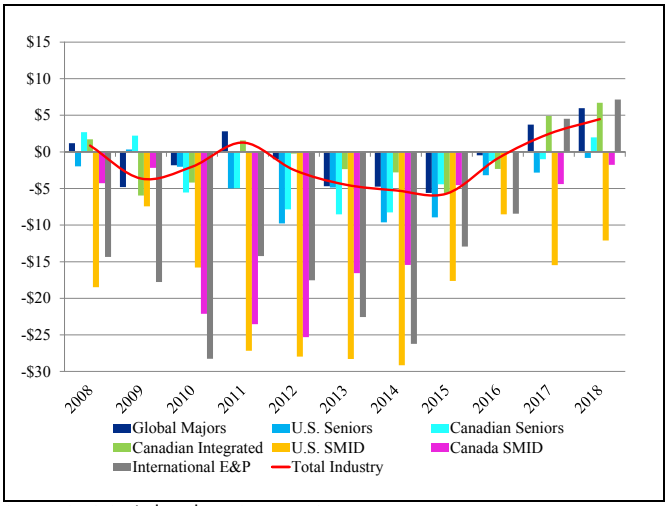


Source: BMO Capital Markets, Company Reports

The relative magnitude of this FCF trend is shown in Exhibit 91 on a unit ($/boe) basis, further demonstrating the cash generating potential, particularly of the Canadian Integrateds, International E&Ps, and Majors. Other E&P peer groups have also managed to limit spending more closely to within cash flow compared to any year since 2008. As shown in Exhibit 92,

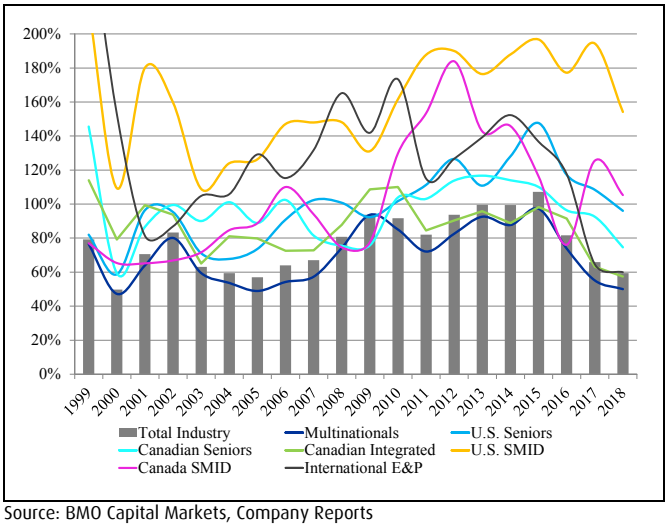
global capital spend as a percentage of available operating cash flow was below 60% in 2018, and while this is heavily influenced by the Majors and Integrateds, we also highlight notable decreases for independent producers with Senior Producers and Canadian SMIDs generally spending within cash flow (please refer to Exhibits 114-117 in the company ranking section of our report for a relative ranking of companies by positive FCF growth since 2015).

Exhibit 91: FCF/boe Trend (US$/boe)



Source: BMO Capital Markets, Company Reports

Exhibit 92: Capex as % Operating Cash Flow



Source: BMO Capital Markets, Company Reports

We provide detail behind the industry's buildup in FCF in Exhibit 93.

Exhibit 93: Cost Study Company Free Cash Flow Details (US$Billion)

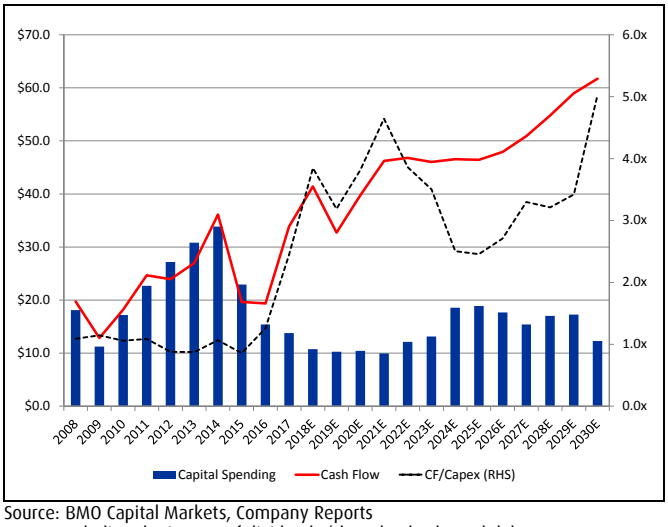
Global Industry (Cost Study)	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Cash Flow	116.7	198.6	184.7	178.3	235.8	303.9	396.5	450.1	457.8	520.6	390.6	445.6	589.5	572.6	567.8	530.5	358.5	286.0	381.1	483.7
Capital Spending	(92.5)	(99.1)	(131.5)	(148.0)	(149.6)	(181.2)	(227.3)	(287.1)	(316.9)	(421.7)	(367.9)	(416.6)	(495.2)	(548.0)	(580.2)	(551.1)	(408.0)	(249.0)	(268.8)	(305.6)
Available Free Cash	24.2	99.5	53.2	30.3	86.2	122.7	169.2	163.0	140.9	99.0	22.7	29.0	94.3	24.6	(12.4)	(20.5)	(49.6)	36.9	112.3	178.2
Dividends	(26.4)	(30.5)	(38.5)	(38.1)	(45.2)	(53.2)	(72.1)	(79.4)	(82.7)	(93.5)	(92.7)	(81.5)	(88.3)	(91.1)	(98.1)	(108.1)	(79.6)	(61.4)	(71.6)	(92.9)
Industry Free Cash Flow	**($2.2)**	**$69.0**	**$14.8**	**($7.7)**	**$41.0**	**$69.4**	**$97.2**	**$83.6**	**$58.1**	**$5.4**	**($70.0)**	**($52.5)**	**$6.0**	**($66.4)**	**($110.5)**	**($128.7)**	**($129.2)**	**($24.5)**	**$40.7**	**$85.3**
Canadian Seniors																				
Operating Cash Flow	2.0	4.5	6.0	7.1	11.2	13.3	20.1	21.0	25.7	32.1	20.9	20.2	23.3	21.5	18.4	21.6	10.0	7.5	11.9	14.5
Capital Spending	(3.0)	(2.7)	(5.2)	(7.0)	(10.1)	(13.4)	(17.8)	(21.6)	(21.0)	(24.2)	(15.8)	(21.0)	(24.0)	(24.4)	(21.5)	(24.6)	(11.0)	(7.2)	(11.0)	(10.8)
Dividends	(0.1)	(0.2)	(1.3)	(0.5)	(0.7)	(1.1)	(1.4)	(2.5)	(3.4)	(5.7)	(3.3)	(3.5)	(3.2)	(3.3)	(3.1)	(3.5)	(2.2)	(1.2)	(1.7)	(2.0)
Free Cash Flow	**($1.1)**	**$1.6**	**($0.5)**	**($0.5)**	**$0.4**	**($1.2)**	**$0.8**	**($3.0)**	**$1.3**	**$2.2**	**$1.8**	**($4.3)**	**($3.9)**	**($6.3)**	**($6.2)**	**($6.5)**	**($3.2)**	**($0.9)**	**($0.8)**	**$1.7**
Canadian Integrated Oils																				
Operating Cash Flow	2.6	4.9	5.2	5.6	8.5	10.0	13.5	16.8	19.1	23.5	9.1	13.9	22.0	22.8	21.3	20.4	11.4	8.5	14.0	15.9
Capital Spending	(3.0)	(3.9)	(5.1)	(5.3)	(5.5)	(8.1)	(10.7)	(12.2)	(13.9)	(20.6)	(9.9)	(15.3)	(18.6)	(20.6)	(20.4)	(18.2)	(11.2)	(7.8)	(8.8)	(9.1)
Dividends	(0.5)	(0.5)	(0.6)	(0.6)	(0.9)	(1.0)	(1.3)	(1.4)	(1.7)	(2.2)	(1.7)	(2.5)	(2.2)	(2.4)	(3.3)	(3.5)	(3.0)	(1.9)	(2.2)	(2.8)
Free Cash Flow	**($0.9)**	**$0.5**	**($0.6)**	**($0.3)**	**$2.0**	**$0.9**	**$1.4**	**$3.2**	**$3.5**	**$0.7**	**($2.5)**	**($3.9)**	**$1.2**	**($0.2)**	**($2.4)**	**($1.3)**	**($2.8)**	**($1.2)**	**$2.9**	**$4.0**
U.S. Senior Producers																				
Operating Cash Flow	10.5	21.2	25.6	20.6	30.6	39.3	53.9	56.0	57.2	79.1	58.2	63.2	75.5	80.5	84.6	80.2	46.1	30.0	46.1	63.3
Capital Spending	(8.6)	(12.5)	(24.7)	(19.6)	(21.8)	(26.6)	(39.7)	(50.8)	(58.5)	(79.7)	(53.7)	(64.3)	(84.0)	(101.9)	(93.8)	(102.7)	(68.1)	(35.2)	(50.0)	(60.8)
Dividends	(1.3)	(1.4)	(1.4)	(1.5)	(1.6)	(2.0)	(2.7)	(2.7)	(3.1)	(3.5)	(3.7)	(3.7)	(4.1)	(5.4)	(4.5)	(5.7)	(5.7)	(4.4)	(4.6)	(5.2)
Free Cash Flow	**$0.6**	**$7.4**	**($0.5)**	**($0.5)**	**$7.3**	**$10.7**	**$11.5**	**$2.5**	**($4.4)**	**($4.1)**	**$0.8**	**($4.8)**	**($12.6)**	**($26.7)**	**($13.7)**	**($28.2)**	**($27.7)**	**($9.6)**	**($8.5)**	**($2.7)**
Multinationals																				
Operating Cash Flow	101.0	166.5	145.8	142.7	181.5	235.0	297.6	341.8	339.2	364.9	287.1	331.1	442.9	421.8	411.9	375.3	270.6	227.7	291.1	366.7
Capital Spending	(77.3)	(78.9)	(94.3)	(113.7)	(108.7)	(126.6)	(146.7)	(184.7)	(203.0)	(272.1)	(270.4)	(288.9)	(328.9)	(357.6)	(394.6)	(349.3)	(284.2)	(181.2)	(174.9)	(198.4)
Dividends	(24.2)	(28.0)	(34.3)	(34.8)	(40.6)	(47.2)	(63.6)	(68.5)	(70.7)	(78.4)	(81.6)	(67.7)	(76.1)	(77.7)	(83.0)	(92.4)	(66.9)	(53.1)	(62.1)	(81.6)
Free Cash Flow	**($0.5)**	**$59.6**	**$17.2**	**($5.9)**	**$32.2**	**$61.1**	**$87.3**	**$88.6**	**$65.5**	**$14.4**	**($65.0)**	**($25.5)**	**$37.8**	**($13.5)**	**($65.7)**	**($66.4)**	**($80.5)**	**($6.6)**	**$54.1**	**$86.7**
Canadian SMIDs																				
Operating Cash Flow	0.4	0.8	1.1	1.2	2.1	3.3	6.3	7.5	6.7	9.3	5.7	5.9	7.1	5.0	6.1	6.6	3.5	2.6	3.7	3.7
Capital Spending	(0.3)	(0.5)	(0.7)	(0.8)	(1.5)	(2.8)	(5.6)	(8.2)	(6.3)	(6.9)	(4.4)	(7.7)	(10.9)	(9.2)	(8.8)	(9.7)	(4.1)	(2.3)	(4.6)	(3.9)
Dividends	(0.2)	(0.4)	(0.7)	(0.6)	(1.2)	(1.8)	(2.7)	(4.0)	(3.3)	(3.4)	(1.8)	(3.3)	(1.9)	(1.3)	(1.3)	(1.4)	(0.8)	(0.3)	(0.3)	(0.3)
Free Cash Flow	**($0.1)**	**($0.1)**	**($0.3)**	**($0.2)**	**($0.6)**	**($1.3)**	**($2.0)**	**($4.8)**	**($2.9)**	**($1.0)**	**($0.5)**	**($5.0)**	**($5.7)**	**($5.5)**	**($3.9)**	**($4.4)**	**($1.4)**	**$0.0**	**($1.2)**	**($0.5)**
U.S. SMIDs																				
Operating Cash Flow	0.2	0.5	0.6	0.7	1.2	2.1	3.3	4.6	6.8	8.8	5.5	5.7	8.5	10.5	13.6	15.4	9.4	4.9	7.5	10.8
Capital Spending	(0.4)	(0.5)	(1.2)	(1.1)	(1.3)	(2.6)	(4.2)	(6.8)	(10.1)	(13.1)	(7.1)	(9.2)	(16.0)	(19.9)	(23.9)	(29.0)	(18.5)	(8.7)	(14.5)	(16.7)
Dividends	(0.0)	(0.0)	(0.0)	(0.0)	(0.1)	(0.0)	(0.1)	(0.0)	(0.2)	(0.1)	(0.0)	(0.2)	(0.2)	(0.2)	(1.7)	(0.5)	(0.5)	(0.1)	(0.1)	(0.1)
Free Cash Flow	**($0.2)**	**($0.1)**	**($0.5)**	**($0.4)**	**($0.2)**	**($0.5)**	**($0.9)**	**($2.2)**	**($3.5)**	**($4.4)**	**($1.7)**	**($3.6)**	**($7.7)**	**($9.6)**	**($12.1)**	**($14.1)**	**($9.6)**	**($3.8)**	**($7.1)**	**($6.0)**
International E&Ps																				
Operating Cash Flow	0.0	0.0	0.4	0.5	0.6	1.0	1.9	2.4	3.1	2.9	4.3	5.6	10.2	10.5	11.8	10.9	7.4	4.7	6.9	8.7
Capital Spending	(0.0)	(0.0)	(0.3)	(0.5)	(0.6)	(1.0)	(2.5)	(2.8)	(4.2)	(5.0)	(6.5)	(10.3)	(12.8)	(14.3)	(17.2)	(17.6)	(10.9)	(6.6)	(5.0)	(5.7)
Dividends	-	-	(0.1)	(0.1)	(0.1)	(0.2)	(0.2)	(0.2)	(0.3)	(0.3)	(0.6)	(0.6)	(0.6)	(0.9)	(1.1)	(1.1)	(0.6)	(0.5)	(0.6)	(0.9)
Free Cash Flow	**($0.0)**	**($0.0)**	**($0.1)**	**($0.0)**	**($0.2)**	**($0.3)**	**($0.8)**	**($0.7)**	**($1.4)**	**($2.4)**	**($2.8)**	**($5.3)**	**($3.2)**	**($4.7)**	**($6.5)**	**($7.8)**	**($4.1)**	**($2.4)**	**$1.3**	**$2.1**

Source: BMO Capital Markets, Company Reports

An Oil Sands Story

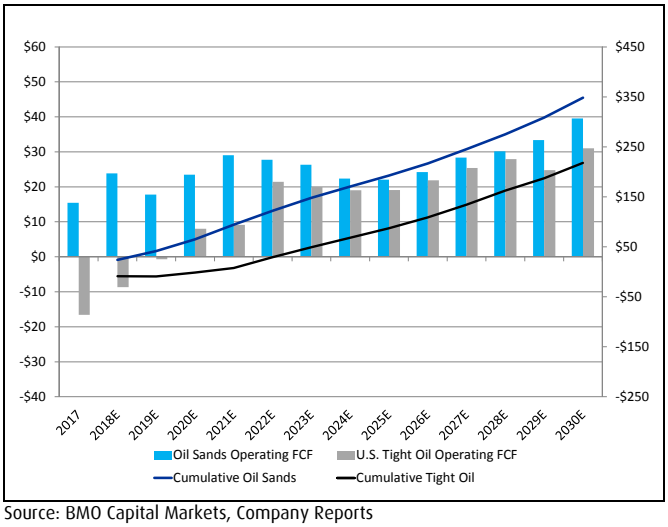
Since the 2014 downturn oil sands producers in particular have adopted a disciplined approach to investment in growth while at the same time improving reliability and optimizing costs as outlined by the relatively conservative spending and competitive operating cost outlook presented earlier in our report. Because of this dynamic and the relatively limited reinvestment requirements of oil sands operations, we believe the sector is poised to generate large amounts of free cash flow in coming years. We estimate that the sector could generate as much as C$240 billion in cumulative operating free cash flow through 2025 and nearly C$450 billion by 2030 (pre-dividend, share buyback and/or debt retirement). In comparison, the entire U.S. tight oil industry, which must continuously reinvest to offset declines, may generate just over half of this amount based on our estimate. This is not to put a damper on the potential of U.S. shale producers, but rather speaks volumes as to the relative FCF potential of Canadian large cap oil producers.

Exhibit 94: Oil Sands Industry Operating FCF (C$Billion)



Source: BMO Capital Markets, Company Reports
Notes: Excluding the impact of dividends/share buybacks and debt repayments

Exhibit 95: Oil Sands vs. Tight Oil FCF Projections (US$Billion)

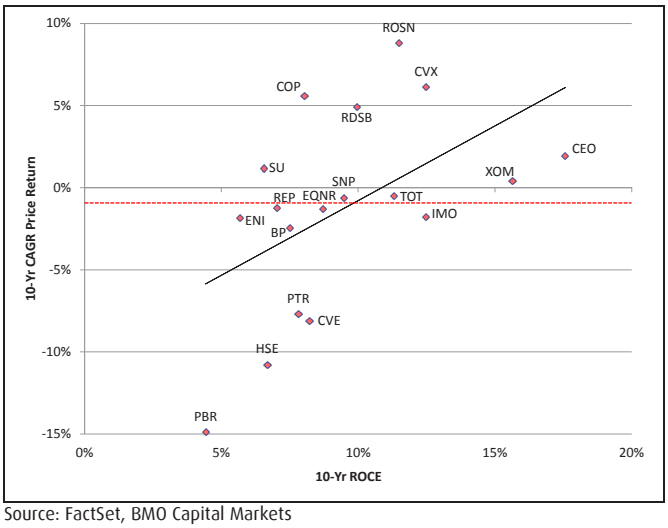


Source: BMO Capital Markets, Company Reports

The Cost/Return Relationship

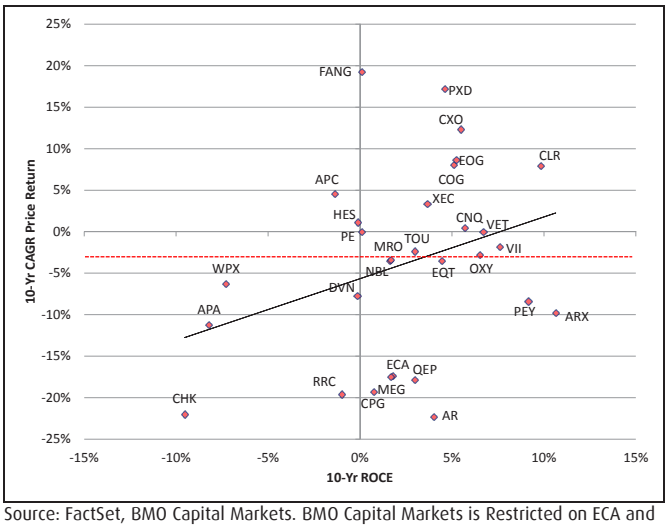
Companies that have managed to post superior stock market performance over the past two cycles tend be those that also have ***strong track records of higher returns on capital,*** as depicted in Exhibits 96-97. ***This, in turn, is tied closely to a focus on cost structure.*** We believe that employing a variety of stock screens based on these measures is imperative for navigating the sector. We take a multi-faceted approach because while both Returns on Capital (ROCE) and Proved Supply Costs are individually connected to stock market performance over time, the two measures are not always perfectly aligned given various other extraneous variables that can cause stock performance to stray from fundamentals over short periods.

Exhibit 96: ROCE vs. Share Performance –Integrateds



Source: FactSet, BMO Capital Markets

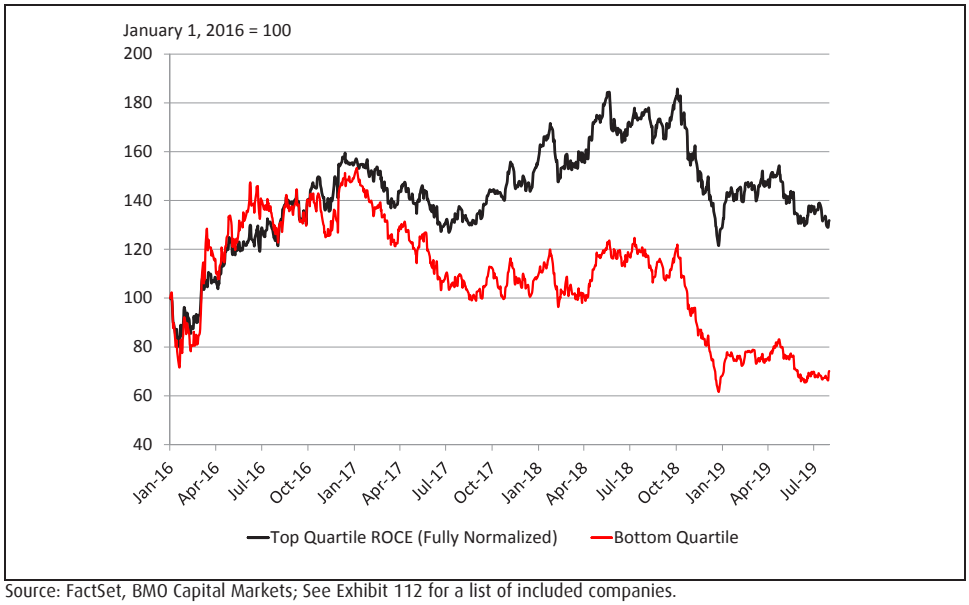
Exhibit 97: Long-Term ROCE vs. Share Performance – Seniors



Source: FactSet, BMO Capital Markets. BMO Capital Markets is Restricted on ECA and QEP.

This relationship is much more evident when comparing the stock market performance of the top-performing companies based on reported ROCE, to that of the lowest returning producers. As we illustrate in Exhibit 98, companies with the best three-year average ROCE track record outperformed the lowest returning companies by a margin of nearly 70% since 2016.

Exhibit 98: BMO Cost Study ROCE Performance Index

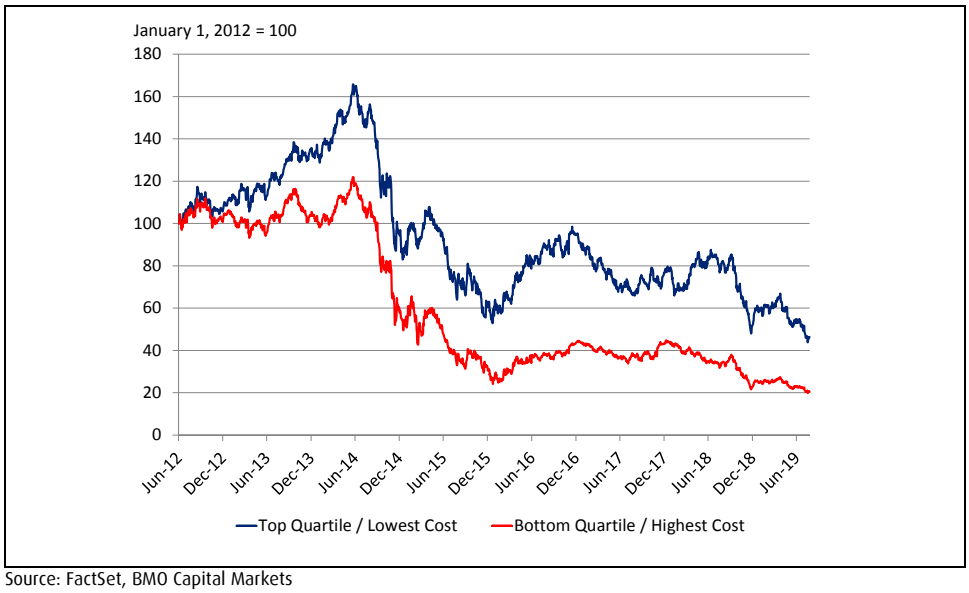


Source: FactSet, BMO Capital Markets; See Exhibit 112 for a list of included companies.

Costs Drive Returns, and Equity Performance Follows

Aside from commodity prices, which are largely an external variable, cost structure is the most important *controllable* factor driving corporate operating leverage and returns capability. Our study consistently finds that companies posting lower costs tend to represent superior investment options *through the cycle*. In Exhibit 99, we provide a retrospective view of cost study and stock market performance since 2012. This Index is meant to simulate the equity market performance of buying and holding the lowest-cost producers from our study each year (based on three-year average supply costs, rebalanced each year). The results demonstrate that ***investment in low-cost producers as per the BMO Cost Study since 2012 would have generated 30% aggregate outperformance to date versus the high-cost group.***

Exhibit 99: BMO Cost Study "Purchase Index" Retrospective

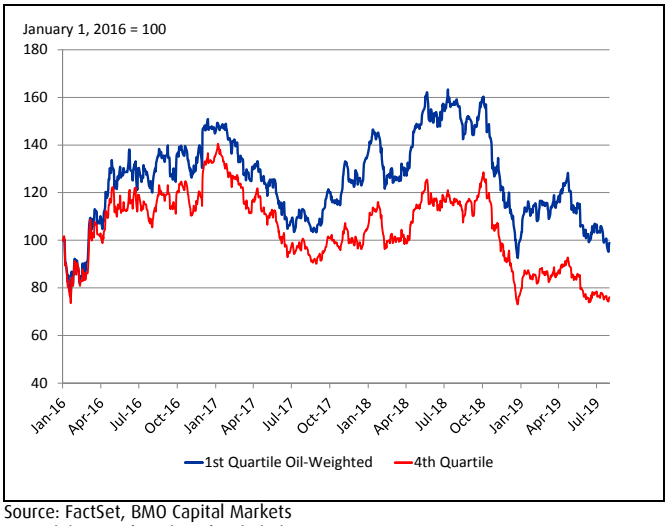


Source: FactSet, BMO Capital Markets

Note: Index reflects theoretical investment in the top (lowest cost) and bottom (highest cost) producers from our study each year since 2012, rebalanced annually.

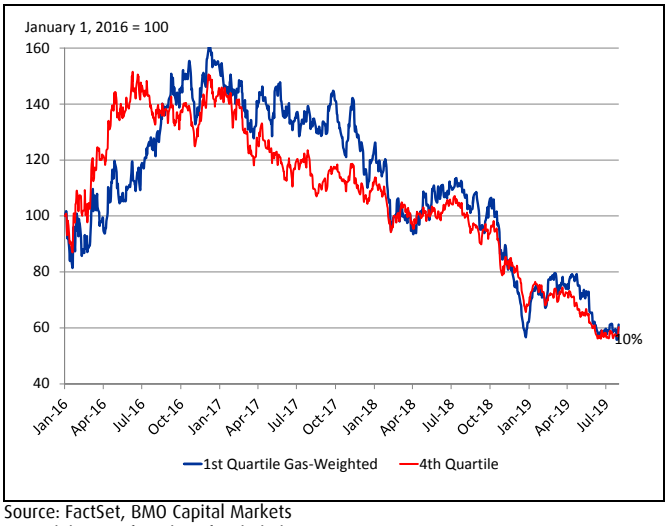
Exhibits 100 and 101 also illustrate the relative equity performance of the highest and lowest cost crude oil and natural gas weighted producers from our study, respectively. As shown, the lowest-cost crude oil producers in our study have outperformed higher-cost peers by roughly 22% over the past three years, while low-cost gas producers outperformed by 10%. It is important to note that the performance of top low-cost gas producers in 2017 and 2018 has been impacted by weakened market sentiment toward mostly low-cost Canadian natural gas producers that have faced recent market access challenges. So while short-term extraneous variables like these can impact the relative performance of cost rankings in our study, the ultimate outcome of better performance for the low-cost group stands.

Exhibit 100: Equity Performance: Top vs. Bottom Quartile Costs – Oil-Weighted Producers



Source: FactSet, BMO Capital Markets
See Exhibit 102 for a list of included companies.

Exhibit 101: Equity Performance of Top vs. Bottom Quartile Costs – Gas-Weighted Producers



Source: FactSet, BMO Capital Markets
See Exhibit 103 for a list of included companies.

Breakeven Performance Rankings: Multi-Faceted Approach

Our annual Cost Study is published on the belief that consistent financial returns are the root of long-run stock market performance, and this in turn is driven by *all-in, full-cycle costs*. We acknowledge that there are many variables impacting the market performance of shares over time. So this relationship is not perfect and sometimes does not hold over short periods of time. There is also no single metric to identify the "lowest cost" producer—rather a set of important measures that we believe can be used to effectively screen for relative strength and return potential. In our view, ***investors should seek companies that post consistently low all-in supply costs AND that have seen these costs actually translate into consistently higher ROCE over time.*** As such, we base our rankings on three different breakeven cost measures in addition to normalized ROCE measures, as outlined below.

1) Reported costs of Total Proved (TP) reserve additions using our realized oil:gas price ratio methodology.[2] We believe it is most appropriate to compare oil-centric and natural gas focused producers separately. We show that the top lowest-cost producers in our Study consistently outperform high-cost companies over time.

2) The true cost of adding *productive reserves* can be distorted by variances in Developed (PD) versus Undeveloped (PUD) reserves included in Total Proved reserves. We estimate relative costs of supply based on efficiency replacing Proved Developed reserves.

3) We further identify companies with notable improving or deteriorating trends in all-in costs, as these tend to signal significant shifts in stock market performance over time.

Total Proved Supply Cost Rankings

Exhibits 102 and 103 list the top companies in our study ranked by lowest three-year average implied Brent oil price and Henry Hub gas price requirements, respectively, based on reported changes in Total Proved (TP) reserves and our realized gas:oil price ratio methodology. The lowest implied cost oil producers include **Parex, Encana (Restricted), Northern Oil, Vermilion,** and **Cimarex**. The lowest-cost natural gas producers include **Peyto, Cabot, Paramount, Chesapeake,** and **Arc Resources.**

[2] Please see the methodology section at the end of our executive summary for details. Using industry standard energy equivalency ratio of 6:1 to convert volumes of natural gas to oil can yield distortions in the calculation of cost structure on an oil-equivalent basis given considerable difference in the relative market value of the two commodities.

Exhibit 102: Oil Producer Supply Costs Ranking ($/Boe, Brent, Realized Gas:Oil Ratio)

Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
1	**Parex**	PXT	-	-	-	147.20	99.24	79.86	75.23	49.18	37.01	37.05	45.92	39.67	47.21
2	**Encana**	ECA	83.81	83.50	61.19	102.61	109.25	92.48	101.18	55.46	46.63	47.68	46.85	45.32	59.31
3	**Northern Oil**	NOG	-	59.99	86.99	101.76	114.33	104.22	115.31	57.76	45.46	39.35	53.55	45.73	59.34
4	**Vermilion**	VET	97.42	62.89	89.66	127.60	87.09	57.08	102.68	51.79	32.21	51.83	53.25	45.88	54.21
5	**Cimarex**	XEC	137.40	43.61	48.46	88.72	102.63	95.45	78.40	59.23	52.90	43.20	54.92	48.71	57.30
6	**Eni S.P.A.**	ENI	100.14	80.20	74.19	140.57	99.79	114.60	137.48	53.74	63.36	66.97	36.28	49.50	62.18
7	**Husky**	HSE	125.16	52.54	90.22	108.38	174.47	120.40	101.67	73.55	43.43	49.08	58.49	50.21	64.82
8	**Equinor**	EQNR	179.70	81.28	91.03	108.45	97.00	107.19	157.36	89.73	78.56	40.40	42.90	50.46	71.22
9	**Berry**	BRY	118.53	58.23	91.02	154.70	162.84	131.82	110.06	98.19	69.38	36.17	45.01	51.08	71.68
10	**Chevron**	CVX	82.52	133.77	204.10	94.16	95.29	159.38	146.27	101.81	66.99	44.58	46.81	51.93	77.04
11	**EOG Resources**	EOG	87.06	65.59	93.61	113.05	120.06	82.08	73.97	68.94	68.98	46.89	52.64	53.15	61.45
12	**Jagged Peak**	JAG	-	-	-	-	-	-	-	48.40	37.14	49.44	62.45	53.37	69.58
13	**QEP Resources**	QEP	127.90	40.78	58.51	28.34	122.31	111.72	109.77	44.78	45.88	61.75	56.03	54.43	63.36
14	**Torc**	TOG	81.64	63.73	100.14	143.07	111.56	127.92	89.40	70.98	53.48	46.39	67.75	54.61	64.20
15	**Premier**	PMO	107.72	48.42	102.95	89.03	135.66	99.19	275.21	34.85	65.33	49.27	49.40	54.68	93.63
16	**Pioneer**	PXD	248.52	156.78	58.00	103.44	152.64	111.96	112.12	71.27	58.31	44.41	66.62	55.26	70.02
17	**Noble**	NBL	167.57	92.17	75.20	195.73	159.33	95.47	186.11	115.22	45.46	53.09	71.69	55.42	74.41
18	**Highpoint**	HPR	82.70	32.00	41.35	66.93	139.01	68.34	108.46	115.61	48.04	39.68	78.83	55.46	76.69
19	**Continental**	CLR	129.46	36.96	67.43	87.02	90.03	78.67	95.29	52.72	83.99	66.31	48.27	56.05	67.97
20	**Whitecap**	WCP	-	-	123.56	102.21	126.21	96.52	93.58	65.29	46.47	52.91	73.51	56.47	64.83
21	**ConocoPhillips**	COP	100.44	67.92	58.64	109.78	99.66	116.36	144.27	132.91	75.78	50.16	47.12	57.52	90.71
22	**Canadian Natural**	CNQ	64.74	59.23	73.32	163.05	119.94	105.99	90.05	62.08	57.07	59.05	54.02	57.59	60.90
23	**Matador**	MTDR	-	-	-	115.87	147.86	83.81	111.94	76.38	55.84	48.11	68.89	57.90	65.68
24	**Enerplus**	ERF	117.86	198.20	194.61	98.20	144.73	105.97	83.61	53.96	54.66	55.17	59.11	57.94	63.53
25	**Hess Corp.**	HES	91.76	81.73	85.48	150.58	129.87	159.61	140.60	130.13	70.16	48.43	65.83	58.44	90.60
26	**Cardinal**	CJ	-	-	-	-	-	186.25	106.40	65.02	47.96	60.13	58.95	58.86	69.46
27	**Bonterra**	BNE	59.76	33.62	66.31	195.70	94.22	55.58	69.16	64.94	37.49	53.31	74.40	58.89	58.14
28	**Devon**	DVN	92.68	45.52	84.10	116.13	148.48	132.63	124.24	135.65	61.39	50.46	67.39	59.19	84.05
29	**Murphy Oil**	MUR	101.12	65.53	94.21	113.20	121.76	102.47	110.81	77.13	55.35	61.89	64.20	59.30	75.57
30	**Bonanza Creek**	BCEI	-	-	-	119.99	155.21	94.73	126.85	69.01	44.75	66.79	72.15	59.95	77.29
31	WPX Energy	WPX	-	-	92.47	79.91	173.46	126.44	130.78	107.55	52.69	60.76	63.90	59.96	83.04
32	Pengrowth	PGF	82.49	79.02	123.56	99.22	144.52	99.76	121.71	115.86	39.31	51.87	95.70	60.02	89.21
33	Oasis	OAS	-	50.10	62.44	88.78	84.03	112.50	96.37	48.77	59.76	50.52	86.19	60.42	64.48
34	Sinopec	SNP	170.07	96.63	94.82	117.31	124.59	132.16	119.79	61.00	84.38	50.55	48.83	60.77	71.86
35	Apache	APA	148.09	85.80	98.30	130.71	178.26	108.48	124.86	109.46	60.64	52.39	68.68	61.84	81.90
36	Approach	AREX	86.20	57.16	50.75	103.95	127.64	123.18	101.02	62.57	35.37	47.05	100.98	62.20	70.87
37	Unit	UNT	96.88	68.29	100.63	110.49	116.38	102.62	96.01	75.65	67.90	46.74	72.23	62.95	72.68
38	Surge	SGY	102.00	50.37	87.25	115.15	126.25	142.35	98.81	61.90	49.03	55.14	84.30	62.96	70.26
39	Occidental	OXY	116.90	48.56	91.75	173.91	132.44	93.20	107.23	110.71	59.64	55.19	76.09	63.06	82.19
40	Anadarko	APC	115.84	80.01	86.64	99.79	122.18	133.59	95.76	119.60	72.68	61.45	58.41	63.16	77.91
41	Transglobe	TGL	89.47	43.39	64.61	81.80	84.04	112.24	104.92	143.69	68.24	59.66	62.00	63.40	101.00
42	BP PLC	BP	74.74	59.75	80.02	120.46	156.59	77.97	154.72	105.22	55.59	64.12	71.90	63.46	78.31
43	Royal Dutch Shell	RD	95.92	43.82	75.73	104.18	147.01	128.77	393.45	223.47	97.47	38.18	62.55	63.68	95.93
44	Petrobras	PBR	198.78	58.28	73.99	108.10	118.13	117.85	112.23	119.24	140.64	56.63	55.48	64.08	95.99
45	Carrizo	CRZO	152.18	139.86	105.55	130.91	146.21	102.25	91.80	72.39	64.43	65.78	64.07	64.40	71.64
46	Madalena	MVN	547.83	159.07	264.25	334.72	211.67	175.40	79.94	93.32	44.68	83.26	66.60	65.30	74.35
47	Rosneft	ROSN	97.62	53.40	74.04	92.29	100.50	108.51	102.50	63.95	50.86	73.13	77.29	65.78	72.49
48	Tamarack Valley	TVE	-	-	101.24	35.13	84.66	83.05	119.42	54.87	47.11	74.81	67.20	65.93	71.31
49	Parsley	PE	-	-	-	-	90.38	92.50	134.59	56.36	54.09	82.52	60.29	66.51	73.19
50	SRC Energy	SRCI	-	745.31	120.47	134.22	82.00	157.44	73.99	50.48	103.22	58.04	58.97	66.64	60.23
51	Sanchez	SN	-	-	32.39	162.66	78.18	109.16	86.26	105.27	33.51	67.44	101.71	66.74	80.49
52	Whiting	WLL	137.30	52.24	76.16	118.65	127.06	106.03	100.97	68.01	51.14	74.83	75.71	67.25	104.01
53	Galp Energia	GALP	-	-	156.55	218.67	306.18	192.18	172.97	136.38	187.62	47.87	59.10	67.35	90.34
54	Denbury	DNR	55.06	79.56	82.68	105.54	85.89	110.58	105.07	121.67	87.98	56.97	58.30	67.45	85.92
55	Total S.A.	TOT	92.29	89.71	75.97	151.63	155.23	200.74	181.29	85.44	88.95	57.67	66.68	67.57	84.15
56	Crescent Point	CPG	69.43	97.50	110.31	102.03	120.20	104.33	108.08	86.06	63.60	62.45	80.37	67.93	81.50
57	Suncor	SU	74.45	88.55	96.41	86.35	129.76	113.65	101.35	69.24	67.77	60.86	74.71	67.95	74.99
58	CNOOC	CEO	113.86	61.41	65.24	80.24	83.36	105.37	128.19	76.85	103.13	41.60	53.73	68.29	65.10
59	Extraction	XOG	-	-	-	-	-	-	125.70	58.82	67.36	88.02	57.64	68.47	91.77
60	MEG Energy	MEG	-	-	89.11	109.71	91.32	118.73	126.34	43.62	47.27	83.74	73.31	68.52	75.03
61	Cenovus	CVE	59.37	53.88	45.99	76.14	107.01	128.15	109.73	53.18	51.14	71.93	98.17	68.66	69.12
62	PetroChina	PTR	126.04	64.23	80.63	112.14	132.25	128.11	113.95	148.24	100.87	64.49	65.98	70.44	86.41
63	Baytex	BTE	88.23	63.82	64.17	98.21	175.19	99.99	109.35	91.22	94.75	62.65	57.17	71.23	83.23
64	Laredo	LPI	-	-	36.86	113.76	86.51	106.71	156.81	93.97	57.80	64.81	89.04	71.31	90.13
65	Diamondback	FANG	-	-	-	-	195.21	174.36	119.69	59.85	59.89	76.51	86.29	73.58	77.27
66	Callon	CPE	151.31	23.92	74.74	87.53	205.16	138.03	121.20	55.06	84.27	86.02	70.32	75.03	76.87
67	Obsidian	OBE	97.26	62.08	46.53	114.04	77.34	132.93	67.05	63.04	71.76	55.19	93.76	75.21	72.32
68	Freehold	FRU	58.14	37.80	40.94	59.68	110.78	69.31	114.92	101.89	76.92	66.75	79.45	76.01	94.78
69	PDC Energy	PDCE	148.62	120.26	80.59	100.10	120.30	77.51	139.53	97.07	117.38	57.71	60.33	77.13	91.93
70	Journey	JOY	-	-	-	-	-	119.25	87.39	65.92	45.23	95.34	82.39	77.81	73.06
71	Imperial	IMO	84.32	78.12	74.76	118.59	115.22	135.63	101.21	62.92	113.35	61.00	82.72	78.20	82.04
72	SM Energy	SM	107.66	118.06	73.03	86.32	96.76	78.40	91.38	56.54	89.52	81.96	62.09	78.23	72.09
73	Concho	CXO	100.34	73.55	90.82	97.42	119.91	107.20	102.95	151.84	86.92	64.73	85.42	80.89	87.85
74	Halcon	HK	101.66	60.18	82.94	155.91	164.37	121.29	81.51	103.28	68.11	68.02	111.34	81.06	84.73
75	Gran Tierra	GTE	50.07	36.97	73.04	78.38	84.71	99.47	103.29	62.37	100.59	47.75	82.46	81.23	87.60
76	Centennial	CDEV	-	-	-	-	-	-	80.57	61.79	259.01	48.02	60.61	82.28	79.72
77	Exxon Mobil	XOM	114.74	74.50	137.58	92.54	97.87	120.60	106.36	74.08	96.25	59.40	80.64	84.55	85.86
78	Igas Energy	IGAS	-	-	-	-	128.18	62.21	222.96	71.86	81.64	57.71	78.63	86.26	119.13
79	Zargon	ZAR	85.10	71.73	85.24	130.01	166.74	126.11	173.81	111.50	85.81	77.77	98.27	87.02	110.26
80	Athabasca	ATH	-	-	-	-	498.92	1,146.85	556.19	75.17	121.98	52.61	97.57	87.95	172.17
81	Marathon Oil	MRO	159.56	58.04	159.06	135.16	130.66	111.99	120.79	102.49	81.13	117.97	79.33	89.30	97.59
82	Frontera Energy	FEC	75.63	55.82	115.56	61.79	178.08	126.41	201.70	77.48	103.57	57.25	106.54	89.41	110.41
83	Lundin	LUPE	-	76.87	79.47	90.77	376.48	417.64	298.77	57.25	76.95	144.53	80.28	90.27	143.68
84	EP Energy	EPE	-	-	-	-	-	97.04	103.93	73.86	68.17	96.49	129.67	98.02	94.98
85	Pan Orient	POE	48.78	42.99	58.67	110.10	159.42	262.95	517.24	260.93	99.50	154.21	87.70	100.49	227.71
86	Tullow	TUL	82.10	75.63	142.74	280.30	101.17	149.13	159.62	118.60	125.98	103.95	79.79	101.47	115.93
87	EnQuest	ENQ	-	-	70.89	91.79	93.98	78.86	142.35	108.64	112.47	106.03	92.02	103.07	110.44
88	Kosmos	KOS	-	-	-	109.36	105.25	129.91	70.95	218.48	290.92	65.97	116.35	115.69	111.71
89	Genel	GENL	-	-	-	120.76	170.67	173.18	156.38	148.99	113.27	54.00	72.69	117.08	159.86
90	Pemex	Pemex	91.97	77.86	94.01	112.61	112.67	130.05	201.25	100.13	162.08	105.20	91.47	120.21	143.96
91	Ecopetrol	EC	143.16	75.70	82.94	96.93	113.35	142.67	167.37	269.95	152.29	114.41	143.64	126.90	146.95
92	SOCO	SIA	173.74	148.33	315.23	905.45	232.64	114.31	235.96	186.58	184.69	196.70	180.97	197.66	205.74
93	Oryx	OXC	-	-	-	-	-	-	325.66	301.67	365.42	262.62	263.38	287.97	299.20
	Oil-Weighted Average		**101.74**	**68.57**	**97.51**	**103.94**	**114.44**	**111.57**	**121.91**	**81.61**	**65.37**	**58.10**	**68.23**	**63.31**	**78.43**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana and QEP Resources.
Note: Includes oil-weighted and balanced oil/gas companies.

Exhibit 103: Gas-Weighted Supply Costs ($/Mcfe, Henry Hub, Realized Gas:Oil Ratio)

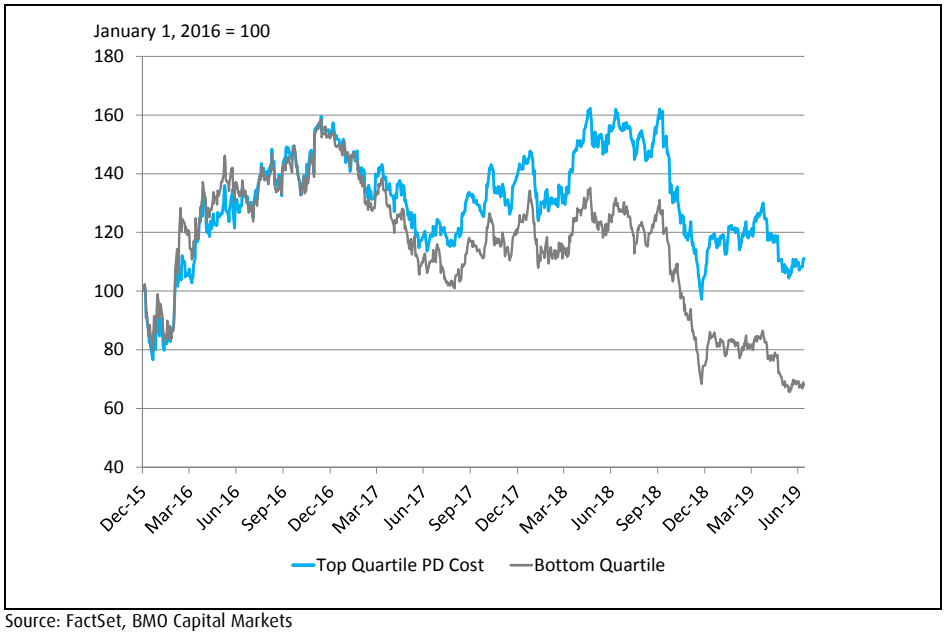
Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
1	**Peyto**	PEY	9.16	1.95	3.29	2.97	4.51	5.67	3.69	3.78	2.88	2.69	1.45	2.23	2.70
2	**Cabot**	COG	13.57	9.54	5.96	4.60	3.44	2.62	3.45	3.19	2.64	2.43	2.22	2.40	2.81
3	**Paramount**	POU	17.52	9.84	9.78	9.10	6.71	6.28	5.42	10.49	2.55	2.07	2.68	2.44	3.66
4	**Chesapeake**	CHK	15.26	6.49	6.68	6.06	4.33	5.11	4.83	4.15	1.94	3.51	3.09	2.46	3.63
5	**Arc Resources**	ARX	6.86	4.34	5.22	5.21	3.83	4.75	6.59	3.20	2.15	2.94	2.50	2.52	3.39
6	**Comstock**	CRK	4.86	5.40	4.17	2.35	3.08	5.40	6.48	6.52	3.10	3.04	2.01	2.63	4.85
7	**Advantage**	AAV	8.06	4.27	3.89	5.46	3.12	7.06	11.70	3.39	2.01	2.85	3.30	2.67	3.41
8	**Storm**	SRX	-	-	-	7.33	5.39	4.84	4.53	3.49	4.20	3.02	2.26	2.81	4.98
9	**NuVista**	NVA	9.79	5.03	5.24	7.91	3.72	4.80	5.22	6.76	3.69	2.67	2.87	2.93	3.92
10	**Birchcliff**	BIR	6.52	2.88	6.21	4.25	4.77	4.08	3.86	2.57	2.85	2.68	3.22	2.95	3.06
11	**Tourmaline**	TOU	-	-	5.45	4.95	3.33	4.96	3.76	3.07	3.11	2.73	3.24	3.00	3.46
12	**Kelt**	KEL	-	-	-	-	-	5.99	5.40	5.53	2.74	2.58	3.90	3.05	3.97
13	**Ultra**	UPL	7.64	5.53	7.83	6.34	2.65	3.25	2.87	2.35	2.84	2.35	4.25	3.32	3.13
14	**Bellatrix**	BXE	-	7.13	4.02	3.58	3.54	3.08	6.51	9.41	2.95	3.86	3.06	3.33	5.13
15	**Crew**	CR	13.15	3.95	4.68	4.77	3.87	4.86	4.83	4.30	2.69	4.57	3.63	3.38	4.10
16	Leucrotta	LXE	-	-	-	-	-	-	7.89	11.64	4.76	4.58	2.22	3.45	3.70
17	Painted Pony	PONY	9.22	4.88	5.12	4.64	4.79	5.16	3.29	2.23	2.36	5.26	3.73	3.46	2.64
18	Perpetual	PMT	9.49	8.88	7.97	7.16	3.36	4.66	3.67	5.03	3.51	3.62	3.02	3.56	3.91
19	Seven Generations	VII	-	-	-	-	-	8.04	4.92	14.77	2.66	5.81	7.24	3.72	3.80
20	Bonavista	BNP	8.02	5.19	4.62	3.52	4.41	5.65	5.94	6.27	3.37	4.76	3.13	3.79	4.75
21	EQT Corporation	EQT	10.43	5.95	6.59	14.97	6.55	3.14	5.13	4.96	3.92	5.99	3.41	4.11	4.39
22	Repsol	REP	7.77	3.48	3.52	5.10	4.54	5.88	8.39	8.15	4.23	3.87	4.34	4.18	6.04
23	Southwestern	SWN	5.16	3.66	3.73	4.33	3.32	2.53	4.68	7.17	5.60	2.63	4.06	4.33	5.19
24	Montage	MR	-	-	-	-	-	26.16	8.38	10.66	4.36	4.08	4.71	4.36	6.80
25	Canacol	CNE	-	4.89	5.18	10.42	5.24	11.87	7.90	6.37	5.97	4.93	3.02	4.38	5.78
26	Delphi	DEE	8.15	3.77	4.36	2.89	3.47	4.10	5.04	6.35	7.65	4.14	3.54	4.78	5.18
27	Antero	AR	-	-	-	-	4.74	6.77	4.91	6.89	4.89	4.59	5.80	4.95	5.41
28	Santos	Santos	5.93	4.88	6.45	10.16	12.64	17.06	14.27	30.41	4.14	4.50	5.57	4.99	7.48
29	Valeura	VLE	-	-	19.90	4.98	15.45	12.38	4.58	5.48	5.09	3.40	6.44	5.03	5.07
30	Niko	NKO	8.56	8.66	6.06	4.95	4.59	4.03	16.60	5.98	1.15	6.45	8.54	5.33	8.11
31	Range	RRC	12.30	3.84	4.95	5.99	4.11	4.63	7.26	6.26	7.41	4.57	4.50	5.38	5.94
	Gas-Weighted Average		**10.16**	**4.97**	**5.36**	**5.70**	**4.43**	**5.33**	**5.38**	**6.99**	**3.63**	**3.34**	**3.40**	**3.44**	**3.75**

Source: BMO Capital Markets, Company Reports
Note: Includes companies with production weighted 60% or more toward natural gas in 2018.

Proved Developed Supply Cost Rankings

We estimate supply costs based solely on implied Proved Developed reserve additions help address this impact that additions of non-productive Undeveloped reserves have on Total Proved reserve costs. We demonstrate in Exhibit 104 that companies with superior Proved Developed costs outperformed those with higher costs by as much as a 40% on average over the past three years.

Exhibit 104: Equity Performance of Top vs. Bottom Three-Year Proved Developed Costs



Source: FactSet, BMO Capital Markets

Exhibits 105 and 106 rank oil and gas-weighted companies, respectively, by the lowest three-year average supply cost using Proved Developed reserve additions. Lowest-cost oil companies on a Proved Developed basis include **Parex, Cimarex, Conoco, Eni,** and **Continental,** all of which also rank within the top quartile based on Total Proved Reserve costs.

Exhibit 105: Oil Supply Cost Rankings – Proved Developed

Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
1	Parex	PXT	-	-	-	158.23	122.13	93.16	82.42	48.87	41.35	41.61	49.26	43.90	51.21
2	Cimarex	XEC	242.29	51.27	52.74	104.86	109.25	107.06	86.30	56.78	46.23	43.33	55.41	48.02	56.87
3	ConocoPhillips	COP	196.39	64.25	55.30	164.15	187.54	161.87	140.20	96.30	67.86	44.64	45.58	49.66	78.45
4	Eni S.P.A.	ENI	112.37	71.37	103.74	171.33	143.80	111.29	117.93	54.45	64.39	64.40	37.26	50.06	65.85
5	Continental	CLR	200.91	95.88	136.25	133.42	154.71	146.97	148.33	82.48	91.56	55.90	45.34	51.76	81.30
6	Vermilion	VET	95.82	117.25	135.12	149.13	92.03	85.36	124.39	41.84	33.96	46.29	62.97	51.96	60.84
7	Total S.A.	TOT	111.82	71.99	80.12	120.41	186.70	210.90	158.71	77.36	60.75	51.04	53.62	53.63	74.74
8	Pioneer	PXD	553.99	109.37	77.56	133.14	170.99	125.98	114.37	69.20	54.93	45.74	67.61	55.78	69.73
9	Encana	ECA	91.43	44.27	115.05	120.57	107.34	96.57	117.23	56.07	69.96	56.02	55.74	56.33	70.72
10	Denbury	DNR	104.76	82.12	108.02	121.68	110.48	127.74	112.35	150.10	124.76	46.43	61.07	56.50	98.82
11	Petrobras	PBR	96.92	63.69	126.33	112.55	312.51	127.89	94.82	134.98	58.63	62.17	53.12	57.10	80.51
12	Baytex	BTE	102.23	98.15	76.96	118.06	131.43	108.28	160.58	83.22	63.77	60.42	61.54	57.48	86.50
13	Canadian Natural	CNQ	135.19	27.97	140.14	242.91	150.74	99.52	94.21	61.01	56.16	58.99	54.50	57.67	64.81
14	Chevron	CVX	83.93	84.14	94.05	169.78	109.67	176.21	118.08	75.97	55.43	66.21	53.95	57.88	73.39
15	Suncor	SU	69.75	66.79	77.28	78.52	116.71	181.55	205.17	153.20	59.26	76.91	48.95	57.90	107.63
16	EOG Resources	EOG	97.67	211.46	142.17	149.51	154.65	98.61	89.11	99.35	74.52	51.53	62.70	60.40	74.30
17	Transglobe	TGL	98.34	98.64	49.86	90.25	88.71	127.16	98.76	87.52	67.59	52.64	62.04	60.71	73.87
18	Devon	DVN	132.09	61.61	94.54	111.62	195.53	108.75	124.06	77.57	65.44	49.92	71.98	61.11	75.81
19	Sinopec	SNP	211.62	79.73	68.28	115.36	108.21	127.17	112.51	73.69	64.60	57.31	61.63	61.53	78.32
20	MEG Energy	MEG	-	-	126.55	439.80	260.62	112.50	122.67	43.57	49.51	52.98	75.98	61.67	69.03
21	Torc	TOG	130.43	62.37	115.90	135.54	335.73	142.18	113.92	79.18	58.79	51.46	77.09	61.81	75.22
22	Anadarko	APC	88.85	80.07	104.70	95.74	126.60	172.89	119.15	96.52	69.53	59.73	58.71	61.83	76.41
23	Cardinal	CJ	-	-	-	-	-	171.60	108.08	64.71	48.66	61.90	66.38	62.60	69.30
24	Laredo	LPI	-	-	114.31	122.00	161.85	162.25	180.74	87.31	49.95	56.49	82.41	63.09	86.38
25	Husky	HSE	156.84	84.18	151.25	123.29	192.94	143.77	100.81	67.79	41.46	41.82	78.93	63.78	65.87
26	Whitecap	WCP	-	-	119.89	148.82	161.42	135.58	111.11	87.98	54.76	61.66	75.46	63.78	79.06
27	Enerplus	ERF	123.36	303.11	321.26	224.32	167.35	135.62	89.48	92.78	53.52	70.47	65.50	63.81	76.79
28	Crescent Point	CPG	50.90	344.32	165.62	118.56	151.34	109.77	120.97	88.36	63.22	61.81	67.77	63.87	79.09
29	Sanchez	SN	-	-	125.71	908.71	267.45	161.14	117.92	76.62	58.40	61.43	84.31	64.37	80.48
30	Royal Dutch Shell	RD	112.09	58.87	65.93	59.84	118.68	121.87	136.33	135.54	105.28	36.20	73.47	64.77	92.00
31	PetroChina	PTR	238.76	75.61	107.72	111.21	135.07	127.25	96.05	66.71	115.53	52.32	71.62	64.86	80.73
32	Equinor	EQNR	91.78	64.47	121.86	147.73	115.98	127.93	144.19	102.46	99.45	52.95	55.59	65.27	88.50
33	Obsidian	OBE	102.44	71.74	95.49	148.45	172.78	133.02	110.91	60.66	74.91	49.68	66.71	65.94	74.11
34	Apache	APA	111.37	98.88	122.03	145.20	167.05	116.14	138.26	117.57	87.59	62.86	64.16	67.87	93.13
35	Jagged Peak	JAG	-	-	-	-	-	-	-	68.03	72.55	73.05	64.26	68.59	114.34
36	Berry	BRY	196.41	61.04	174.73	147.91	183.63	163.10	102.59	108.01	76.58	75.68	55.06	68.62	86.65
37	Freehold	FRU	55.17	39.20	40.89	58.62	116.43	68.80	158.07	130.21	95.09	47.99	72.04	69.94	101.07
38	WPX Energy	WPX	-	-	47.32	89.33	136.88	147.61	104.29	129.72	69.07	77.59	65.66	70.07	89.56
39	Northern Oil	NOG	-	90.87	148.32	194.63	136.97	175.35	117.42	85.93	83.03	51.75	75.76	70.28	81.95
40	Occidental	OXY	249.58	46.82	113.48	323.64	162.34	123.29	262.64	89.77	67.37	62.98	85.02	71.44	109.77
41	Rosneft	ROSN	97.11	54.09	73.87	91.18	102.02	121.52	108.25	53.44	62.31	74.40	78.45	71.70	75.27
42	BP PLC	BP	80.04	60.63	89.61	117.56	196.33	83.98	126.70	96.11	57.70	73.88	88.25	71.75	87.50
43	Hess Corp.	HES	101.70	71.99	124.17	210.13	123.16	219.72	159.52	81.97	74.59	65.26	81.01	73.30	89.91
44	Murphy Oil	MUR	86.83	38.51	109.69	190.14	157.50	133.35	100.75	90.56	88.61	65.73	77.35	73.30	85.94
45	Unit	UNT	101.00	71.56	170.75	79.05	134.45	112.19	102.45	60.78	64.21	65.01	93.59	74.31	77.07
46	EP Energy	EPE	-	-	-	-	-	80.37	107.87	100.08	79.90	64.38	92.60	75.03	79.53
47	Noble	NBL	215.91	205.98	197.19	212.90	204.94	95.90	152.45	114.66	49.34	87.72	97.67	76.38	99.72
48	Halcon	HK	136.27	89.94	105.81	154.96	308.93	204.41	121.03	75.43	63.90	90.46	74.87	76.74	85.74
49	Tamarack Valley	TVE	-	-	86.92	50.90	93.79	93.66	144.53	73.19	53.61	88.26	77.08	76.83	86.20
50	Surge	SGY	111.17	67.10	102.85	179.42	141.91	176.35	110.95	69.89	43.05	104.50	99.47	76.94	85.93
51	Journey	JOY	-	-	-	-	-	79.91	92.53	71.77	45.87	69.12	97.56	78.03	75.82
52	Bonterra	BNE	64.25	67.02	81.84	103.84	144.55	68.92	89.36	64.41	47.31	76.06	142.70	79.52	83.61
53	Matador	MTDR	-	-	-	141.99	169.65	150.24	125.95	162.24	73.23	65.76	102.87	82.24	104.68
54	Imperial	IMO	389.09	70.55	75.72	360.73	349.94	101.33	122.24	52.69	116.94	81.54	98.93	82.61	94.50
55	Madalena	MVN	1,120.66	217.80	322.79	382.07	212.19	193.54	81.31	136.82	63.86	89.23	92.74	82.70	93.66
56	Approach	AREX	102.41	382.69	69.00	215.79	633.94	162.88	148.90	158.12	110.16	70.47	109.67	82.98	121.99
57	Oasis	OAS	-	67.96	102.30	129.06	115.68	151.21	120.87	61.21	74.18	70.48	128.98	83.22	86.51
58	Whiting	WLL	325.87	64.30	70.61	145.18	182.00	150.57	148.83	90.33	117.59	69.89	68.95	84.94	148.47
59	Parsley	PE	-	-	-	-	87.30	173.80	183.54	109.80	80.29	127.85	63.06	85.96	109.07
60	QEP Resources	QEP	201.77	111.75	78.16	47.72	189.89	121.04	110.62	56.10	91.94	103.97	73.24	88.09	86.29
61	SM Energy	SM	90.26	121.82	94.20	105.94	130.27	99.82	105.12	71.29	124.75	62.06	71.03	88.15	82.27
62	Extraction	XOG	-	-	-	-	-	-	492.06	128.33	149.43	88.79	66.10	88.19	197.49
63	Carrizo	CRZO	192.43	137.06	268.00	184.27	191.37	194.83	132.77	85.29	84.72	94.57	86.49	89.13	98.78
64	Highpoint	HPR	117.16	64.88	74.13	108.90	146.06	109.86	143.24	139.82	62.11	61.16	145.79	89.67	109.26
65	Zargon	ZAR	78.24	64.59	84.30	126.78	90.74	173.32	98.89	126.37	101.47	76.65	107.20	90.39	99.94
66	Concho	CXO	141.42	129.86	111.88	108.47	152.06	133.16	135.21	92.19	84.71	65.09	105.10	90.57	94.95
67	Marathon Oil	MRO	93.33	45.24	93.44	128.79	193.51	131.10	170.85	98.82	133.90	106.39	68.77	91.61	110.05
68	Bonanza Creek	BCEI	-	-	-	156.67	181.14	123.56	145.83	85.06	53.07	89.62	124.23	93.99	99.79
69	Diamondback	FANG	-	-	-	-	372.52	205.13	143.94	78.24	80.31	129.57	104.95	95.89	106.06
70	CNOOC	CEO	103.55	51.53	71.84	132.60	114.13	159.08	110.67	54.49	146.25	78.91	59.57	96.76	90.48
71	PDC Energy	PDCE	163.14	177.57	152.82	108.16	298.59	268.11	243.10	203.29	206.40	58.99	81.46	99.59	151.60
72	Gran Tierra	GTE	60.30	26.87	109.27	72.02	93.34	94.68	103.54	61.72	134.98	66.16	102.95	104.80	93.45
73	Pengrowth	PGF	97.28	67.40	129.42	111.15	160.47	194.51	115.54	118.40	100.17	55.15	186.32	108.20	113.77
74	Callon	CPE	57.01	32.03	150.19	132.35	328.92	161.92	165.96	76.44	151.42	127.02	97.42	112.92	121.82
75	Pemex	Pemex	86.45	87.39	96.87	115.51	110.81	135.10	117.01	110.22	165.95	86.87	90.28	122.50	124.92
76	Exxon Mobil	XOM	85.78	36.10	108.86	211.48	168.15	78.76	135.38	51.59	163.12	83.17	94.70	126.51	112.31
77	Pan Orient	POE	64.16	100.01	73.01	77.73	106.69	109.28	177.69	254.10	104.42	142.59	143.97	127.88	162.60
78	Athabasca	ATH	-	-	-	-	nm	nm	124.31	163.34	124.97	135.24	120.40	130.40	125.28
79	Centennial	CDEV	-	-	-	-	-	-	71.13	90.08	852.78	70.56	76.09	132.67	181.83
80	Ecopetrol	EC	75.84	84.50	79.06	107.49	99.47	154.61	157.53	186.38	126.98	125.01	155.96	135.37	151.88
81	SRC Energy	SRCI	-	745.31	166.04	293.42	99.21	159.81	188.78	122.50	335.86	75.28	74.30	140.01	137.14
82	Cenovus	CVE	66.91	140.61	92.63	197.84	263.52	201.76	177.46	73.97	77.18	186.27	99.73	160.22	122.33
	Developed Oil-Weighted		**129.78**	**57.95**	**101.74**	**113.56**	**136.95**	**107.51**	**126.73**	**74.39**	**75.96**	**70.84**	**88.54**	**71.34**	**85.52**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana and QEP Resources.

See pages F1 to F4 for analyst coverage.

Lowest Proved Developed cost gas companies include **Cabot, Peyto, Chesapeake, Arc Resources,** and **Paramount**—all of which are also top-5 in our Total Proved ranking.

Exhibit 106: Natural Gas Supply Cost Rankings – Proved Developed

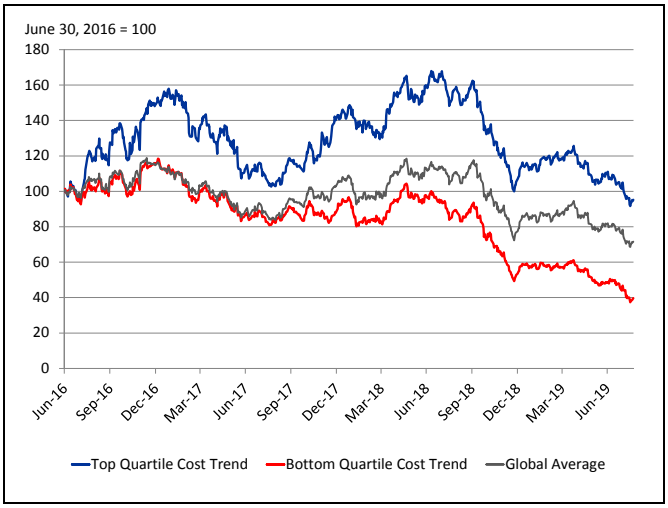
Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
1	Cabot	COG	19.42	18.93	7.72	7.29	4.26	3.13	4.07	3.83	2.38	2.69	2.50	2.55	3.15
2	Peyto	PEY	14.14	4.64	5.25	5.83	5.60	5.86	5.13	3.55	2.83	3.03	2.32	2.77	3.32
3	Chesapeake	CHK	16.63	13.93	10.19	9.02	6.69	3.56	4.22	3.76	2.64	5.06	2.45	2.92	3.64
4	Arc Resources	ARX	13.63	5.97	6.81	6.47	4.21	4.87	5.60	3.25	2.80	3.21	3.45	3.10	3.62
5	Paramount	POU	24.98	8.47	10.09	21.92	6.15	9.82	21.51	9.02	4.12	2.96	6.80	3.28	6.82
6	Storm	SRX	-	-	-	-	7.64	3.78	7.12	4.94	4.02	3.20	3.25	3.31	4.48
7	Southwestern	SWN	6.92	5.30	4.82	5.44	6.49	3.86	8.00	5.80	5.33	3.11	3.31	3.31	5.66
8	Bellatrix	BXE	-	4.35	5.76	5.38	4.70	4.31	7.78	5.92	3.65	3.88	2.93	3.49	4.89
9	Comstock	CRK	37.95	10.06	6.34	3.70	4.30	6.58	6.85	7.32	3.78	3.77	3.20	3.57	5.57
10	NuVista	NVA	10.00	5.33	7.55	5.51	5.49	7.99	7.77	10.56	4.92	3.84	3.14	3.77	5.59
11	Tourmaline	TOU	-	-	4.88	5.95	6.51	6.93	6.75	3.92	4.44	3.16	4.22	3.84	4.78
12	Delphi	DEE	10.78	4.54	5.33	3.36	7.95	6.71	6.58	5.25	3.53	4.19	5.59	3.97	5.07
13	Repsol	REP	6.72	3.04	3.77	5.67	6.46	9.23	7.32	8.35	4.23	3.72	4.20	4.04	5.54
14	Advantage	AAV	14.51	8.27	7.89	7.70	4.66	9.11	11.87	5.87	3.00	4.70	4.52	4.08	5.60
15	Birchcliff	BIR	19.98	5.36	8.36	8.41	6.54	7.86	5.82	4.19	5.34	4.28	3.08	4.16	4.48
16	Painted Pony	PONY	10.53	6.39	9.59	8.42	8.53	8.25	7.53	5.43	3.27	4.87	4.79	4.26	4.89
17	Bonavista	BNP	9.72	8.39	5.79	3.66	4.96	6.33	7.03	5.11	4.00	4.92	4.07	4.30	5.17
18	Perpetual	PMT	8.78	7.70	7.73	8.62	4.09	5.20	6.30	3.47	2.91	3.49	3.83	4.47	4.21
19	Ultra	UPL	9.44	8.77	14.77	8.94	1.72	6.40	4.77	3.74	2.83	7.89	4.10	4.49	4.73
20	Canacol	CNE	-	5.40	6.95	4.54	6.60	13.73	7.43	10.43	2.34	5.47	5.09	4.79	7.25
21	Montage	MR	-	-	-	-	-	35.47	11.09	6.98	5.28	4.83	5.22	4.84	7.08
22	Kelt	KEL	-	-	-	-	-	8.75	8.85	9.68	4.69	4.66	5.55	5.03	6.88
23	Seven Generations	VII	-	-	-	-	-	23.20	20.15	7.06	4.07	5.54	5.68	5.03	5.69
24	Antero	AR	-	-	-	-	19.07	14.21	9.97	4.79	5.17	4.66	4.71	5.06	5.95
25	Crew	CR	26.02	5.65	5.01	8.17	4.77	13.25	7.61	6.22	5.06	5.10	5.05	5.11	6.00
26	Niko	NKO	44.25	6.64	9.83	2.87	6.28	10.06	13.77	5.32	3.25	4.32	11.58	5.55	7.43
27	Range	RRC	17.11	5.56	7.14	8.49	4.43	5.84	8.61	5.74	7.80	4.99	4.74	5.81	6.27
28	EQT Corporation	EQT	20.61	18.15	14.00	8.97	11.63	4.53	7.77	4.97	6.65	8.16	4.11	5.82	5.84
29	Leucrotta	LXE	-	-	-	-	-	-	10.18	10.11	6.96	7.76	4.80	7.10	6.84
30	Valeura	VLE	-	-	7.55	5.77	23.87	14.32	5.40	10.76	12.04	6.88	9.39	9.41	9.50
	Developed Gas-Weighted		**12.96**	**4.20**	**5.60**	**6.22**	**5.30**	**5.14**	**5.59**	**6.37**	**4.22**	**4.07**	**4.41**	**3.87**	**4.09**

Source: BMO Capital Markets, Company Reports

Shifting Cost Performances

Intuitively, companies with *improving costs* should generate stronger incremental returns than those companies with rising cost structures in subsequent years. Indeed, we find that *companies with improving cost structures are generally rewarded with superior stock market performance relative to those with rising costs.* Exhibit 107 shows that ***companies with notable improving cost trends as presented in our study have vastly outperformed those with rising costs by a wide margin of over 70% since 2016***. What is more, we believe even better performance can be achieved by further vetting this list to exclude extraordinary outliers based on single-year cost trends and insights from covering analysts, as shown in Exhibit 108.

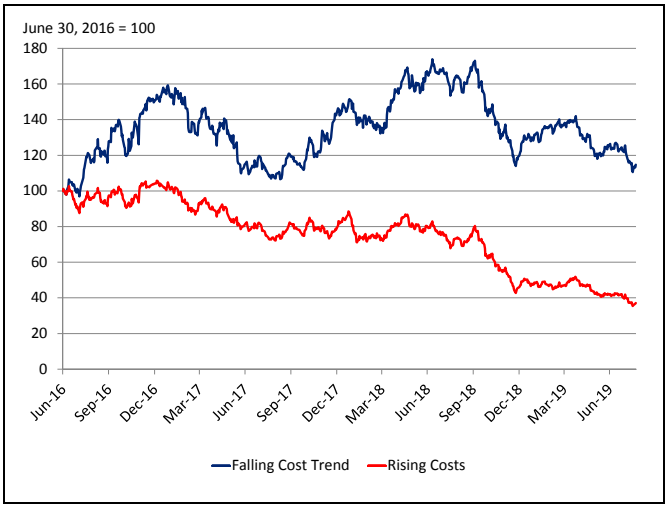
Exhibit 107: BMO Cost Trend "Purchase Index"



Source: FactSet, BMO Capital Markets

Notes: Based on top/bottom quartile ranking based on percentage change in 3-year average supply costs

Exhibit 108: BMO Cost Trend Performance - Adjusted



Source: FactSet, BMO Capital Markets

Exhibit 109 lists this ranking of companies which we believe demonstrate notable improving or deteriorating trends in three-year average supply costs based on this year's study. Most improved companies include **Shell, Pan Orient, Petrobras, ConocoPhillips,** and **Comstock**.

Exhibit 109: Company Rankings – Improving vs. Rising Supply Cost Trend

Improving Cost Trend

			Annual Supply Cost					Simple 3-Year Average			
Rank	Company	Ticker	2015	2016	2017	2018	% Chg	2016	2017	2018	% Chg
	Oil-Weighted / Balanced Companies										
1	Shell	RD	223.47	97.47	38.18	62.55	**-72%**	238.13	109.87	63.68	**-42%**
2	Pan Orient	POE	260.93	99.50	154.21	87.70	**-66%**	292.56	169.29	100.49	**-41%**
3	Petrobras	PBR	119.24	140.64	56.63	55.48	**-53%**	124.04	103.81	64.08	**-38%**
4	Hess	HES	130.13	70.16	48.43	65.83	**-49%**	113.63	85.60	58.44	**-32%**
5	ConocoPhillips	COP	132.91	75.78	50.16	47.12	**-65%**	117.66	81.97	57.52	**-30%**
6	Centennial	CDEV	61.79	259.01	48.02	60.61	**-2%**	133.79	112.35	82.28	**-27%**
7	Ecopetrol	EC	269.95	152.29	114.41	143.64	**-47%**	196.54	170.28	126.90	**-25%**
8	Denbury	DNR	121.67	87.98	56.97	58.30	**-52%**	104.91	90.30	67.45	**-25%**
9	Anadarko	APC	119.60	72.68	61.45	58.41	**-51%**	96.02	84.41	63.16	**-25%**
10	Galp	GALP	136.38	187.62	47.87	59.10	**-57%**	165.65	89.63	67.35	**-25%**
11	Berry	BRY	98.19	69.38	36.17	45.01	**-54%**	92.54	67.91	51.08	**-25%**
12	Devon	DVN	135.65	61.39	50.46	67.39	**-50%**	107.10	78.58	59.19	**-25%**
13	Chevron	CVX	101.81	66.99	44.58	46.81	**-54%**	105.02	67.87	51.93	**-23%**
14	Equinor	EQNR	89.73	78.56	40.40	42.90	**-52%**	108.55	65.18	50.46	**-23%**
15	Apache	APA	109.46	60.64	52.39	68.68	**-37%**	98.32	78.87	61.84	**-22%**
16	Petrochina	PTR	148.24	100.87	64.49	65.98	**-55%**	121.02	89.79	70.44	**-22%**
17	Kosmos	KOS	218.48	290.92	65.97	116.35	**-47%**	193.45	144.70	115.69	**-20%**
18	WPX Energy	WPX	107.55	52.69	60.76	63.90	**-41%**	97.01	73.99	59.96	**-19%**
19	Genel	GENL	148.99	113.27	54.00	72.69	**-51%**	139.54	144.09	117.08	**-19%**
20	Occidental	OXY	110.71	59.64	55.19	76.09	**-31%**	92.53	76.64	63.06	**-18%**
21	Freehold	FRU	101.89	76.92	66.75	79.45	**-22%**	97.91	91.95	76.01	**-17%**
22	Pengrowth	PGF	115.86	39.31	51.87	95.70	**-17%**	92.29	72.49	60.02	**-17%**
23	HighPoint	HPR	115.61	48.04	39.68	78.83	**-32%**	90.70	66.73	55.46	**-17%**
24	Continental	CLR	52.72	83.99	66.31	48.27	**-8%**	77.33	66.59	56.05	**-16%**
	Gas-Weighted Companies										
1	Comstock	CRK	6.52	3.10	3.04	2.01	**-69%**	5.37	4.50	2.63	**-42%**
2	Bellatrix	BXE	9.41	2.95	3.86	3.06	**-68%**	6.29	5.32	3.33	**-37%**
3	Leucrotta	LXE	11.64	4.76	4.58	2.22	**-81%**	8.09	5.34	3.45	**-35%**
4	Santos	STO	30.41	4.14	4.50	5.57	**-82%**	16.28	7.61	4.99	**-34%**
5	Paramount	POU	10.49	2.55	2.07	2.68	**-74%**	6.15	3.58	2.44	**-32%**
6	Repsol	REP	8.15	4.23	3.87	4.34	**-47%**	6.92	6.00	4.18	**-30%**
7	Montage	MR	10.66	4.36	4.08	4.71	**-56%**	7.80	6.09	4.36	**-28%**
8	Canacol	CNE	6.37	5.97	4.93	3.02	**-53%**	6.75	5.91	4.38	**-26%**
9	Storm	SRX	3.49	4.20	3.02	2.26	**-35%**	4.07	3.77	2.81	**-25%**

Deteriorating Cost Trend

			Annual Supply Cost					Simple 3-Year Average			
Rank	Company	Ticker	2015	2016	2017	2018	% Chg	2016	2017	2018	% Chg
	Oil-Weighted / Balanced Companies										
1	EP Energy	EPE	73.86	68.17	96.49	129.67	**76%**	81.99	72.93	98.02	**34%**
2	Approach	AREX	62.57	35.37	47.05	100.98	**61%**	66.32	50.01	62.20	**24%**
3	MEG Energy	MEG	43.62	47.27	83.74	73.31	**68%**	72.41	58.54	68.52	**17%**
4	Obsidian	OBE	63.04	71.76	55.19	93.76	**49%**	67.28	65.28	75.21	**15%**
5	Surge	SGY	61.90	49.03	55.14	84.30	**36%**	69.91	55.63	62.96	**13%**
6	Igas	IGAS	71.86	81.64	57.71	78.63	**9%**	125.49	76.28	86.26	**13%**
7	Halcon	HK	103.28	68.11	68.02	111.34	**8%**	84.30	71.96	81.06	**13%**
8	Jagged Peak	JAG	48.40	37.14	49.44	62.45	**29%**	42.77	47.45	53.37	**12%**
9	Gran Tierra	GTE	62.37	100.59	47.75	82.46	**32%**	88.75	72.61	81.23	**12%**
10	Frontera	FEC	77.48	103.57	57.25	106.54	**38%**	127.58	81.14	89.41	**10%**
11	Journey	JOY	65.92	45.23	95.34	82.39	**25%**	66.18	70.98	77.81	**10%**
12	Oasis	OAS	48.77	59.76	50.52	86.19	**77%**	68.30	56.01	60.42	**8%**
13	Rosneft	ROSN	63.95	50.86	73.13	77.29	**21%**	72.44	61.00	65.78	**8%**
14	Athabasca	ATH	75.17	121.98	52.61	97.57	**30%**	251.12	81.73	87.95	**8%**
15	Vermilion	VET	51.79	32.21	51.83	53.25	**3%**	62.22	42.78	45.88	**7%**
16	SRC Energy	SRCI	50.48	103.22	58.04	58.97	**17%**	75.89	62.22	66.64	**7%**
17	QEP Resources	QEP	44.78	45.88	61.75	56.03	**25%**	66.81	51.01	54.43	**7%**
18	Bonterra	BNE	64.94	37.49	53.31	74.40	**15%**	57.20	55.53	58.89	**6%**
19	Cenovus	CVE	53.18	51.14	71.93	98.17	**85%**	71.35	65.14	68.66	**5%**
20	Diamondback	FANG	59.85	59.89	76.51	86.29	**44%**	79.81	70.01	73.58	**5%**
21	Whitecap	WCP	65.29	46.47	52.91	73.51	**13%**	68.45	53.80	56.47	**5%**
22	Whiting	WLL	68.01	51.14	74.83	75.71	**11%**	73.37	64.85	67.25	**4%**
23	Tamarack Valley	TVE	54.87	47.11	74.81	67.20	**22%**	73.80	63.63	65.93	**4%**
24	SM Energy	SM	56.54	89.52	81.96	62.09	**10%**	79.15	76.37	78.23	**2%**
	Gas-Weighted Companies										
1	Painted Pony	PONY	2.23	2.36	5.26	3.73	**67%**	2.63	2.59	3.46	**34%**
2	Ultra	UPL	2.35	2.84	2.35	4.25	**81%**	2.69	2.52	3.32	**31%**
3	Niko	NKO	5.98	1.15	6.45	8.54	**43%**	7.91	4.74	5.33	**12%**
4	Advantage	AAV	3.39	2.01	2.85	3.30	**-2%**	5.70	2.40	2.67	**12%**
5	Valeura	VLE	5.48	5.09	3.40	6.44	**18%**	5.05	4.56	5.03	**10%**
6	Birchcliff	BIR	2.57	2.85	2.68	3.22	**25%**	3.09	2.71	2.95	**9%**
7	Tourmaline	TOU	3.07	3.11	2.73	3.24	**6%**	3.31	2.89	3.00	**4%**
8	Antero	AR	6.89	4.89	4.59	5.80	**-16%**	5.57	5.11	4.95	**-3%**
9	Crew	CR	4.30	2.69	4.57	3.63	**-16%**	3.94	3.52	3.38	**-4%**

Source: FactSet, BMO Capital Markets. BMO Capital Markets is Restricted on QEP Resources.

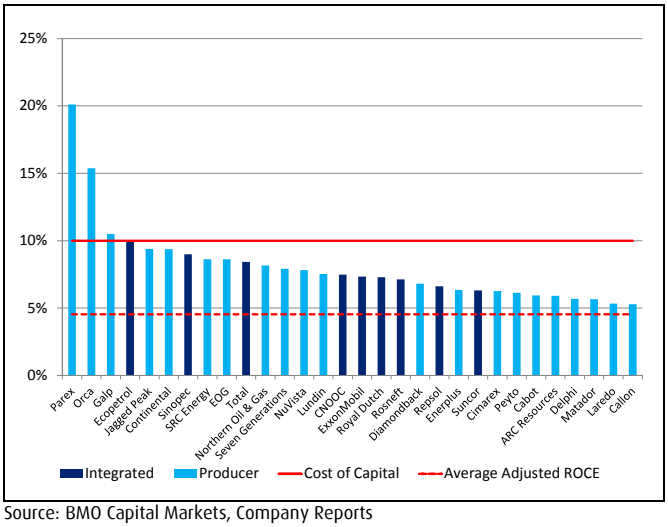
Returns on Capital (ROCE) Ranking - Not "As Advertised"

As mentioned, we believe companies that are able to generate superior returns through the full oil and gas cycle as a function of their focus on low costs, represent superior investment options. That said, the transparency of true relative return performance has been "muddied" since the 2014 downturn as a result of massive impairments to PP&E (and base capital). As a result, the amount of invested capital that returns are measured against is artificially lowered, and standard return measures non-meaningfully high for many of these companies. While these writedowns were wide-spread, their relative impact on the invested capital base of individual companies varied considerably.

To achieve a more meaningful ranking of ROCE performance, we adjust returns to exclude any material extraordinary charges against earnings, and add back cumulative impairments to base capital since 2014. Company rankings based on this fully normalized ROCE measure are outlined in Exhibits 110-111. Companies with the highest average returns over the past three years include **Parex, Orca, Galp, Ecopetrol,** and **Jagged Peak**, while the most consistent longer-term returns (five-year average) have been achieved by **Parex, Orca, ExxonMobil, CNOOC,** and **Continental.**

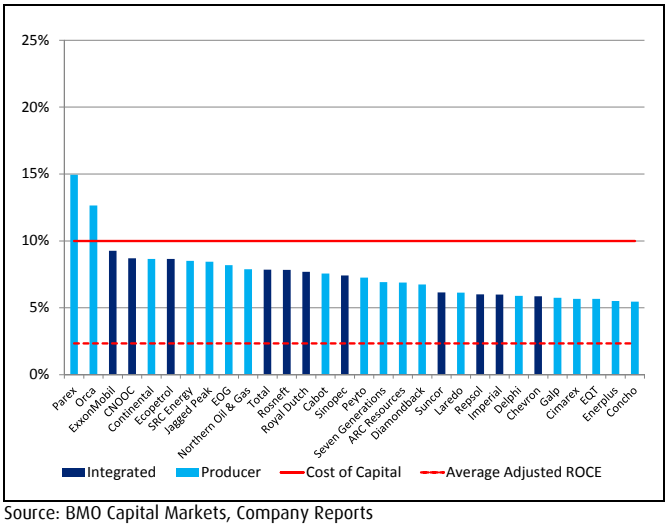
Exhibits 110 and 111 provide the ranking of oil and gas producers in our study by three-year average Return on Capital Employed (ROCE), on a normalized basis.

Exhibit 110: Three-Year Average ROCE – Fully Normalized



Source: BMO Capital Markets, Company Reports

Exhibit 111: Five-Year Average ROCE – Fully Normalized



Source: BMO Capital Markets, Company Reports

Exhibit 112: Normalized Return on Capital Employed (ROCE %) Rankings

Rank	Company	Ticker	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 3-Year	Average 5-Year
1	**Parex**	PXT				7.9%	12.0%	7.8%	8.6%	1.7%	1.3%	17.6%	34.8%	20.1%	14.9%
2	**Orca**	ORC	(6.8%)	6.5%	21.5%	17.6%	35.8%	13.6%	(9.3%)	19.3%	22.5%	8.6%	15.1%	15.4%	12.6%
3	**Galp**	GALP		21.4%	11.7%	11.2%	7.8%	6.2%	(4.8%)	3.3%	4.5%	11.1%	15.8%	10.5%	5.8%
4	**Ecopetrol**	EC	55.7%	17.2%	21.9%	30.5%	23.2%	17.1%	9.2%	4.3%	4.7%	9.5%	16.1%	10.0%	8.7%
5	**Jagged Peak**	JAG								(0.5%)	(1.7%)	7.6%	14.4%	9.4%	8.4%
6	**Continental**	CLR	30.1%	9.4%	12.9%	18.2%	17.1%	13.2%	14.6%	1.0%	(1.8%)	19.4%	9.7%	9.4%	8.7%
7	**Sinopec**	SNP	8.5%	12.7%	15.0%	13.5%	10.6%	9.3%	5.9%	4.6%	8.3%	9.6%	9.0%	9.0%	7.4%
8	**SRC Energy**	SRCI		nm	nm	(32.5%)	17.1%	6.8%	10.6%	6.0%	(0.5%)	9.6%	11.9%	8.6%	8.5%
9	**EOG**	EOG	27.5%	7.0%	3.7%	11.3%	6.9%	13.1%	16.3%	(0.2%)	(1.7%)	13.9%	12.5%	8.6%	8.2%
10	**Total**	TOT	22.6%	15.6%	18.6%	19.2%	14.8%	11.7%	5.9%	7.6%	7.1%	8.3%	9.7%	8.4%	7.8%
11	**Northern Oil & Gas**	NOG		6.6%	4.0%	9.4%	10.0%	6.4%	13.0%	2.2%	0.4%	3.0%	16.3%	8.2%	7.9%
12	**Seven Generations**	VII						0.8%	13.5%	(4.3%)	1.9%	12.9%	8.0%	7.9%	6.9%
13	**NuVista**	NVA	12.1%	(0.2%)	(0.1%)	0.7%	(2.1%)	(8.2%)	(0.3%)	(8.9%)	0.9%	9.8%	9.9%	7.8%	3.8%
14	**Lundin**	LUPE	-	7.8%	33.5%	11.6%	10.7%	6.1%	(4.5%)	(9.3%)	6.9%	9.8%	5.8%	7.5%	2.5%
15	**CNOOC**	CEO	39.1%	21.0%	31.5%	34.7%	27.6%	17.9%	15.3%	5.6%	2.6%	7.5%	12.5%	7.5%	8.7%
16	**ExxonMobil**	XOM	46.0%	18.5%	22.1%	24.9%	26.4%	17.8%	16.7%	8.2%	5.0%	7.3%	9.5%	7.3%	9.3%
17	**Royal Dutch**	RD	22.3%	9.8%	13.7%	18.4%	14.7%	10.8%	11.2%	5.8%	3.9%	8.2%	8.8%	7.3%	7.7%
18	**Rosneft**	ROSN	23.5%	12.3%	18.1%	16.3%	14.2%	15.5%	9.1%	8.3%	4.6%	6.1%	10.4%	7.1%	7.8%
19	**Diamondback**	FANG					(17.8%)	6.4%	11.4%	2.7%	4.1%	8.5%	6.7%	6.8%	6.7%
20	**Repsol**	REP	12.7%	6.8%	16.7%	9.0%	6.7%	1.8%	7.8%	2.8%	6.4%	5.8%	7.7%	6.6%	6.0%
21	**Enerplus**	ERF	21.0%	2.5%	3.5%	9.3%	6.3%	2.1%	10.2%	(2.4%)	4.6%	3.3%	10.7%	6.3%	5.5%
22	**Suncor**	SU	14.4%	2.0%	8.4%	11.1%	9.0%	10.9%	8.5%	3.1%	4.8%	6.5%	7.6%	6.3%	6.2%
23	**Cimarex**	XEC	16.4%	8.2%	22.5%	16.7%	9.5%	12.5%	10.1%	0.2%	1.2%	7.1%	10.1%	6.3%	5.7%
24	**Peyto**	PEY	19.9%	16.2%	13.3%	11.1%	6.8%	8.1%	12.0%	5.8%	5.1%	7.4%	5.8%	6.1%	7.3%
25	**Cabot**	COG	13.7%	7.7%	5.7%	5.3%	5.3%	9.5%	20.4%	0.3%	(1.7%)	7.3%	12.2%	5.9%	7.6%
26	**ARC Resources**	ARX	19.4%	7.8%	8.7%	11.2%	6.6%	6.3%	12.6%	3.0%	4.0%	8.3%	5.2%	5.9%	6.9%
27	**Delphi**	DEE	3.2%	(1.5%)	0.7%	4.4%	(2.4%)	1.8%	10.2%	1.2%	(5.7%)	3.9%	15.6%	5.7%	5.9%
28	**Matador**	MTDR				6.6%	5.8%	9.5%	10.9%	(0.4%)	(2.4%)	6.1%	9.6%	5.7%	5.3%
29	**Laredo**	LPI			24.1%	11.7%	6.7%	8.3%	12.3%	3.3%	(1.5%)	8.3%	8.7%	5.3%	6.1%
30	**Callon**	CPE	10.5%	28.7%	14.2%	46.5%	2.4%	0.6%	6.0%	(11.2%)	(1.3%)	4.9%	8.6%	5.3%	3.9%
31	EQT	EQT	9.7%	6.1%	7.0%	11.3%	5.5%	8.4%	10.8%	4.3%	(4.7%)	12.3%	1.8%	5.2%	5.7%
32	Petrobras**	PBR	14.5%	8.5%	6.2%	5.4%	3.5%	3.8%	4.4%	4.7%	6.4%	1.9%	7.3%	5.1%	4.9%
33	Cenovus	CVE	-	24.7%	9.5%	13.0%	10.9%	6.5%	9.0%	0.7%	(2.1%)	9.1%	4.1%	5.0%	5.1%
34	Concho	CXO	20.1%	0.2%	7.6%	13.0%	8.9%	6.1%	11.2%	2.6%	(3.7%)	5.0%	9.4%	5.0%	5.5%
35	Painted Pony	PONY	-	-	1.3%	0.5%	(3.5%)	(0.8%)	3.6%	(0.4%)	(3.4%)	11.0%	4.1%	4.9%	4.1%
36	Premier	PMO	20.8%	19.1%	20.3%	11.9%	12.3%	12.6%	7.1%	1.6%	6.3%	1.7%	6.7%	4.8%	4.6%
37	Occidental	OXY	27.8%	10.4%	15.4%	19.2%	13.5%	12.3%	9.8%	1.3%	0.7%	3.9%	9.7%	4.8%	5.0%
38	Equinor	EQNR	16.5%	6.9%	13.0%	24.0%	18.0%	10.9%	5.6%	(2.6%)	(2.9%)	6.0%	11.0%	4.7%	3.4%
39	Carrizo	CRZO	10.7%	4.3%	4.8%	4.6%	5.6%	6.2%	11.7%	1.1%	(0.6%)	3.6%	9.4%	4.7%	5.1%
40	Pioneer	PXD	5.7%	3.8%	10.1%	17.5%	8.1%	2.3%	10.9%	0.2%	(3.6%)	9.8%	6.4%	4.6%	4.9%
41	Chevron	CVX	28.9%	12.1%	20.4%	25.9%	22.0%	15.5%	12.4%	4.1%	0.9%	4.1%	8.4%	4.4%	5.9%
42	Husky	HSE	26.1%	9.2%	6.7%	13.2%	10.6%	9.5%	7.6%	0.1%	4.4%	4.3%	4.7%	4.4%	4.2%
43	Parsely Energy	PE						13.6%	(13.3%)	1.2%	0.1%	3.9%	6.3%	4.3%	2.9%
44	Birchcliff	BIR	3.5%	0.2%	1.6%	3.5%	2.2%	5.8%	7.9%	(2.8%)	0.4%	6.8%	5.5%	4.2%	3.7%
45	EnQuest	ENQ		7.9%	10.6%	7.9%	37.8%	13.9%	4.1%	2.5%	9.6%	(1.3%)	5.0%	4.2%	3.9%
46	Imperial	IMO	46.3%	16.7%	20.5%	24.7%	21.8%	12.1%	12.9%	3.5%	1.9%	1.9%	8.5%	4.1%	6.0%
47	BP Plc	BP	20.9%	16.5%	22.8%	19.8%	13.5%	17.7%	8.2%	2.2%	1.2%	3.6%	7.2%	4.1%	4.5%
48	Santos Ltd.	Santos	14.1%	7.5%	9.6%	10.4%	5.4%	4.0%	3.1%	2.0%	1.5%	2.6%	7.8%	4.1%	3.5%
49	Encana	ECA	20.7%	8.5%	7.9%	5.6%	4.4%	6.3%	10.2%	0.6%	0.6%	4.1%	7.0%	4.0%	4.5%
50	Devon	DVN	21.8%	7.2%	21.6%	20.8%	4.7%	5.8%	7.3%	(0.0%)	1.8%	2.6%	8.0%	4.0%	3.7%
51	Ultra Petroleum	UPL	28.3%	57.7%	17.0%	13.2%	76.8%	18.5%	20.8%	(24.0%)	(0.6%)	8.0%	4.2%	4.0%	1.9%
52	Storm	SRX				(7.8%)	(3.2%)	0.4%	9.1%	(1.0%)	(7.8%)	9.3%	8.6%	3.8%	4.0%
53	PetroChina	PTR	18.1%	11.8%	13.8%	12.0%	9.7%	9.9%	7.7%	3.3%	1.7%	3.7%	6.1%	3.8%	4.5%
54	Canadian Natural*	CNQ	18.0%	6.1%	8.4%	8.7%	6.4%	6.7%	10.3%	(0.8%)	(0.2%)	5.5%	5.3%	3.8%	4.3%
55	ConocoPhillips	COP	5.2%	6.6%	14.9%	15.9%	12.4%	14.9%	11.1%	(3.6%)	(4.2%)	4.2%	12.0%	3.4%	3.7%
56	Crescent Point	CPG	20.3%	(20.0%)	0.8%	3.6%	4.8%	2.4%	7.4%	0.3%	(2.3%)	10.9%	1.4%	3.3%	3.5%
57	ENI	ENI	20.4%	9.8%	11.5%	12.0%	13.9%	10.0%	1.9%	(7.0%)	(3.0%)	5.1%	7.7%	3.3%	1.0%
58	Tourmaline	TOU		(0.6%)	1.4%	2.4%	0.8%	2.8%	6.4%	1.4%	(0.2%)	4.5%	4.5%	3.1%	3.3%
59	Southwestern	SWN	19.1%	18.8%	16.6%	13.9%	11.3%	14.2%	11.3%	1.6%	(2.6%)	6.6%	5.0%	3.1%	4.1%
60	Whitecap	WCP			(8.8%)	8.1%	6.9%	3.3%	19.1%	(1.3%)	(0.0%)	3.3%	4.9%	2.9%	4.9%
	Industry Average		**19.7%**	**9.9%**	**13.7%**	**14.6%**	**12.0%**	**9.9%**	**7.7%**	**1.9%**	**1.0%**	**5.1%**	**7.3%**	**4.5%**	**4.7%**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana.
Note: ROCE adjusted to exclude unusual charges against earnings, and major impairments to the capital base since 2014

See pages F1 to F4 for analyst coverage.

Exhibit 113: Normalized Return on Capital Employed (ROCE %) Rankings – Continued

Rank	Company	Ticker	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Average 3-Year	Average 5-Year
61	MEG Energy	MEG		3.7%	2.4%	3.6%	2.3%	(1.1%)	10.6%	(10.9%)	(1.4%)	8.6%	1.1%	2.9%	2.0%
62	Advantage	AAV	4.7%	(2.8%)	(0.2%)	0.7%	0.8%	0.7%	1.8%	2.1%	(0.6%)	7.0%	1.2%	2.6%	2.4%
63	PDC Energy	PDCE	16.9%	(6.9%)	4.2%	5.6%	3.7%	3.9%	16.4%	3.1%	(5.8%)	3.7%	7.6%	2.4%	4.0%
64	Vermilion	VET	24.1%	18.2%	9.3%	11.1%	11.2%	13.9%	10.1%	3.3%	(3.1%)	2.8%	5.6%	2.3%	4.1%
65	Oasis	OAS		(9.0%)	(8.1%)	14.1%	14.1%	10.3%	12.0%	2.2%	(3.0%)	4.0%	5.1%	2.3%	4.0%
66	Soco	SIA	5.6%	8.0%	13.4%	10.0%	22.5%	12.0%	5.2%	(4.8%)	(3.1%)	4.4%	5.1%	1.6%	1.0%
67	Bonanza Creek	BCEI			15.6%	3.5%	7.5%	8.9%	10.7%	(4.9%)	(5.3%)	0.2%	9.9%	1.5%	1.8%
68	Unit Corp.	UNT	19.9%	7.4%	8.6%	9.8%	8.0%	7.0%	7.8%	0.0%	(0.1%)	4.7%	(0.5%)	1.4%	2.2%
69	Tamarack Valley	TVE			(33.7%)	(2.4%)	1.1%	4.7%	7.0%	0.5%	(3.6%)	1.0%	4.6%	1.4%	2.1%
70	Tullow	TLW	8.9%	2.5%	2.6%	16.3%	5.6%	3.6%	(8.1%)	(4.3%)	(3.5%)	5.1%	2.5%	1.4%	(1.8%)
71	Chesapeake	CHK	8.9%	4.3%	6.2%	5.3%	4.2%	3.2%	4.7%	(0.9%)	(3.7%)	3.9%	4.0%	1.3%	1.4%
72	Transglobe	TGL	19.1%	(5.5%)	20.4%	35.5%	34.6%	23.4%	6.7%	(5.2%)	(8.9%)	7.9%	4.6%	1.2%	1.0%
73	Crew	CR	1.0%	(3.9%)	1.1%	1.2%	3.4%	(0.7%)	4.2%	0.4%	(1.1%)	2.9%	1.3%	1.1%	1.6%
74	Apache	APA	23.6%	9.6%	12.3%	13.4%	8.6%	6.7%	(2.7%)	(13.4%)	(0.9%)	3.0%	0.9%	1.0%	(2.3%)
75	Bonterra	BNE	44.2%	39.6%	26.5%	18.8%	11.3%	11.2%	5.0%	0.2%	(0.6%)	0.9%	2.3%	0.8%	1.6%
76	Antero	AR					17.9%	(1.0%)	10.3%	12.5%	(3.1%)	6.5%	(1.5%)	0.8%	4.3%
77	SM Energy	SM	19.9%	1.8%	15.7%	16.2%	5.4%	10.6%	20.1%	(0.8%)	(8.5%)	0.7%	10.0%	0.7%	3.6%
78	Freehold Royalties	FRU	29.6%	9.9%	12.3%	17.8%	14.1%	16.9%	15.1%	3.4%	(0.8%)	1.1%	1.8%	0.7%	3.4%
79	Bonavista	BNP	24.1%	5.5%	8.8%	7.6%	2.9%	3.3%	6.2%	0.4%	(2.2%)	3.0%	1.2%	0.7%	1.8%
80	Torc	TOG	10.1%	(5.6%)	(0.0%)	(3.8%)	(5.9%)	(0.9%)	4.9%	(2.2%)	(2.1%)	1.1%	2.4%	0.6%	0.7%
81	Sanchez	SN			(23.0%)	2.2%	(7.3%)	4.4%	7.2%	(14.2%)	(5.5%)	1.6%	3.1%	0.6%	(0.6%)
82	Denbury	DNR	23.8%	(1.5%)	8.7%	10.1%	8.5%	6.5%	9.2%	0.3%	(4.8%)	2.4%	3.8%	0.5%	2.1%
83	Murphy	MUR	29.1%	12.3%	10.2%	12.7%	11.9%	10.9%	9.4%	(2.6%)	(1.2%)	(2.9%)	5.2%	0.5%	1.7%
84	Highpoint	HPR	11.0%	6.9%	9.4%	8.0%	3.1%	0.7%	3.5%	(1.1%)	(6.5%)	(3.4%)	7.6%	0.5%	0.7%
85	Anadarko	APC	12.8%	1.2%	4.5%	(1.0%)	9.1%	7.3%	6.3%	(7.0%)	(6.7%)	1.4%	6.3%	0.4%	0.0%
86	Gran Tierra	GTE	6.5%	2.4%	8.6%	21.6%	11.1%	16.3%	1.5%	(2.4%)	(0.8%)	(3.5%)	4.8%	0.3%	0.1%
87	Genel	GENL				(6.4%)	2.4%	5.6%	(5.7%)	2.0%	(5.2%)	1.6%	4.2%	0.3%	(0.5%)
88	Halcon	HK	13.2%	(2.3%)	7.8%	(2.8%)	(5.0%)	(5.1%)	11.3%	(9.7%)	(4.1%)	2.2%	2.3%	0.3%	0.6%
89	Surge	SGY	9.5%	(0.9%)	(4.6%)	2.4%	5.2%	3.9%	6.9%	(1.9%)	(1.5%)	1.7%	0.4%	0.2%	1.6%
90	Centennial	CDEV							7.0%	(4.2%)	(13.6%)	2.7%	6.2%	0.1%	0.3%
91	QEP	QEP	30.2%	20.5%	13.5%	9.9%	5.1%	3.8%	20.8%	(0.4%)	(5.3%)	3.5%	1.1%	(0.0%)	3.5%
92	Comstock	CRK	24.9%	(1.8%)	0.2%	2.0%	(1.7%)	4.9%	1.3%	(7.4%)	(8.3%)	0.9%	4.2%	(0.1%)	(1.2%)
93	WPX	WPX			1.4%	1.6%	(0.0%)	(2.9%)	6.8%	(4.0%)	(5.6%)	0.3%	4.0%	(0.2%)	(0.0%)
94	EP Energy	EPE						12.0%	11.5%	3.3%	(1.5%)	0.3%	0.1%	(0.3%)	2.8%
95	Whiting	WLL	10.9%	(1.2%)	9.7%	13.5%	9.7%	12.5%	5.2%	(0.6%)	(6.3%)	(1.4%)	5.4%	(0.8%)	0.4%
96	Oryx	OXC						(36.6%)	(2.3%)	(1.0%)	(2.8%)	(0.5%)	0.6%	(0.9%)	(1.2%)
97	Montage	MR						(4.1%)	(7.2%)	(12.6%)	(9.5%)	2.3%	2.8%	(1.1%)	(4.4%)
98	Baytex	BTE	23.6%	8.7%	14.7%	14.4%	16.6%	10.5%	12.8%	(1.5%)	(2.7%)	(0.7%)	(0.3%)	(1.1%)	1.4%
99	Cardinal	CJ						21.4%	10.2%	1.6%	(6.8%)	0.2%	1.9%	(1.2%)	1.3%
100	Noble	NBL	22.2%	4.4%	9.8%	9.6%	9.4%	9.1%	11.5%	(7.4%)	(4.1%)	(1.2%)	1.4%	(1.2%)	(0.3%)
101	Marathon	MRO	15.9%	5.3%	10.3%	12.9%	7.4%	7.1%	12.4%	(5.5%)	(7.4%)	(1.6%)	5.2%	(1.2%)	0.8%
102	Range	RRC	12.4%	3.7%	(2.7%)	4.3%	3.7%	4.1%	9.7%	1.7%	(4.4%)	4.6%	(4.9%)	(1.5%)	0.7%
103	Kelt	KEL						(3.3%)	2.0%	(8.1%)	(5.2%)	(1.3%)	1.4%	(1.5%)	(2.4%)
104	Pan Orient	POE	37.7%	12.7%	14.7%	12.9%	7.3%	2.5%	(1.3%)	(1.2%)	(3.5%)	(2.8%)	0.2%	(2.0%)	(1.7%)
105	Approach	AREX	12.1%	(0.4%)	3.6%	5.1%	1.4%	9.3%	6.4%	(0.5%)	(2.6%)	(4.0%)	0.1%	(2.2%)	(0.1%)
106	Extraction	XOG								4.0%	(13.8%)	(1.5%)	4.3%	(2.2%)	(1.3%)
107	Bellatrix	BXE		(60.3%)	(5.7%)	5.1%	8.9%	8.6%	11.3%	(1.1%)	(3.2%)	2.4%	(6.2%)	(2.3%)	1.2%
108	Leucrotta	LXE							4.9%	7.6%	(4.8%)	(3.3%)	0.0%	(2.4%)	0.6%
109	Journey	JOY						6.8%	10.0%	(0.2%)	(2.1%)	(0.3%)	(5.5%)	(2.6%)	0.7%
110	Frontera	FEC	7.8%	(5.0%)	12.2%	20.9%	(5.0%)	1.9%	1.5%	(8.6%)	(5.6%)	(2.2%)	(0.0%)	(2.6%)	(2.9%)
111	Pengrowth	PGF	11.5%	(0.8%)	8.0%	3.9%	0.3%	(1.8%)	8.0%	(2.9%)	(4.3%)	(0.7%)	(2.6%)	(2.6%)	0.1%
112	Niko	NKO	0.2%	(2.1%)	10.0%	9.7%	(11.5%)	(19.1%)	(16.0%)	(17.6%)	(12.1%)	8.7%	(5.5%)	(2.7%)	(8.6%)
113	Obsidian	OBE	14.7%	(0.8%)	(1.8%)	7.9%	4.3%	(1.6%)	0.4%	(5.5%)	(4.9%)	(1.6%)	(2.5%)	(3.0%)	(2.6%)
114	Berry	BRY	9.9%	4.7%	6.1%	(8.1%)	8.9%	3.4%	7.8%	(7.5%)	(9.0%)	(3.3%)	5.1%	(3.6%)	(1.9%)
115	Kosmos	KOS			(37.6%)	4.7%	(6.1%)	(8.5%)	20.1%	(6.5%)	(11.5%)	(5.7%)	3.7%	(3.7%)	(0.8%)
116	Zargon	ZAR	27.7%	1.7%	3.9%	7.3%	8.3%	0.6%	8.5%	(8.7%)	(2.0%)	(2.8%)	(8.0%)	(4.2%)	(1.8%)
117	Athabasca	ATH		-	436.6%	18.5%	0.4%	(3.9%)	(2.7%)	(3.1%)	(9.6%)	(0.1%)	(7.4%)	(5.5%)	(4.4%)
118	Perpetual	PMT	6.5%	5.9%	3.9%	(8.0%)	9.2%	9.4%	11.9%	(10.2%)	(12.4%)	(3.2%)	(3.2%)	(6.0%)	(1.2%)
119	Hess Corp	HES	16.0%	5.8%	12.0%	11.6%	8.6%	13.3%	7.2%	(6.5%)	(12.3%)	(4.8%)	(2.8%)	(6.7%)	(3.4%)
120	Igas	IGAS				(70.7%)	(15.7%)	45.0%	(32.0%)	7.2%	(5.2%)	(8.7%)	(9.5%)	(7.8%)	(8.2%)
121	Canacol	CNE		(4.3%)	(23.1%)	1.0%	10.9%	(20.6%)	4.7%	(5.7%)	(0.7%)	(6.6%)	(34.6%)	(10.3%)	(6.7%)
122	Valeura	VLE			(167.9%)	(54.6%)	(16.7%)	(29.2%)	2.3%	(6.9%)	(8.5%)	(15.4%)	(8.4%)	(11.3%)	(6.3%)
123	Paramount	POU	(7.2%)	(9.3%)	(10.4%)	(2.3%)	4.4%	(0.6%)	0.9%	(10.7%)	9.2%	(22.5%)	(9.2%)	(11.4%)	(8.5%)
124	Madalena	MVN	(18.1%)	(31.3%)	(23.4%)	(50.1%)	(17.0%)	(18.9%)	(16.2%)	(8.4%)	(16.7%)	(15.7%)	(1.3%)	(11.5%)	(11.9%)
125	Pemex	Pemex	(34.3%)	(33.2%)	(0.4%)	(17.8%)	6.5%	(25.6%)	(42.8%)	(45.6%)	(48.6%)	(3.8%)	(11.1%)	(21.5%)	(28.3%)
	Industry Average		**19.7%**	**9.9%**	**13.7%**	**14.6%**	**12.0%**	**9.9%**	**7.7%**	**1.9%**	**1.0%**	**5.1%**	**7.3%**	**4.5%**	**4.7%**

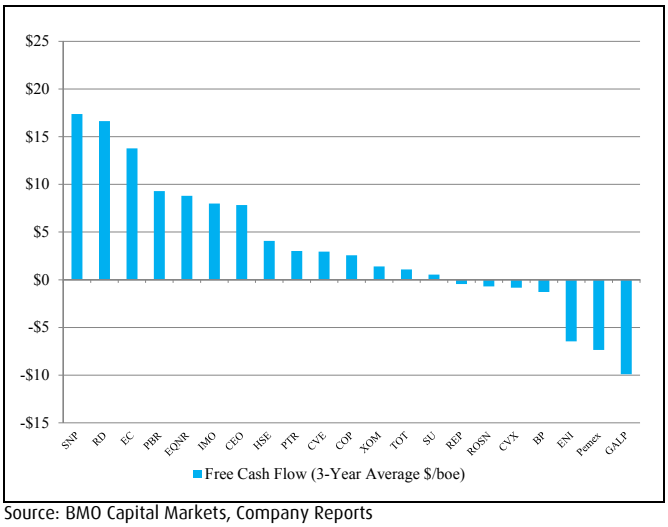
Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on QEP Resources.

Note: ROCE adjusted to exclude unusual charges against earnings, and major impairments to the capital base since 2014

Free Cash Flow Is King – FCF Growth Ranking

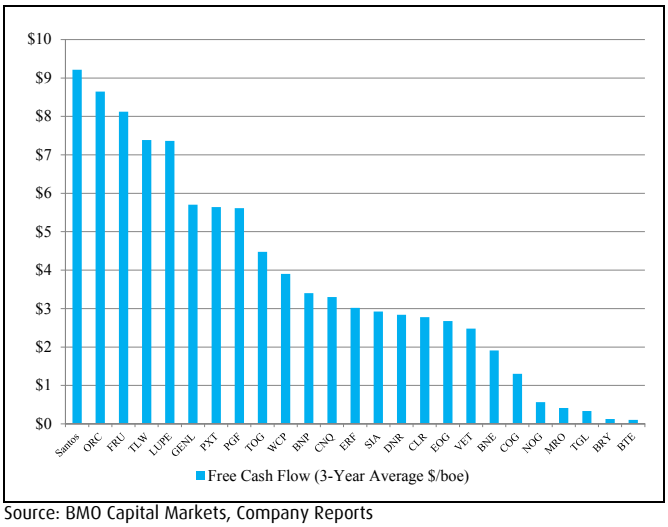
A ranking of companies in our study by three-year average free cash flow per boe is presented in Exhibits 114 and 115. The highest free cash flowing companies among the Integrated oils over the past three years include **Sinopec, Shell, Ecopetrol, Petrobras,** and **Equinor**. Top E&Ps include **Santos, Orca, Freehold, Tullow,** and **Lundin.**

Exhibit 114: Three-Year Average FCF – Integrated Oils ($/boe)



Source: BMO Capital Markets, Company Reports

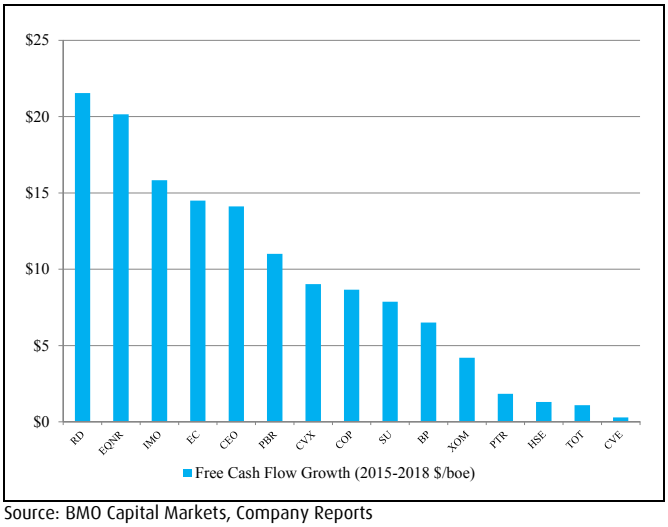
Exhibit 115: Three-Year Average FCF – E&Ps ($/boe)



Source: BMO Capital Markets, Company Reports

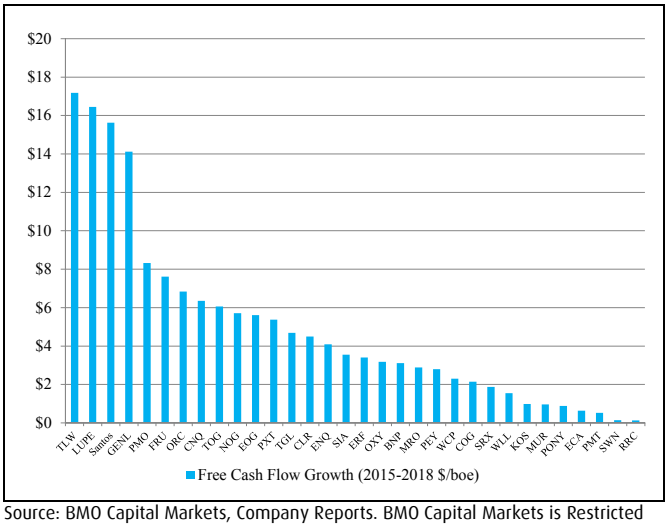
In Exhibits 116 and 117 we present a ranking of companies by positive FCF growth over the past three years ($ per boe 2018 versus 2015) to illustrate the companies with the strongest improvement in positive FCF since the epicenter of the downturn. Highest relative FCF generation is demonstrated by Integrateds **Shell, Equinor,** and **Imperial**, as well as E&Ps **Tullow, Lundin,** and **Santos.**

Exhibit 116: FCF Growth – Integrated Oils (2015-2018, $/boe)



Source: BMO Capital Markets, Company Reports

Exhibit 117: FCF Growth – E&Ps (2015-2018, $/boe)



Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana.

Relative Value for Given Returns

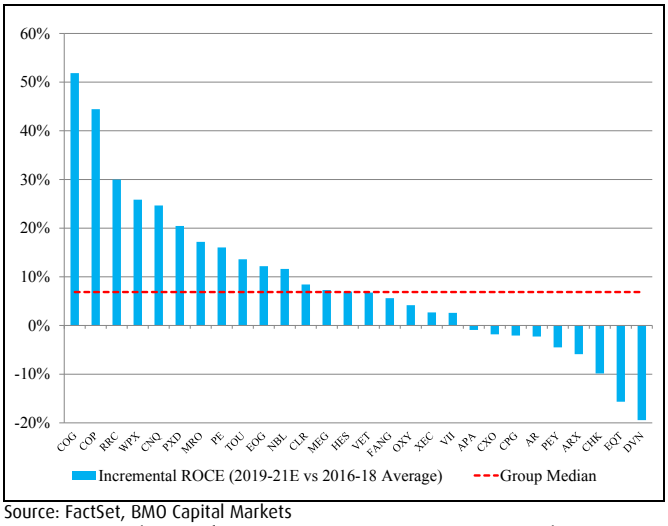
We believe stock selectivity based on cost structure and returns record is of paramount importance given the nature of the oil and gas industry cycle. In this section we illustrate how we expect cost structure to translate to incremental returns on capital for companies in the BMO Cost Study, and how our return expectations stack up on a relative value basis.

We believe that the trend and outlook for costs and returns is most important in establishing future stock market performance. Overall, companies that we expect to generate the strongest *incremental returns on new capital invested* over the 2019-2021 time frame as compared to the previous three-year average return include producers **Parex, Cabot, ConocoPhillips, Berry,** and **Range.** When viewed relative to 2020 market valuation, we believe that Integrateds **Total** and **Suncor,** as well as Senior Producers **Cabot, EOG,** and **Continental** offer compelling value given superior ROCE outlooks, while **Conoco, Canadian Natural,** and **Parsley** appear undervalued relative to peer average returns. Among SMID-cap producers, **Parex, Jagged Peak, Enerplus,** and **SRC** screen well for relative value against returns outlooks.

Senior Producers

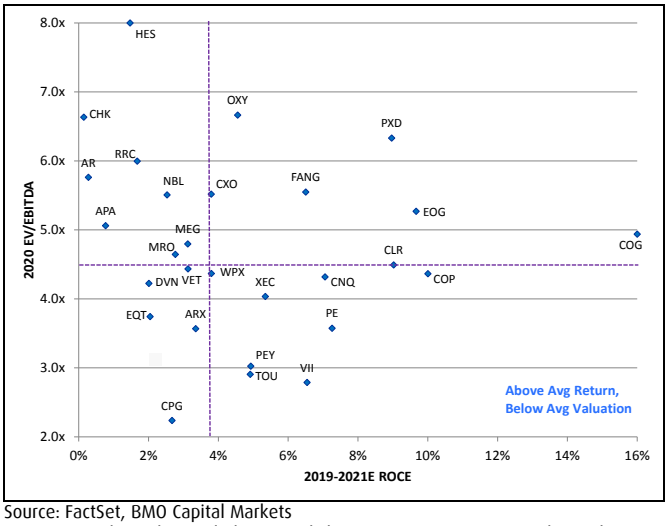
In Exhibit 118 we rank Senior producers by go-forward incremental ROCE, as implied by our 2018-2020 forecast ROCE compared to the 2017 three-year average. We forecast **Cabot, ConocoPhillips, Range, WPX,** and **Canadian Natural** to generate the strongest incremental returns on new capital over the next three years. Taking valuation into consideration, **Conoco, Canadian Natural, Parsley,** and **Cimarex** are attractively valued relative to their expected returns, while **Cabot, EOG,** and **Continental** reflect fair value for superior returns (Exhibit 119).

Exhibit 118: 2019-2021E Incremental ROCE – Senior Producers



Source: FactSet, BMO Capital Markets
Note: Incremental returns for companies posting negative ROCE over the 2016-18 period calculated assuming a comparable rate of 0%.

Exhibit 119: Normalized ROCE Outlook vs. Valuation - Seniors



Source: FactSet, BMO Capital Markets
Note: ROCE adjusted to exclude unusual charges against earnings, and cumulative impairments to capital since 2014

Exhibit 120 provides historical ROCE results for the Senior Producers group.

Exhibit 120: Historical and Forecast Returns on Capital (ROCE) – Senior Producers

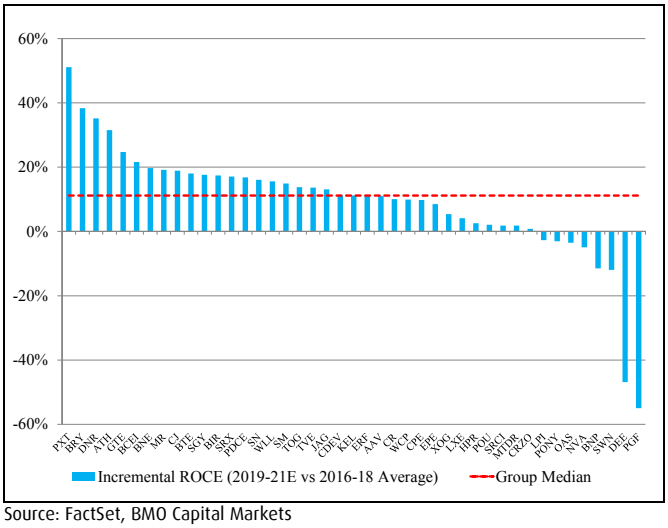
												Average		Forecast*		
		2009	2010	2011	2012	2013	2014	2015*	2016*	2017*	2018*	3-Yr*	5-Yr*	2019E	2020E	2021E
Apache	APA	-0.7%	12.3%	13.4%	5.0%	5.4%	-14.0%	-13.4%	-0.9%	3.0%	0.9%	1.0%	-2.3%	0.7%	0.3%	1.2%
Antero Resources	AR	0.0%	0.0%	0.0%	-6.9%	-0.9%	10.5%	12.5%	-3.1%	6.5%	-1.5%	0.8%	4.3%	1.2%	-0.3%	0.0%
Arc Resources	ARX	7.8%	8.7%	9.8%	5.6%	6.3%	11.0%	3.0%	4.0%	8.3%	5.2%	5.9%	6.9%	3.8%	2.7%	3.5%
Cabot	COG	7.2%	5.0%	5.3%	5.3%	9.5%	9.3%	0.3%	-1.7%	7.3%	12.2%	5.9%	7.6%	17.1%	15.5%	16.2%
Canadian Natural	CNQ	6.1%	6.9%	9.4%	6.4%	6.9%	10.0%	-0.8%	-0.2%	5.5%	5.3%	3.8%	4.3%	7.1%	5.9%	8.2%
Chesapeake	CHK	-21.1%	6.2%	5.3%	-2.9%	2.1%	4.7%	-0.9%	-3.7%	3.9%	4.0%	1.3%	1.4%	0.2%	-0.2%	0.4%
Cimarex Energy	XEC	-10.8%	22.5%	16.7%	9.5%	12.5%	10.1%	0.2%	1.2%	7.1%	10.1%	6.3%	5.7%	4.6%	4.7%	6.7%
Concho	CXO	0.0%	7.6%	13.0%	8.9%	5.5%	8.1%	2.6%	-3.7%	5.0%	9.4%	5.0%	5.5%	2.7%	3.4%	5.2%
ConocoPhillips	COP	6.3%	13.7%	15.4%	11.9%	14.4%	10.4%	-3.6%	-4.2%	4.2%	12.0%	3.4%	3.7%	9.7%	8.7%	11.6%
Continental Resources	CLR	5.8%	10.7%	15.9%	15.6%	11.5%	11.3%	1.0%	-1.8%	19.4%	9.7%	9.4%	8.7%	7.4%	8.3%	11.3%
Crescent Point	CPG	-20.0%	0.8%	3.6%	2.9%	1.8%	4.6%	0.3%	-2.3%	10.9%	1.4%	3.3%	3.5%	2.6%	2.6%	2.8%
Devon	DVN	-10.0%	21.6%	20.8%	0.1%	0.8%	6.3%	0.0%	1.8%	2.6%	8.0%	4.0%	3.7%	1.6%	1.7%	2.7%
Diamondback	FANG	0.0%	0.0%	0.0%	-8.9%	6.4%	11.4%	2.7%	4.1%	8.5%	6.7%	6.8%	6.7%	5.5%	6.1%	8.0%
Encana	ECA	8.5%	7.9%	1.9%	-15.9%	6.2%	29.2%	0.6%	0.6%	4.1%	7.0%	4.0%	4.5%	5.3%	3.5%	4.6%
EOG	EOG	5.4%	1.6%	7.6%	3.8%	12.2%	14.5%	-0.2%	-1.7%	13.9%	12.5%	8.6%	8.2%	8.9%	8.5%	11.6%
EQT	EQT	6.1%	7.0%	11.3%	5.5%	8.4%	8.0%	4.3%	-4.7%	12.3%	1.8%	5.2%	5.7%	2.4%	2.1%	1.6%
Hess	HES	5.6%	12.5%	8.7%	8.6%	19.1%	9.3%	-6.5%	-12.3%	-4.8%	-2.8%	-6.7%	-3.4%	0.5%	0.8%	3.1%
Marathon	MRO	5.3%	9.3%	12.0%	6.9%	7.1%	12.1%	-5.5%	-7.4%	-1.6%	5.2%	-1.2%	0.8%	3.1%	1.7%	3.5%
MEG Energy	MEG	1.8%	2.4%	3.6%	2.3%	-1.1%	10.6%	-10.9%	-1.4%	8.6%	1.1%	2.9%	2.0%	2.3%	3.6%	3.6%
Noble	NBL	-1.0%	9.6%	5.0%	9.7%	8.6%	9.3%	-7.4%	-4.1%	-1.2%	1.4%	-1.2%	-0.3%	0.4%	2.9%	4.3%
Occidental	OXY	10.4%	14.8%	19.2%	11.0%	12.9%	1.6%	1.3%	0.7%	3.9%	9.7%	4.8%	5.0%	4.8%	3.6%	5.2%
Parsley Energy	PE	na	na	na	na	6.8%	-13.8%	1.2%	0.1%	3.9%	6.3%	4.3%	2.9%	5.9%	6.8%	9.1%
Peyto	PEY	16.2%	13.3%	11.1%	6.8%	8.1%	12.0%	5.8%	5.1%	7.4%	5.8%	6.1%	7.3%	6.2%	3.9%	4.7%
Pioneer	PXD	1.2%	11.6%	13.9%	3.9%	-8.0%	10.9%	0.2%	-3.6%	9.8%	6.4%	4.6%	4.9%	8.6%	7.7%	10.6%
QEP Resources	QEP	19.7%	12.5%	6.9%	3.6%	3.9%	14.6%	-0.4%	-5.3%	3.5%	1.1%	0.0%	3.5%	0.0%	3.3%	3.4%
Range Resources	RRC	1.3%	-3.6%	2.8%	2.0%	4.5%	11.8%	1.7%	-4.4%	4.6%	-4.9%	-1.5%	0.7%	2.3%	1.3%	1.4%
Seven Generations	VII	0.0%	0.0%	0.0%	0.0%	1.1%	12.3%	-4.3%	1.9%	12.9%	8.0%	7.9%	6.9%	7.5%	5.1%	7.0%
Tourmaline	TOU	-0.3%	1.4%	2.4%	0.8%	4.3%	10.2%	1.4%	-0.2%	4.5%	4.5%	3.1%	3.3%	4.9%	4.5%	5.4%
Vermillion	VET	18.2%	9.3%	9.3%	10.6%	15.1%	10.1%	3.3%	-3.1%	2.8%	5.6%	2.3%	4.1%	2.4%	2.9%	4.1%
WPX Energy	WPX	na	-18.3%	-3.7%	-2.3%	-17.2%	4.2%	-4.0%	-5.6%	0.3%	4.0%	-0.2%	0.0%	2.7%	3.2%	5.4%
Senior Producers		**3.6%**	**7.9%**	**8.7%**	**5.0%**	**6.3%**	**10.1%**	**0.3%**	**-1.8%**	**4.8%**	**5.4%**	**3.9%**	**4.2%**	**3.4%**	**3.5%**	**4.7%**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana and QEP Resources.
Notes: *ROCE fully normalized to exclude unusual impairment charges against earnings and base capital.

Small and Intermediate Producers

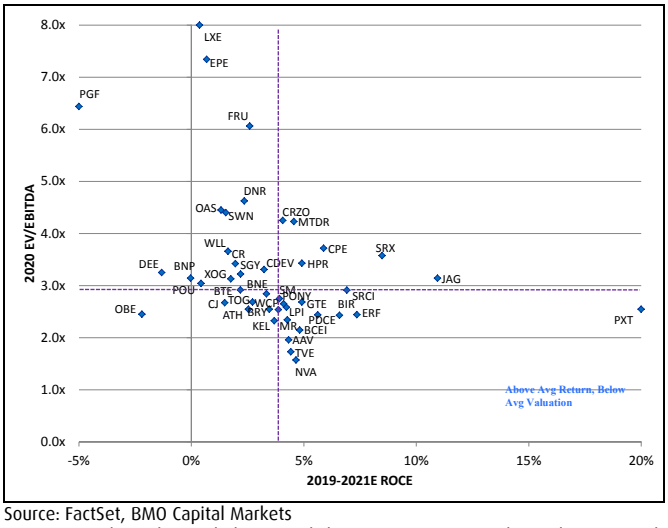
Among small producers we anticipate **Parex, Berry,** and **Denbury** to generate the largest incremental returns on new capital over the next three years (Exhibit 121). Relative to current market valuation, **Parex, Enerplus,** and **SRC** appear most attractively valued relative to expected returns (Exhibit 122), and investors get reasonable value for the higher returns of producers **Jagged Peak** and **Storm.**

Exhibit 121: 2019E-2021E Incremental ROCE – SMID Cap E&P



Source: FactSet, BMO Capital Markets

Exhibit 122: Forecast ROCE (2019E-21E) vs. Valuation – SMIDs



Source: FactSet, BMO Capital Markets
Note: ROCE adjusted to exclude unusual charges to earnings, and cumulative capital impairments since 2014

Exhibit 123 provides historical and forecast ROCE for the Small and Intermediate Producers.

Exhibit 123: Historical and Forecast Returns on Capital (ROCE) – SMID Producers

												Average		Forecast*		
		2009	2010	2011	2012	2013	2014	2015*	2016*	2017*	2018*	3-Yr*	5-Yr*	2019E	2020E	2021E
Advantage	AAV	-2.8%	-1.2%	-8.3%	-4.7%	0.7%	1.8%	2.1%	-0.6%	7.0%	1.2%	2.6%	2.4%	3.1%	4.5%	5.3%
Athabasca	ATH	0.0%	0.0%	10.0%	11.6%	-3.4%	-7.2%	-3.1%	-9.6%	-0.1%	-7.4%	-5.5%	-4.4%	2.0%	2.2%	3.4%
Baytex	BTE	8.7%	14.7%	14.4%	16.6%	10.5%	-1.9%	-1.5%	-2.7%	-0.7%	-0.3%	-1.1%	1.4%	3.0%	1.3%	2.2%
Birchcliff	BIR	na	1.6%	3.5%	2.2%	5.8%	7.9%	-2.8%	0.4%	6.8%	5.5%	4.2%	3.7%	5.7%	6.7%	7.4%
Bonanza Creek	BCEI	na	7.8%	3.1%	7.4%	8.9%	3.7%	-4.9%	-5.3%	0.2%	9.9%	1.5%	1.8%	3.8%	5.6%	5.0%
Bonavista	BNP	4.9%	8.5%	6.7%	2.9%	3.3%	2.5%	0.4%	-2.2%	3.0%	1.2%	0.7%	1.8%	-0.8%	0.1%	0.7%
Bonterra	BNE	39.6%	26.5%	18.1%	11.3%	11.2%	5.0%	0.2%	-0.6%	0.9%	2.3%	0.8%	1.6%	4.5%	1.8%	3.8%
Callon	CPE	na	14.2%	48.5%	2.4%	0.9%	6.0%	-11.2%	-1.3%	4.9%	8.6%	5.3%	3.9%	3.7%	7.5%	8.6%
Cardinal	CJ	na	na	na	na	10.7%	10.2%	1.6%	-6.8%	0.2%	1.9%	-1.2%	1.3%	-0.4%	1.6%	3.3%
Carrizo	CRZO	-19.7%	2.6%	4.6%	5.6%	4.6%	11.7%	1.1%	-0.6%	3.6%	9.4%	4.7%	5.1%	4.9%	4.0%	4.8%
Centennial	CDEV	na	na	na	na	na	na	-4.2%	-13.6%	2.7%	6.2%	0.1%	0.3%	2.3%	4.0%	5.9%
Crew	CR	-3.9%	-1.7%	-10.8%	2.1%	-4.3%	-25.3%	0.4%	-1.1%	2.9%	1.3%	1.1%	1.6%	2.4%	1.4%	2.1%
Delphi	DEE	-1.5%	0.7%	4.4%	-15.3%	-1.6%	0.2%	1.2%	-5.7%	3.9%	15.6%	5.7%	5.9%	-11.7%	3.2%	4.5%
Denbury Resources	DNR	-1.5%	7.6%	9.7%	8.4%	6.2%	8.4%	0.3%	-4.8%	2.4%	3.8%	0.5%	2.1%	2.2%	1.7%	1.9%
Montage	MR	na	na	na	na	-2.2%	-10.1%	-12.6%	-9.5%	2.3%	2.8%	-1.1%	-4.4%	4.1%	4.0%	3.7%
Enerplus	ERF	2.5%	3.5%	3.4%	-2.4%	2.1%	10.2%	-2.4%	4.6%	3.3%	10.7%	6.3%	5.5%	5.4%	7.1%	8.8%
EP Energy	EPE	na	na	na	na	5.9%	11.4%	3.3%	-1.5%	0.3%	0.1%	-0.3%	2.8%	0.6%	0.8%	0.7%
Extraction	XOG	na	na	na	na	na	na	4.0%	-13.8%	-1.5%	4.3%	-2.2%	-1.3%	0.2%	2.1%	2.4%
Freehold	FRU	9.3%	11.9%	17.8%	14.1%	16.9%	15.1%	3.4%	-0.8%	1.1%	1.8%	0.7%	3.4%	0.7%	2.7%	4.4%
Gran Tierra	GTE	2.2%	6.1%	16.0%	9.8%	11.2%	-15.4%	-2.4%	-0.8%	-3.5%	4.8%	0.3%	0.1%	4.3%	5.3%	5.1%
Highpoint	HPR	na	na	na	na	na	na	-1.1%	-6.5%	-3.4%	7.6%	0.5%	0.7%	4.3%	5.3%	5.1%
Jagged Peak	JAG	na	na	na	na	na	na	-0.5%	-1.7%	7.6%	14.4%	9.4%	8.4%	8.2%	10.1%	12.2%
Kelt	KEL	na	na	na	na	-1.5%	2.1%	-8.1%	-5.2%	-1.3%	1.4%	-1.5%	-2.4%	1.9%	2.8%	6.4%
Laredo Petroleum	LPI	0.0%	12.1%	11.7%	6.7%	8.3%	12.3%	3.3%	-1.5%	8.3%	8.7%	5.3%	6.1%	4.5%	4.3%	4.3%
Leucrotta	LXE	na	na	na	na	na	4.9%	7.6%	-4.8%	-3.3%	0.0%	-2.4%	0.6%	0.7%	0.2%	0.2%
Matador	MTDR	na	na	-2.5%	-6.6%	7.0%	10.9%	-0.4%	-2.4%	6.1%	9.6%	5.7%	5.3%	4.1%	4.1%	5.7%
NuVista	NVA	1.3%	0.3%	-11.0%	-21.0%	-7.5%	-6.3%	-8.9%	0.9%	9.8%	9.9%	7.8%	3.8%	1.2%	4.5%	8.2%
Oasis Petroleum	OAS	-8.4%	-9.6%	13.8%	14.0%	10.3%	14.1%	2.2%	-3.0%	4.0%	5.1%	2.3%	4.0%	1.6%	1.4%	2.7%
Painted Pony	PONY	-4.0%	1.3%	2.6%	-11.3%	-0.9%	-2.1%	-0.4%	-3.4%	11.0%	4.1%	4.9%	4.1%	2.8%	4.3%	5.2%
Paramount	POU	-10.4%	-12.1%	-17.3%	-2.5%	-0.8%	-0.6%	-10.7%	9.2%	-22.5%	-9.2%	-11.4%	-8.5%	-2.3%	0.5%	3.1%
Parex	PXT	na	na	3.9%	8.6%	4.3%	-13.5%	1.7%	1.3%	17.6%	34.8%	20.1%	14.9%	29.8%	32.3%	29.2%
PDC Energy	PDCE	-6.9%	4.2%	3.8%	-7.2%	1.1%	11.2%	3.1%	-5.8%	3.7%	7.6%	2.4%	4.0%	3.7%	6.5%	9.0%
Pengrowth	PGF	3.4%	7.1%	3.4%	1.5%	-4.3%	-9.8%	-2.9%	-4.3%	-0.7%	-2.6%	-2.6%	0.1%	-4.8%	-6.8%	-6.9%
Obsidian	OBE	-0.8%	-1.8%	7.9%	2.6%	-6.2%	-16.5%	-5.5%	-4.9%	-1.6%	-2.5%	-3.0%	-2.6%	-1.9%	-1.5%	-1.1%
Sanchez Energy	SN	na	na	2.2%	-7.3%	4.0%	0.2%	-14.2%	-5.5%	1.6%	3.1%	0.6%	-0.6%	-0.4%	5.8%	5.4%
SM Energy	SM	-6.1%	15.4%	16.3%	-0.6%	7.2%	18.9%	-0.8%	-8.5%	0.7%	10.0%	0.7%	3.6%	1.5%	3.5%	6.6%
Southwestern	SWN	-0.7%	16.6%	13.9%	-13.8%	14.2%	11.3%	1.6%	-2.6%	6.6%	5.0%	3.1%	4.1%	2.2%	1.2%	1.1%
Storm	SRX	na	na	na	na	-10.7%	2.1%	-1.0%	-7.8%	9.3%	8.6%	3.8%	4.0%	8.5%	8.6%	8.4%
Surge	SGY	-0.9%	-4.6%	1.2%	-9.5%	-0.2%	-1.4%	-1.9%	-1.5%	1.7%	0.4%	0.2%	1.6%	1.8%	2.3%	3.6%
SRC Energy	SRCI	na	na	na	-32.5%	6.8%	10.6%	6.0%	-0.5%	9.6%	11.9%	8.6%	8.5%	7.7%	6.8%	8.1%
Tamarack Valley	TVE	0.0%	-16.8%	-6.2%	-3.1%	9.2%	-6.7%	0.5%	-3.6%	1.0%	4.6%	1.4%	2.1%	2.6%	4.0%	7.8%
TORC	TOG	-5.6%	0.0%	-28.5%	-5.9%	-0.9%	0.9%	-2.2%	-2.1%	1.1%	2.4%	0.6%	0.7%	1.9%	2.4%	3.9%
Whiting Petroleum	WLL	-1.7%	9.2%	12.9%	9.1%	7.5%	1.6%	-0.6%	-6.3%	-1.4%	5.4%	-0.8%	0.4%	0.9%	1.4%	2.6%
Whitecap Resources	WCP	na	na	8.1%	6.9%	3.3%	19.1%	-1.3%	0.0%	3.3%	4.9%	2.9%	4.9%	2.1%	3.6%	5.9%
Small and Mid-Cap Producers		**-0.8%**	**3.5%**	**4.4%**	**2.2%**	**4.0%**	**2.3%**	**-0.6%**	**-2.7%**	**2.4%**	**4.7%**	**0.8%**	**2.1%**	**2.3%**	**3.6%**	**4.7%**

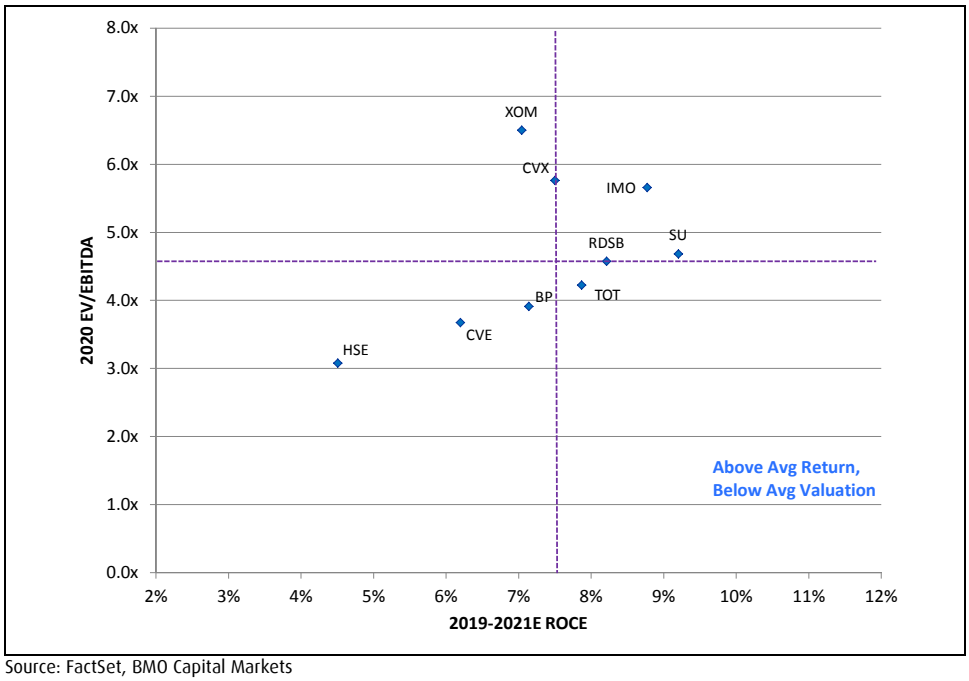
Source: BMO Capital Markets, Company Reports

Notes: *ROCE fully normalized to exclude unusual impairment charges against earnings and base capital.

Integrated Oils

Among the global Integrated oils currently under coverage, **Total** and **Suncor** offer the best value relative to their above average returns on capital, in our view. Cenovus and Husky offer considerable discounts to peers, which we believe reflects a lower ROCE outlook.

Exhibit 124: Forecast ROCE (2019-21E) vs. Valuation – Integrated Oils and Majors



Source: FactSet, BMO Capital Markets
Note: ROCE adjusted to exclude unusual charges against earnings, and cumulative impairments to capital since 2014

Exhibit 125 provides historical ROCE results for the Integrated Oils group.

Exhibit 125: Historical and Forecast Returns on Capital (ROCE) – Global Integrated Oils

												Average		Forecast*		
		2009	2010	2011	2012	2013	2014	2015*	2016*	2017*	2018*	3-Yr*	5-Yr*	2019E	2020E	2021E
Cenovus	CVE	24.7%	9.5%	13.5%	9.2%	6.5%	7.0%	0.7%	-2.1%	9.1%	4.1%	5.0%	5.1%	5.1%	6.5%	6.9%
Husky Energy	HSE	9.2%	6.7%	12.9%	10.6%	8.6%	5.4%	0.1%	4.4%	4.3%	4.7%	4.4%	4.2%	4.5%	3.9%	5.1%
Imperial Oil	IMO	16.7%	20.5%	24.7%	21.8%	12.1%	12.9%	3.5%	1.9%	1.9%	8.5%	4.1%	6.0%	9.7%	8.5%	8.1%
Suncor	SU	2.0%	7.9%	10.3%	6.3%	9.9%	7.1%	3.1%	4.8%	6.5%	7.6%	6.3%	6.2%	8.6%	8.8%	10.3%
Canadian Integrateds		**12.9%**	**8.7%**	**13.2%**	**9.9%**	**9.3%**	**7.1%**	**1.9%**	**3.2%**	**5.4%**	**6.1%**	**4.7%**	**5.5%**	**6.8%**	**7.5%**	**7.5%**
BP	BP	15.1%	-2.5%	20.7%	8.5%	16.4%	2.9%	2.2%	1.2%	3.6%	7.2%	4.1%	4.5%	7.4%	6.6%	7.4%
Chevron	CVX	11.8%	20.4%	25.9%	22.0%	15.4%	12.0%	4.1%	0.9%	4.1%	8.4%	4.4%	5.9%	6.8%	7.2%	8.6%
CNOOC	CEO	21.0%	31.5%	34.7%	27.6%	17.9%	14.7%	5.6%	2.6%	7.5%	12.5%	7.5%	8.7%	NR	NR	NR
Eni	ENI	9.0%	11.1%	11.4%	12.3%	8.6%	1.6%	-7.0%	-3.0%	5.1%	7.7%	3.3%	1.0%	NR	NR	NR
ExxonMobil	XOM	18.5%	22.1%	24.9%	26.4%	17.8%	16.7%	8.2%	5.0%	7.3%	9.5%	7.3%	9.3%	5.8%	6.8%	8.5%
Petrobras	PBR	8.2%	6.0%	5.3%	3.4%	3.7%	-2.6%	4.7%	6.4%	1.9%	7.3%	5.1%	4.9%	NR	NR	NR
PetroChina	PTR	11.7%	13.5%	11.4%	9.6%	9.7%	7.6%	3.3%	1.7%	3.7%	6.1%	3.8%	4.5%	NR	NR	NR
Repsol	REP	6.8%	16.7%	9.0%	6.7%	1.8%	6.5%	2.8%	6.4%	5.8%	7.7%	6.6%	6.0%	NR	NR	NR
Rosneft	ROSN	12.3%	18.1%	16.3%	14.2%	15.5%	9.1%	8.3%	4.6%	6.1%	10.4%	7.1%	7.8%	NR	NR	NR
Royal Dutch Shell	RD	9.0%	12.7%	18.0%	14.4%	9.3%	9.4%	5.8%	3.9%	8.2%	8.8%	7.3%	7.7%	7.9%	7.7%	9.0%
Sinopec	SNP	11.7%	13.3%	13.1%	10.5%	9.1%	5.6%	4.6%	8.3%	9.6%	9.0%	9.0%	7.4%	NR	NR	NR
Equinor	EQNR	6.3%	12.6%	23.9%	17.9%	10.4%	4.4%	-2.6%	-2.9%	6.0%	11.0%	4.7%	3.4%	NR	NR	NR
Total	TOT	15.2%	17.4%	18.5%	14.0%	11.2%	4.0%	7.6%	7.1%	8.3%	9.7%	8.4%	7.8%	7.6%	7.6%	8.4%
Global Integrateds		**11.7%**	**13.5%**	**18.0%**	**14.0%**	**10.4%**	**6.5%**	**4.6%**	**3.9%**	**6.0%**	**8.8%**	**6.6%**	**6.0%**	**7.4%**	**7.2%**	**8.5%**

Source: BMO Capital Markets, Company Reports
Notes: *ROCE fully normalized to exclude unusual impairment charges against earnings and base capital.

Study Methodology and Limitations

The primary intent of the Global Cost Study is to estimate what commodity price levels are required to recover all of the industry's costs including a 10% return on capital. The data used in this study has been taken from the regulatory filings of the individual companies. All of the large-cap companies (Senior Producers and Integrateds and Supermajors) as well as the U.S. Producers in this study disclose annual financial results under U.S. Securities and Exchange Commission (SEC) standards. Our primary source of data for these companies are the SEC statements prepared in accordance to the Financial Accounting Standards Board (FASB) Standard No. 69, Disclosures about Oil and Gas Producing Activities. These supplemental disclosures outline annual changes in reserve quantities, costs incurred in exploration and development activities (capital expenditures) and financial results of operations (income statement) for upstream oil and gas producing activities. For companies that do not file U.S. Securities Exchange Commission (SEC) compliant information, particularly the Canadian Junior Producers, we have used reported financial statements and related reserve disclosures. One limitation of this approach is that companies use different reserve evaluators and employ various accounting standards. As a result, company-to-company variations in results may not be fully comparable or representative. In addition, prior to 2009, the SEC regulations prevented companies with oil sands mining operations to report reserves and financial results along with conventional upstream operations. As a result, comparable supplemental information on oil sands mining operations is not available historically with the same level of detail. We have included historical results from oil sands mining operations for those companies with material exposure based on the data available from other public sources. Starting in 2009, the SEC has mandated that all companies with oil sands mining operations report related results of operations, costs incurred, and reserve information. Given the "lumpy" nature of reserve additions and spending for oil sands mining, we also "smooth" reserve replacement costs used in the calculation of breakeven oil prices by using reported DD&A charges for the mining segment as a proxy for annual F&D cost. We believe this is a more reasonable representation of the normalized cost structures of these companies.

Net proved reserves, net production, and reported financial information (revenues, costs, income taxes) are used to calculate per-barrel netback components for each individual company, as well as the industry average. This reported cost information provides the basis for our calculation of breakeven oil price; that is, the oil price required to cover all costs and provide a 10% return on investment. The calculation of breakeven oil price incorporates several important components: annual per-barrel cash costs, reserve replacement costs, effective income tax rates, and reserve life index. These elements enable us to determine the required per-barrel return on capital component. The sum of these components is the "breakeven oil price." We make a further adjustment to make results across groups and between companies more comparable by taking into consideration the quality of the product that each company produces (e.g., light oil, heavy oil, natural gas). This is accomplished by adding a corporate quality differential to each company's breakeven, which we calculate as the difference between reported net revenue and a benchmark basket price that is based on the company's oil/gas production split at Brent crude oil and Henry Hub natural gas prices.

It is important to note that single-year reserve replacement costs have a significant impact on the calculation of breakeven oil price, as it determines not only the level of revenue needed to cover capital costs per barrel, but also determines the quantity of reserves that can be produced to generate cash flow. So high reserve replacement costs in a particular year can result in a materially higher breakeven oil price calculation, or can lead to results that are not meaningful. For example, negative reserve replacement costs will not generate a meaningful reserve assumption, and so will also not generate a positive return on capital. In these cases, the reserve replacement cost assumption used to calculate breakeven oil prices have been

adjusted. Non-meaningful reserve replacement costs are generally replaced with either reserve replacement costs excluding the impact of reserve revisions, or a three- or five-year average reserve replacement cost figure.

While some companies have historically reported detailed financial results for equity-accounted investments, others have disclosed only bottom-line equity interest profit in a separate note. The SEC has changed reporting requirements for the details of equity affiliate results, mandating that they be disclosed from 2009 forward. However, historical equity interest results (including related production volumes) for BP, Royal Dutch, Total, and ExxonMobil have been excluded from company and industry netback and breakeven calculations prior to 2009 as a result of a lack of disclosure. Equity interest results for these companies are, however, included in both capital expenditures and reserve quantities used to calculate reserve replacement costs.

It is possible in any given year that the relationship between the worldwide, North America and International breakeven oil price calculations may not appear to be weighted correctly. For example, in a given year, both North America and International breakeven prices could be either smaller or larger than that of the worldwide implied price. This anomaly in the data occurs because of our choice to use reserve replacement costs in determining capital requirements under our breakeven simulation—while worldwide per-barrel cost figures and tax rates are weighted by production, reserve replacement costs are weighted by reserve additions and Reserve Life Index (RLI) is weighted by total reserves.

Peer Groupings

The Global Cost Study is segmented into four primary peer groupings: the Integrated Oils and Supermajors, the North American Senior Producers, the North American Small/Intermediate Producers and the International Producers. Peer groups are further separated by operating region and company origin. Unless otherwise noted, all reserve and production information is presented net of royalties, and financial figures are presented in U.S. dollars. “Worldwide” or “Industry” averages include the results of all companies and peer groupings in this study.

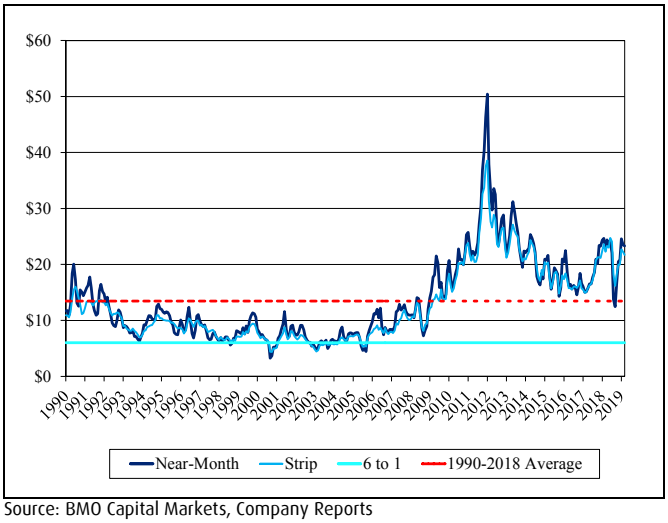
The Integrated Oils and Supermajors maintain worldwide upstream operations and downstream operations located for the most part in Europe and North America. Companies in this grouping include Integrateds Cenovus, Husky, Imperial, and Suncor, as well as Supermajors BP Plc, Chevron, CNOOC, ConocoPhillips, Ecopetrol, EniSpA, Equinor (Statoil), ExxonMobil, Pemex, Petrobras, PetroChina, Repsol, Rosneft, Royal Dutch, Sinopec, and Total. The North American Senior Producers maintain domestic and international operations, albeit to a lesser extent than the Integrateds and Supermajors. The North American Senior Producers include Apache, Anadarko, Antero, ARC, Cabot, Canadian Natural, Chesapeake, Cimarex, Concho, Continental, Crescent Point, Devon, Diamondback, Encana (Restricted), Energen, EOG, EQT, Hess, Marathon, MEG, Murphy, Newfield, Noble, Occidental, Peyto, Pioneer, QEP (Restricted), Range, Seven Generations, Southwestern, Tourmaline, Vermilion, Whiting, and WPX. Our study also includes the historical results of 31 Canadian Junior/Intermediate Producers, 28 U.S. Microcaps, and 23 International Producers.

To facilitate comparisons in this report, all reserves and production information have been presented after royalties (net) and in U.S. dollars. For those companies that report volumes before royalties, net production and reserves information has been estimated based on annual average royalty rates.

The 6:1 Distortion and Our "Realized Ratio" Methodology

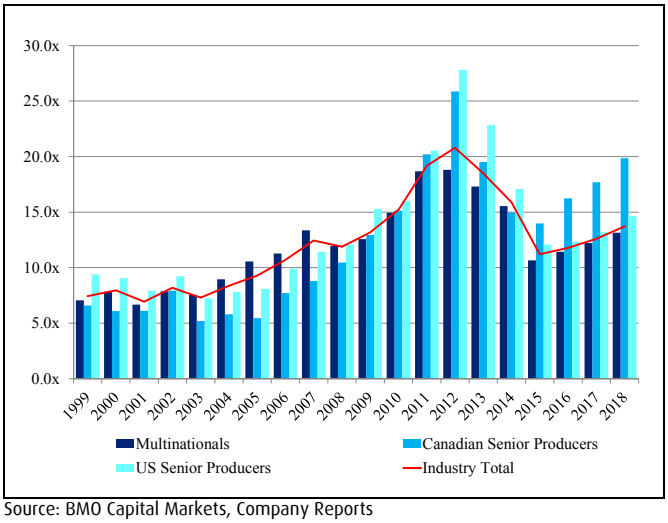
The application of the commonly used 6:1 gas-to-oil ratio has some important implications when presenting data on a per-barrel of oil-equivalent basis. While the 6:1 ratio represents the technical energy equivalent of crude oil and natural gas, it has rarely held when it comes to the market value of the commodities. This is due to differing supply and demand dynamics; specifically, crude oil is primarily used as a transportation fuel whose price is determined by the dynamics of gasoline and diesel markets, while natural gas is used in power generation and competes with coal. Since 2003, the industry realized gas-to-oil ratio has decoupled considerably, reaching a peak 24:1 in 2012 and currently sits around 15:1 (Exhibit 126).

Exhibit 126: WTI-Henry Hub Ratio



Source: BMO Capital Markets, Company Reports

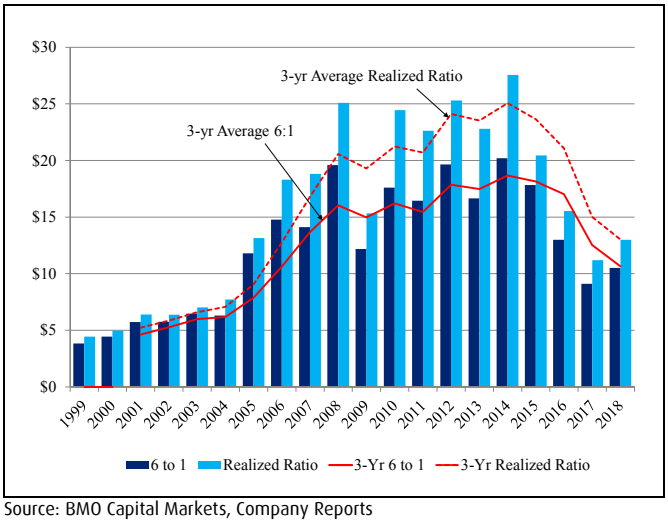
Exhibit 127: Realized Price Ratio – (Liquids Price / Gas Price)



Source: BMO Capital Markets, Company Reports

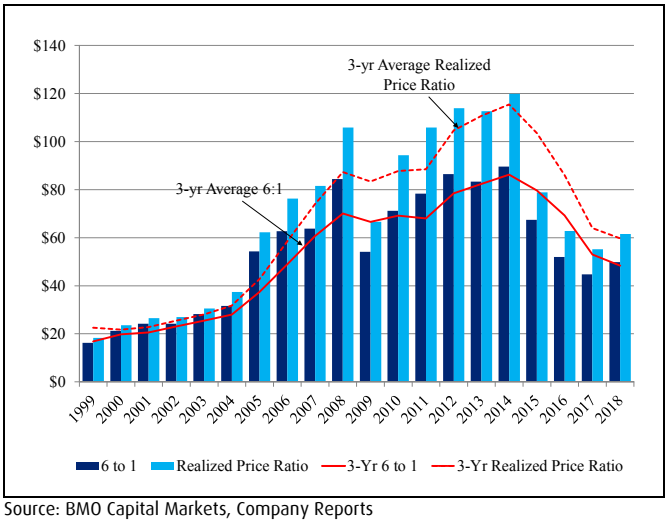
As shown in Exhibits 128 and 129, the impact of using a 6:1 ratio to convert gas reserves to oil-equivalent, as compared to using the realized price ratio, can be significant. In 2018, reserve replacement costs of $10.51/boe using a 6:1 gas-to-oil ratio equates to $13.00/boe under the realized market-equivalency method, while worldwide supply cost increases from $49.82/boe to a more realistic $61.52/boe.

Exhibit 128: Global F&D Cost ($/Boe) – 6:1 vs. Realized Ratio



Source: BMO Capital Markets, Company Reports

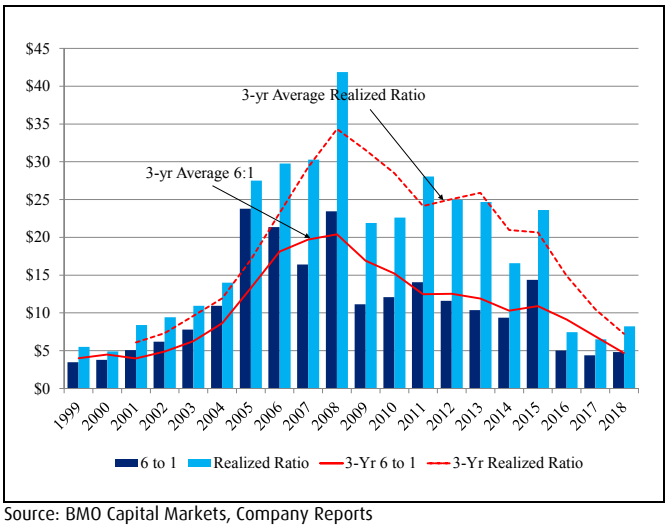
Exhibit 129: Required Brent Oil Price ($/Boe) – 6:1 vs. RR



Source: BMO Capital Markets, Company Reports

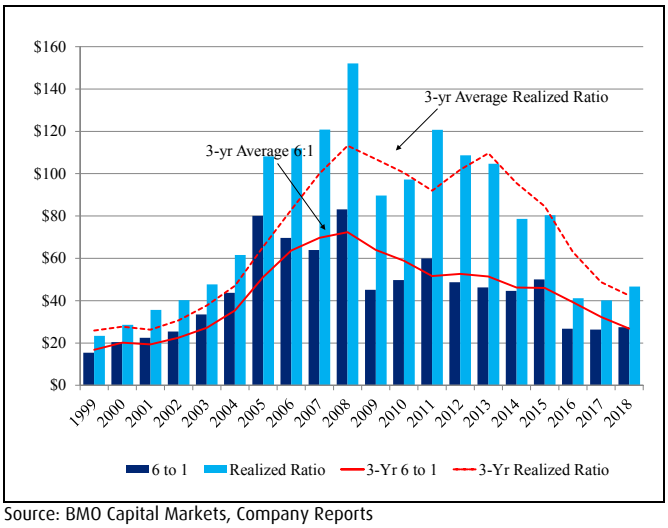
The impact of this reporting standard distortion is much more apparent for gas-weighted producers—pure play natural gas producers are effectively adding reserves that hold an oil-equivalent market value of less than half of what is suggested by energy equivalency. The result is that true "oil market-adjusted" reserve replacement costs are significantly higher than what is implied by a 6:1 analysis, as illustrated in Exhibits 130 and 131.

Exhibit 130: Gas-Weighted F&D Cost ($/Boe) – 6:1 vs. Realized Ratio



Source: BMO Capital Markets, Company Reports

Exhibit 131: Gas-Weighted Supply Costs ($/Boe) – 6:1 vs. Realized Ratio



Source: BMO Capital Markets, Company Reports

We rank companies in our study according to their implied oil-equivalent (boe) breakeven using the realized ratio methodology discussed above. We further split peers into oil-weighted and gas-weighted subgroups for more appropriate comparisons based on their primary sales product. For gas-weighted companies, we divide the oil-equivalent result by the realized oil:gas price ratio to convert to an Mcfe basis (thousand cubic feet equivalent). Rankings under these two methodologies may not necessarily match because of variances in price realizations for oil and gas and its impact on the quality differential.

Oil-equivalent breakevens effectively calculate the liquids price (oil price) required to make returns on capital, *taking into consideration the price a company receives for its natural gas and related production weight*. Vice versa, our gas-equivalent breakevens effectively show the gas price required to generate returns, considering the liquids price realizations of a company and related production weight. Exhibits 132-133 list the ranking of all companies in the study on the basis of Brent oil-equivalent supply cost using our realized ratio methodology, Exhibits 155-156 list the total rankings on the basis of industry standard 6:1 oil:gas ratio for reference.

Exhibit 132: Oil-Equivalent Supply Costs Rankings, Realized Gas:Oil Ratio ($/Boe, Brent)

Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
1	Santos	Santos	118.56	97.51	137.35	260.34	304.15	384.22	338.71	414.82	28.93	31.58	39.80	35.17	76.17
2	Southwestern	SWN	71.57	60.26	72.94	114.38	144.07	82.50	60.23	42.89	38.87	21.76	38.23	35.26	41.63
3	Chesapeake	CHK	187.42	114.10	114.08	130.39	168.16	166.49	110.56	59.40	28.17	51.09	45.01	35.77	58.59
4	Parex	PXT	-	-	-	147.20	99.24	79.86	75.23	49.18	37.01	37.05	45.92	39.67	47.21
5	Antero	AR	-	-	-	-	91.91	97.76	61.99	55.33	33.86	39.00	52.94	40.88	46.21
6	Seven Generations	VII	-	-	-	-	-	133.10	67.41	195.06	25.86	63.67	90.54	41.96	44.04
7	Range	RRC	125.59	49.72	54.60	85.20	74.45	63.12	60.62	38.08	52.01	33.92	41.31	42.61	45.22
8	EQT Corporation	EQT	121.34	58.03	74.19	199.19	90.53	40.94	51.75	38.05	32.53	64.91	41.72	43.72	44.07
9	Storm	SRX	-	-	-	195.61	156.57	104.57	74.18	54.81	68.25	54.18	33.33	45.28	79.96
10	Encana	ECA	83.81	83.50	61.19	102.61	109.25	92.48	101.18	55.46	46.63	47.68	46.85	45.32	59.31
11	Northern Oil	NOG	-	59.99	86.99	101.76	114.33	104.22	115.31	57.76	45.46	39.35	53.55	45.73	59.34
12	Vermilion	VET	97.42	62.89	89.66	127.60	87.09	57.08	102.68	51.79	32.21	51.83	53.25	45.88	54.21
13	Kelt	KEL	-	-	-	-	-	128.78	91.24	89.12	38.19	43.11	59.11	46.64	62.00
14	Montage	MR	-	-	-	-	-	661.89	144.40	97.13	46.00	47.26	48.76	47.14	73.21
15	Bellatrix	BXE	-	78.62	73.50	79.62	99.29	63.71	92.10	96.96	32.81	53.74	58.44	47.95	68.32
16	NuVista	NVA	91.62	50.94	71.52	149.89	102.72	95.30	84.65	76.27	38.11	48.43	58.73	48.48	61.06
17	Cimarex	XEC	137.40	43.61	48.46	88.72	102.63	95.45	78.40	59.23	52.90	43.20	54.92	48.71	57.30
18	Peyto	PEY	89.91	15.19	40.12	54.30	103.31	119.81	56.04	51.75	50.71	51.49	48.34	49.14	50.60
19	Valeura	VLE	-	-	410.71	56.75	126.30	98.24	27.05	24.55	40.69	34.95	78.40	49.45	35.24
20	Eni S.P.A.	ENI	100.14	80.20	74.19	140.57	99.79	114.60	137.48	53.74	63.36	66.97	36.28	49.50	62.18
21	Comstock	CRK	47.50	74.35	65.52	57.66	118.45	159.97	140.83	130.88	52.02	52.44	43.49	49.50	95.58
22	Bonavista	BNP	77.35	60.43	62.45	62.74	105.84	106.49	80.80	62.86	34.54	60.18	55.97	49.92	59.42
23	Husky	HSE	125.16	52.54	90.22	108.38	174.47	120.40	101.67	73.55	43.43	49.08	58.49	50.21	64.82
24	Tourmaline	TOU	-	-	90.00	107.22	104.29	113.10	56.47	44.79	46.62	48.70	55.14	50.24	56.02
25	Equinor	EQNR	179.70	81.28	91.03	108.45	97.00	107.19	157.36	89.73	78.56	40.40	42.90	50.46	71.22
26	Crew	CR	107.56	49.15	66.94	91.22	97.53	92.68	71.53	68.02	33.22	70.65	62.90	50.56	61.81
27	Berry	BRY	118.53	58.23	91.02	154.70	162.84	131.82	110.06	98.19	69.38	36.17	45.01	51.08	71.68
28	Chevron	CVX	82.52	133.77	204.10	94.16	95.29	159.38	146.27	101.81	66.99	44.58	46.81	51.93	77.04
29	Laredo	LPI	-	-	36.86	113.76	86.51	106.71	156.81	93.97	35.71	45.52	89.04	52.83	80.79
30	EOG Resources	EOG	87.06	65.59	93.61	113.05	120.06	82.08	73.97	68.94	68.98	46.89	52.64	53.15	61.45
31	Jagged Peak	JAG	-	-	-	-	-	-	-	48.40	37.14	49.44	62.45	53.37	69.58
32	Cabot	COG	158.11	148.93	100.97	103.16	119.19	76.25	88.77	80.59	58.37	50.53	55.56	54.14	66.22
33	Birchcliff	BIR	72.80	42.67	115.10	101.19	153.00	107.29	73.60	46.82	48.01	44.27	68.93	54.36	56.60
34	QEP Resources	QEP	127.90	40.78	58.51	28.34	122.31	111.72	109.77	44.78	45.88	61.75	56.01	54.43	63.36
35	Torc	TOG	81.64	63.73	100.14	143.07	111.56	127.92	89.40	70.98	53.48	46.39	67.75	54.61	64.20
36	Premier	PMO	107.72	48.42	102.95	89.03	135.66	99.19	275.21	34.85	65.33	49.27	49.40	54.68	93.63
37	Pioneer	PXD	248.52	156.78	58.00	103.44	152.64	111.96	112.12	71.27	58.31	44.41	66.62	55.26	70.02
38	Noble	NBL	167.57	92.17	75.20	195.73	159.33	95.47	186.11	115.22	45.46	53.09	71.69	55.42	74.41
39	Highpoint	HPR	82.70	32.00	41.35	66.93	139.01	68.34	108.46	115.61	48.04	39.68	78.83	55.46	76.69
40	Continental	CLR	129.46	36.96	67.43	87.02	90.03	78.67	95.29	52.72	83.99	66.31	48.27	56.05	67.97
41	Whitecap	WCP	-	-	123.56	102.21	126.21	96.52	93.58	65.29	46.47	52.91	73.51	56.47	64.83
42	ConocoPhillips	COP	100.44	67.92	58.64	109.78	99.66	116.36	144.27	132.91	75.78	50.16	47.12	57.52	90.71
43	Perpetual	PMT	95.97	129.06	130.54	139.92	87.17	96.61	61.18	68.27	56.25	58.34	49.67	57.59	60.98
44	Canadian Natural	CNQ	64.74	59.23	73.32	163.05	119.94	105.99	90.05	62.08	57.07	59.05	54.02	57.59	60.90
45	Matador	MTDR	-	-	-	115.87	147.86	83.81	111.94	76.38	55.84	48.11	68.89	57.90	65.68
46	Enerplus	ERF	117.86	198.20	194.61	98.20	144.73	105.97	83.61	53.96	54.66	55.17	59.11	57.94	63.53
47	Arc Resources	ARX	75.33	64.56	91.65	121.66	119.88	122.44	118.62	54.90	44.72	64.91	66.63	58.25	70.55
48	Hess Corp.	HES	91.76	81.73	85.48	150.58	129.87	159.61	140.60	130.13	70.16	48.43	65.83	58.44	90.60
49	Cardinal	CJ	-	-	-	-	-	186.25	106.40	65.02	47.96	60.13	58.95	58.86	69.46
50	Bonterra	BNE	59.76	33.62	66.31	195.70	94.22	55.58	69.16	64.94	37.49	53.31	74.40	58.89	58.14
51	Devon	DVN	92.68	45.52	84.10	116.13	148.48	132.63	124.24	135.65	61.39	50.46	67.39	59.19	84.05
52	Murphy Oil	MUR	101.12	65.53	94.21	113.20	121.76	102.47	110.81	77.13	55.35	61.89	64.20	59.30	75.57
53	Approach	AREX	86.20	57.16	50.75	103.95	127.64	123.18	101.02	62.57	31.77	43.09	100.98	59.68	69.36
54	Bonanza Creek	BCEI	-	-	-	119.99	155.21	94.73	126.85	69.01	44.75	66.79	72.15	59.95	77.29
55	WPX Energy	WPX	-	-	92.47	79.91	173.46	126.44	130.78	107.55	52.69	60.76	63.90	59.96	83.04
56	Pengrowth	PGF	82.49	79.02	123.56	99.22	144.52	99.76	121.71	115.86	39.31	51.87	95.70	60.02	89.21
57	Ultra	UPL	93.96	78.94	126.55	129.62	84.51	81.08	51.60	36.65	46.99	38.60	96.52	60.29	54.85
58	Oasis	OAS	-	50.10	62.44	88.78	84.03	112.50	96.37	48.77	59.76	50.52	86.19	60.42	64.48
59	Sinopec	SNP	170.07	96.63	94.82	117.31	124.59	132.16	119.79	61.00	84.38	50.55	48.83	60.77	71.86
60	Apache	APA	148.09	85.80	98.30	130.71	178.26	108.48	124.86	109.46	60.64	52.39	68.68	61.84	81.90
61	Unit	UNT	96.88	68.29	100.63	110.49	116.38	102.62	96.01	75.65	67.90	46.74	72.23	62.95	72.68
62	Surge	SGY	102.00	50.37	87.25	115.15	126.25	142.35	98.81	61.90	49.03	55.14	84.30	62.96	70.26
63	Occidental	OXY	116.90	48.56	91.75	173.91	132.44	93.20	107.23	110.71	59.64	55.19	76.09	63.06	82.19
64	Anadarko	APC	115.84	80.01	86.64	99.79	122.18	133.59	95.76	119.60	72.68	61.45	58.41	63.16	77.91
65	Transglobe	TGL	89.47	43.39	64.61	81.80	84.04	112.24	104.92	143.69	68.24	59.66	62.00	63.40	101.00
66	BP PLC	BP	74.74	59.75	80.02	120.46	156.59	77.97	154.72	105.22	55.59	64.12	71.90	63.46	78.31
67	Royal Dutch Shell	RD	95.92	43.82	75.73	104.18	147.01	128.77	393.45	223.47	97.47	38.18	62.55	63.68	95.93
68	Petrobras**	PBR	198.78	58.28	73.99	108.10	118.13	117.85	112.23	119.24	140.64	56.63	55.48	64.08	95.99
69	Carrizo	CRZO	152.18	139.86	105.55	130.91	146.21	102.25	91.80	72.39	64.43	65.78	64.07	64.40	71.64
70	Madalena	MVN	547.83	159.07	264.25	334.72	211.67	175.40	79.94	93.32	44.68	83.26	66.60	65.30	74.35
	Worldwide Average		**12.23**	**12.09**	**12.25**	**12.79**	**12.97**	**13.61**	**14.20**	**12.93**	**12.51**	**12.97**	**13.19**	**12.89**	**13.16**

Source: BMO Capital Markets, Company Reports BMO Capital Markets is Restricted on Encana and QEP Resources.

Exhibit 133: Oil-Equivalent Supply Costs, Realized Ratio - Continued ($/Boe, Brent)

Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
71	Rosneft	ROSN	97.62	53.40	74.04	92.29	100.50	108.51	102.50	63.95	50.86	73.13	77.29	65.78	72.49
72	Tamarack Valley	TVE	-	-	101.24	35.13	84.66	83.05	119.42	54.87	47.11	74.81	67.20	65.93	71.31
73	Advantage	AAV	84.82	57.04	64.76	125.06	106.46	186.84	238.43	59.48	48.00	62.23	95.89	66.14	77.57
74	Parsley	PE	-	-	-	-	90.38	92.50	134.59	56.36	54.09	82.52	60.29	66.51	73.19
75	SRC Energy	SRCI	-	745.31	120.47	134.22	82.00	157.44	73.99	50.48	103.22	58.04	58.97	66.64	60.23
76	Sanchez	SN	-	-	32.39	162.66	78.18	109.16	86.26	105.27	33.51	67.44	101.71	66.74	80.49
77	Galp Energia	GALP	-	-	156.55	218.67	306.18	192.18	172.97	136.38	187.01	46.82	59.10	66.80	90.01
78	Whiting	WLL	137.30	52.24	76.16	118.65	127.06	106.03	100.97	68.01	51.14	74.83	75.71	67.25	104.01
79	Paramount	POU	192.86	131.85	156.07	191.10	182.00	123.72	78.19	121.30	58.18	56.25	80.67	67.33	81.03
80	Denbury	DNR	55.06	79.56	82.68	105.54	85.89	110.58	105.07	121.67	87.98	56.97	58.30	67.45	85.92
81	Total S.A.	TOT	92.29	89.71	75.97	151.63	155.23	200.74	181.29	85.44	88.95	57.67	66.68	67.57	84.15
82	Crescent Point	CPG	69.43	97.50	110.31	102.03	120.20	104.33	108.08	86.06	63.60	62.45	80.37	67.93	81.50
83	Suncor	SU	74.45	88.55	96.41	86.35	129.76	113.65	101.35	69.24	67.77	60.86	74.71	67.95	74.99
84	CNOOC	CEO	113.86	61.41	65.24	80.24	83.36	105.37	128.19	76.85	103.13	41.60	53.73	68.29	65.10
85	Extraction	XOG	-	-	-	-	-	-	125.70	58.82	67.36	88.02	57.64	68.47	91.77
86	MEG Energy	MEG	-	-	89.11	109.71	91.32	118.73	126.34	43.62	47.27	83.74	73.31	68.52	75.03
87	Delphi	DEE	83.73	57.08	78.87	70.17	114.90	77.25	74.19	87.69	84.04	54.63	64.71	68.58	74.11
88	Cenovus	CVE	59.37	53.88	45.99	76.14	107.01	128.15	109.73	53.18	51.14	71.93	98.17	68.66	69.12
89	PetroChina	PTR	126.04	64.23	80.63	112.14	132.25	128.11	113.95	148.24	100.87	64.49	65.98	70.44	86.41
90	Baytex	BTE	88.23	63.82	64.17	98.21	175.19	99.99	109.35	91.22	94.75	62.65	57.17	71.23	83.23
91	Repsol	REP	176.07	87.91	95.88	122.66	115.90	139.19	175.78	131.38	68.77	66.20	81.62	72.77	106.35
92	Diamondback	FANG	-	-	-	-	195.21	174.36	119.69	59.85	59.89	76.51	86.29	73.58	77.27
93	Callon	CPE	151.31	23.92	74.74	87.53	205.16	138.03	121.20	55.06	84.27	86.02	70.32	75.03	76.87
94	Obsidian	OBE	97.26	62.08	46.53	114.04	77.34	132.93	67.05	63.04	71.76	55.19	93.76	75.21	72.32
95	Freehold	FRU	58.14	37.80	40.94	59.68	110.78	69.31	114.92	101.89	76.92	66.75	79.45	76.01	94.78
96	PDC Energy	PDCE	148.62	120.26	80.59	100.10	120.30	77.51	139.53	97.07	117.38	57.71	60.33	77.13	91.93
97	Journey	JOY	-	-	-	-	-	119.25	87.39	65.92	45.23	95.34	82.39	77.81	73.06
98	Imperial	IMO	84.32	78.12	74.76	118.59	115.22	135.63	101.21	62.92	113.35	61.00	82.72	78.20	82.04
99	SM Energy	SM	107.66	118.06	73.03	86.32	96.76	78.40	91.38	56.54	89.52	81.96	62.09	78.23	72.09
100	Painted Pony	PONY	100.94	79.31	100.16	116.37	153.90	125.89	62.39	47.15	50.22	124.67	87.26	79.83	59.38
101	Concho	CXO	100.34	73.55	90.82	97.42	119.91	107.20	102.95	151.84	86.92	64.73	85.42	80.89	87.85
102	Halcon	HK	101.66	60.18	82.94	155.91	164.37	121.29	81.51	103.28	68.11	68.02	111.34	81.06	84.73
103	Gran Tierra	GTE	50.07	36.97	73.04	78.38	84.71	99.47	103.29	62.37	100.59	47.75	82.46	81.23	87.60
104	Canacol	CNE	-	97.78	103.63	208.45	104.81	179.53	161.72	91.52	36.92	46.76	46.33	81.44	96.73
105	Centennial	CDEV	-	-	-	-	-	-	80.57	61.79	259.01	48.02	60.61	82.28	79.72
106	Exxon Mobil	XOM	114.74	74.50	137.58	92.54	97.87	120.60	106.36	74.08	96.25	59.40	80.64	84.55	85.86
107	Igas Energy	IGAS	-	-	-	-	128.18	62.21	222.96	71.86	81.64	57.71	78.63	86.26	119.13
108	Zargon	ZAR	85.10	71.73	85.24	130.01	166.74	126.11	173.81	111.50	85.81	77.77	98.27	87.02	110.26
109	Athabasca	ATH	-	-	-	-	498.92	1,146.85	556.19	75.17	121.98	52.61	97.57	87.95	172.17
110	Marathon Oil	MRO	159.56	58.04	159.06	135.16	130.66	111.99	120.79	102.49	81.13	117.97	79.33	89.30	97.59
111	Frontera Energy	FEC	75.63	55.82	115.56	61.79	178.08	126.41	201.70	77.48	103.57	57.25	106.54	89.41	110.41
112	Lundin	LUPE	-	76.87	79.47	90.77	376.48	417.64	298.77	57.25	76.95	144.53	80.28	90.27	143.68
113	EP Energy	EPE	-	-	-	-	-	97.04	103.93	73.86	68.17	96.49	129.66	98.02	94.98
114	Pan Orient	POE	48.78	42.99	58.67	110.10	159.42	262.95	517.24	260.93	99.50	154.21	87.70	100.49	227.71
115	Tullow	TUL	82.10	75.63	142.74	280.30	101.17	149.13	159.62	118.60	125.98	103.95	79.79	101.47	115.93
116	EnQuest	ENQ	-	-	70.89	91.79	93.98	78.86	142.35	108.64	112.47	106.03	92.02	103.07	110.44
117	Leucrotta	LXE	-	-	-	-	-	-	132.32	212.89	93.12	118.43	86.29	104.57	96.35
118	Niko	NKO	171.14	173.25	121.15	99.05	91.74	80.55	332.01	119.67	22.91	129.06	170.83	106.68	162.13
119	Orca	ORC	208.18	203.72	123.34	83.73	102.18	89.01	177.72	89.89	118.55	120.35	105.61	113.19	120.14
120	Kosmos	KOS	-	-	-	109.36	105.25	129.91	70.95	218.48	290.92	65.97	116.35	115.69	111.71
121	Genel	GENL	-	-	-	120.76	170.67	173.18	156.38	148.99	113.27	54.00	72.69	117.08	159.86
122	Pemex	Pemex	91.97	77.86	94.01	112.61	112.67	130.05	201.25	100.13	162.08	105.20	91.47	120.21	143.96
123	Ecopetrol	EC	143.16	75.70	82.94	96.93	113.35	142.67	167.37	269.95	152.29	114.41	143.64	126.90	146.95
124	SOCO	SIA	173.74	148.33	315.23	905.45	232.64	114.31	235.96	186.58	184.69	196.70	180.97	197.66	205.74
125	Oryx	OXC	-	-	-	-	-	-	325.66	301.67	365.42	262.62	263.38	287.97	299.20
	Worldwide Average		**12.23**	**12.09**	**12.25**	**12.79**	**12.97**	**13.61**	**14.20**	**12.93**	**12.51**	**12.97**	**13.19**	**12.89**	**13.16**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana and QEP Resources.

Exhibit 134: Oil-Equivalent Supply Costs Rankings, 6:1 Gas:Oil Ratio ($/Boe, Brent)

Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	5-Year
1	Cabot	COG	84.39	58.85	38.18	31.68	24.37	17.94	24.64	22.62	17.09	16.26	13.57	13.57	15.48
2	Peyto	PEY	54.42	12.18	21.52	24.29	31.72	33.81	23.83	21.24	19.00	19.15	19.04	19.04	18.78
3	Comstock	CRK	116.37	31.78	27.02	22.48	56.95	66.79	82.53	74.57	22.65	21.25	16.91	20.15	48.80
4	Advantage	AAV	56.02	35.80	32.13	48.13	35.01	74.43	78.00	22.38	13.55	19.43	29.92	20.31	22.66
5	EQT Corporation	EQT	63.10	35.76	39.72	91.65	39.69	21.09	32.34	30.34	24.35	39.19	21.12	21.12	26.79
6	Storm	SRX	-	-	-	92.00	81.11	44.08	37.15	30.12	31.09	24.68	17.16	21.56	23.48
7	Chesapeake	CHK	96.64	43.05	53.09	59.70	49.31	54.22	57.84	37.36	15.95	19.91	24.57	24.57	18.87
8	Painted Pony	PONY	79.41	69.83	60.55	53.96	70.88	42.75	24.09	15.29	16.49	30.56	46.97	24.97	19.56
9	Birchcliff	BIR	46.97	22.51	49.27	38.09	47.20	35.54	29.32	18.85	22.73	22.68	31.54	25.85	25.17
10	Southwestern	SWN	31.17	21.91	22.31	26.00	29.95	15.26	31.37	43.03	34.77	16.56	26.35	26.35	27.88
11	Arc Resources	ARX	50.62	38.73	49.57	55.96	65.22	67.90	63.23	31.21	23.46	28.69	26.39	26.39	26.04
12	Tourmaline	TOU	-	-	38.54	37.04	28.60	42.60	26.92	21.30	22.28	22.20	27.45	27.45	24.03
13	Bellatrix	BXE	-	65.88	41.22	42.51	46.02	31.30	51.96	65.04	21.53	30.36	30.78	27.52	41.08
14	Canacol	CNE	-	97.78	103.63	208.45	104.81	130.07	101.67	56.60	36.01	32.26	28.30	28.30	36.98
15	Encana	ECA	54.61	58.49	26.30	37.86	40.88	69.93	69.39	36.84	26.41	27.83	28.80	28.80	27.67
16	NuVista	NVA	68.50	35.17	44.50	87.74	66.13	48.63	45.74	49.30	27.35	28.54	30.49	29.08	36.57
17	Orca	ORC	50.96	70.08	30.85	17.76	20.28	9.21	47.64	28.45	21.81	33.26	29.11	29.11	27.83
18	Crew	CR	88.74	33.08	47.42	58.94	62.75	55.17	52.09	40.02	20.95	36.60	38.40	29.34	36.63
19	Ultra	UPL	48.07	34.99	49.41	39.37	18.01	26.85	21.21	76.55	18.50	98.17	29.64	29.64	46.45
20	Bonavista	BNP	60.26	40.11	40.90	37.57	53.29	59.20	44.12	45.94	24.47	35.57	30.01	29.93	36.56
21	Kelt	KEL	-	-	-	-	-	54.80	55.23	52.33	24.22	28.29	37.35	30.11	39.09
22	Perpetual	PMT	57.01	53.32	47.80	42.96	41.47	41.87	27.87	32.76	22.38	27.40	26.75	30.20	28.42
23	Eni S.P.A.	ENI	82.91	74.12	59.65	76.90	65.48	84.47	103.60	46.60	40.04	48.64	30.93	30.93	37.53
24	Montage	MR	-	-	-	-	-	306.61	74.04	69.84	31.11	30.25	32.47	31.20	46.65
25	Range	RRC	80.58	36.52	38.03	46.88	38.61	33.11	49.54	37.72	46.72	29.31	31.41	31.41	36.07
26	Equinor	EQNR	189.11	81.43	80.45	96.66	88.41	86.81	143.16	88.81	70.35	34.87	33.76	33.76	42.41
27	Continental	CLR	90.15	30.69	53.14	73.76	75.59	60.41	72.68	39.51	34.34	42.77	34.80	34.80	36.38
28	Berry	BRY	82.94	46.43	81.92	189.61	232.90	160.98	70.60	194.75	35.08	27.17	50.51	36.56	74.72
29	Paramount	POU	153.91	81.89	78.01	79.18	75.45	56.76	44.72	79.08	33.53	29.09	44.51	36.91	47.48
30	Enerplus	ERF	76.61	161.07	93.90	64.67	89.39	48.23	47.41	34.91	31.50	36.12	41.68	36.95	39.43
31	EnQuest	ENQ	-	-	70.89	91.79	93.98	78.86	142.35	108.64	112.47	106.03	38.02	38.02	82.57
32	QEP Resources	QEP	66.74	18.19	37.01	21.62	82.26	69.09	82.07	31.72	32.23	47.02	38.46	38.46	38.84
33	ConocoPhillips	COP	81.75	56.33	44.93	81.97	80.63	81.55	103.37	117.62	63.51	42.19	38.70	38.70	47.70
34	Chevron	CVX	65.23	104.54	208.69	62.18	72.89	124.62	117.09	86.52	58.85	36.32	38.89	38.89	43.69
35	Bonterra	BNE	50.82	26.35	54.27	108.62	70.39	42.30	52.52	57.07	26.97	38.97	54.20	39.53	47.60
36	Antero	AR	-	-	-	-	36.30	35.29	35.05	54.78	31.55	29.84	40.25	40.25	33.41
37	Cimarex	XEC	94.47	28.14	36.31	59.44	71.56	68.71	54.96	42.41	42.14	34.73	40.45	40.45	37.75
38	Laredo	LPI	-	-	26.32	83.56	76.40	63.16	95.14	64.88	33.73	36.95	54.64	41.20	53.90
39	Sinopec	SNP	119.52	95.81	89.60	96.65	107.47	116.09	99.10	58.23	82.59	45.09	41.58	41.58	55.87
40	Northern Oil	NOG	-	56.69	83.27	91.02	108.48	95.43	105.35	52.20	41.04	35.81	49.16	41.60	54.17
41	Pengrowth	PGF	65.96	54.62	73.79	66.36	89.30	80.84	103.61	73.65	31.72	38.26	59.93	42.38	64.74
42	Matador	MTDR	-	-	-	40.90	65.04	46.72	82.69	66.56	39.06	37.19	50.65	42.98	49.95
43	EOG Resources	EOG	57.53	37.67	64.71	81.09	74.58	57.89	56.64	54.75	52.22	35.56	43.02	43.02	41.36
44	Ecopetrol	EC	113.62	40.66	49.57	63.32	74.23	77.13	82.47	75.08	81.47	38.13	44.83	44.83	67.04
45	Valeura	VLE	-	-	178.12	29.45	94.64	74.68	27.52	32.80	49.32	20.46	44.90	44.90	38.48
46	Delphi	DEE	52.92	28.60	41.44	32.85	78.56	38.12	43.30	52.07	58.09	36.24	39.47	44.92	46.50
47	Premier	PMO	74.21	39.67	86.80	74.90	106.81	98.19	301.25	33.02	49.12	47.20	45.35	45.35	47.09
48	Parex	PXT	-	-	-	147.20	99.02	79.65	74.96	49.19	36.58	36.31	45.40	45.40	39.11
49	Unit	UNT	66.00	45.92	68.14	68.29	62.56	63.56	64.56	54.98	55.72	33.54	47.89	46.16	51.51
50	Murphy Oil	MUR	98.69	53.79	71.09	79.65	91.86	84.04	69.53	61.22	37.61	44.62	46.32	46.32	42.66
51	Leucrotta	LXE	-	-	-	-	-	-	65.04	132.98	49.21	54.95	34.26	46.56	44.19
52	Vermilion	VET	74.17	41.23	76.26	105.89	74.22	43.99	77.27	40.98	23.33	37.52	47.25	47.25	37.58
53	Freehold	FRU	48.32	28.46	29.63	44.38	67.02	53.22	72.38	85.03	42.59	42.69	66.60	47.45	67.11
54	Highpoint	HPR	44.23	16.31	22.72	38.81	65.68	46.93	86.09	103.21	41.39	33.97	67.01	47.61	65.48
55	Tamarack Valley	TVE	-	-	49.65	73.59	46.24	55.00	86.46	39.28	35.03	51.25	50.72	47.67	51.57
56	Anadarko	APC	85.87	57.19	52.43	57.75	66.94	71.77	66.76	81.20	54.60	47.54	47.94	47.94	49.02
57	Repsol	REP	119.12	56.38	56.55	73.86	33.47	58.10	102.17	74.42	41.56	42.75	48.74	48.74	44.34
58	Baytex	BTE	80.52	59.38	57.33	88.44	148.32	89.19	96.63	74.37	113.84	54.80	51.09	48.80	70.09
59	Jagged Peak	JAG	-	-	-	-	-	-	-	46.07	35.22	45.56	56.28	49.08	40.65
60	Galp Energia	GALP	-	-	38.34	119.32	196.94	145.46	111.73	102.04	166.61	30.16	49.71	49.71	47.51
61	SRC Energy	SRCI	-	614.42	85.38	94.86	55.55	116.74	54.06	38.07	75.42	45.30	43.56	49.90	53.32
62	Marathon Oil	MRO	94.67	48.14	106.36	105.64	99.95	90.57	98.89	81.25	83.35	80.94	49.94	49.94	65.97
63	Apache	APA	100.31	60.93	63.11	84.23	86.49	75.97	90.16	82.33	44.76	40.43	50.09	50.09	45.89
64	Whitecap	WCP	-	-	88.58	78.42	90.49	74.25	78.24	55.07	40.35	47.69	64.92	50.15	64.17
65	Canadian Natural	CNQ	53.39	50.42	57.32	113.77	104.20	80.48	67.65	48.81	44.39	48.67	50.39	50.39	47.92
66	CNOOC	CEO	126.34	55.27	57.51	76.07	73.76	97.78	110.35	70.87	96.77	39.93	50.49	50.49	63.24
67	Bonanza Creek	BCEI	-	-	(1,129.65)	92.19	119.95	78.51	101.46	67.26	37.84	55.36	61.70	50.49	66.23
68	Carrizo	CRZO	71.70	38.91	37.74	47.06	84.03	59.29	71.55	57.97	51.83	51.28	51.97	51.26	56.52
69	BP PLC	BP	56.41	45.86	62.42	88.14	99.08	57.21	117.11	81.18	44.60	48.57	51.45	51.45	47.96
70	Petrobras**	PBR	173.09	54.92	68.59	98.19	113.11	104.64	103.74	115.65	144.67	54.98	51.78	51.78	61.55
	Worldwide Average		**84.41**	**54.11**	**71.20**	**78.31**	**86.45**	**83.35**	**89.59**	**67.43**	**52.00**	**44.69**	**49.82**	**48.32**	**59.09**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana and QEP Resources.

Exhibit 135: Oil-Equivalent Supply Costs, 6:1 Gas:Oil Ratio - Continued ($/Boe, Brent)

Rank	Company		2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Avg 3-Year	Weighted Avg 5-Year
71	Torc	TOG	54.68	38.93	61.21	67.23	97.98	112.59	78.88	65.38	48.18	41.86	61.16	51.86	57.33
72	Cardinal	CJ	-	-	-	-	-	178.14	101.80	60.51	43.76	52.35	52.54	52.46	63.16
73	WPX Energy	WPX	-	-	67.09	41.60	43.26	50.93	81.43	77.25	36.61	48.24	52.58	52.58	46.63
74	Approach	AREX	69.41	48.53	40.75	76.87	108.84	94.91	77.47	47.80	25.78	32.70	95.92	52.90	56.99
75	Santos	Santos	63.27	41.03	66.72	120.91	146.41	182.96	160.08	163.65	25.95	28.05	53.18	53.18	50.67
76	Journey	JOY	-	-	-	-	-	80.24	58.25	54.64	34.34	64.86	57.60	53.75	54.07
77	Hess Corp.	HES	78.67	69.40	78.59	131.28	111.98	144.12	108.59	117.53	60.70	40.92	54.37	54.37	49.45
78	Total S.A.	TOT	75.75	74.99	62.32	84.36	108.86	115.25	117.15	77.75	63.95	46.71	54.80	54.80	53.99
79	Sanchez	SN	-	-	29.85	140.10	71.10	97.75	70.48	100.79	28.34	54.66	84.06	55.00	69.71
80	Noble	NBL	98.52	99.98	37.37	81.58	100.72	46.13	106.20	98.63	32.41	31.55	56.36	56.36	36.22
81	Extraction	XOG	-	-	-	-	-	-	105.06	50.31	54.01	73.99	47.16	56.42	85.93
82	PDC Energy	PDCE	78.18	235.14	49.61	68.23	82.69	51.63	113.88	62.67	86.75	40.78	44.16	56.53	67.22
83	Devon	DVN	58.65	32.62	52.69	70.42	115.52	82.82	97.24	116.71	46.50	40.06	56.55	56.55	47.38
84	Pioneer	PXD	169.20	143.26	41.11	81.26	139.23	85.22	89.32	60.74	52.87	37.73	56.59	56.59	47.30
85	Royal Dutch Shell	RD	66.96	37.45	65.01	73.97	150.10	101.42	229.72	153.48	77.44	30.67	56.65	56.65	52.23
86	Parsley	PE	-	-	-	-	68.68	70.39	116.65	49.84	49.64	73.25	52.05	56.69	65.61
87	SM Energy	SM	68.72	78.34	46.04	58.45	60.63	51.91	69.39	43.75	71.54	53.15	50.32	56.95	68.57
88	Exxon Mobil	XOM	90.26	54.51	78.59	69.31	72.48	91.80	82.72	62.94	71.36	59.71	57.34	57.34	63.33
89	Husky	HSE	93.00	52.43	68.46	80.70	149.81	90.74	76.53	65.49	40.80	45.94	57.49	57.49	47.98
90	Genel	GENL	-	-	-	119.62	170.67	173.18	156.38	148.99	103.23	47.80	59.32	59.32	71.36
91	PetroChina	PTR	85.71	54.98	66.61	86.22	103.39	95.02	86.41	131.15	92.62	61.87	59.32	59.32	65.44
92	Surge	SGY	82.87	42.83	63.33	88.27	99.76	130.56	89.95	52.00	44.35	48.96	73.43	59.46	59.97
93	Obsidian	OBE	79.78	51.27	34.91	91.32	91.61	75.64	88.87	51.64	59.31	40.97	74.63	59.52	64.26
94	Transglobe	TGL	109.75	44.20	68.15	85.31	85.28	115.33	105.19	143.79	69.29	59.53	62.21	62.21	63.77
95	Rosneft	ROSN	98.41	51.92	72.02	77.35	79.97	86.18	80.83	53.25	42.57	60.37	62.38	62.38	54.17
96	Occidental	OXY	85.98	39.50	74.29	124.00	98.04	76.35	94.51	90.80	47.88	46.80	62.41	62.41	60.71
97	Madalena	MVN	409.08	144.07	259.69	343.97	154.08	114.71	65.57	105.94	39.89	77.37	62.67	62.67	59.17
98	Oasis	OAS	-	48.03	60.70	85.89	80.32	104.36	90.50	43.91	51.16	59.50	91.20	62.67	64.10
99	Callon	CPE	46.96	17.96	49.72	63.93	117.05	109.24	107.70	48.42	72.32	76.39	60.20	63.20	67.75
100	Whiting	WLL	105.98	48.11	69.78	108.85	121.70	96.21	94.08	68.50	45.40	65.10	65.70	65.70	58.49
101	Denbury	DNR	47.59	70.05	65.74	82.65	88.44	111.65	109.55	118.77	87.16	55.98	56.73	66.33	85.27
102	Concho	CXO	89.09	64.58	74.94	71.45	89.07	79.62	77.11	133.00	65.79	49.55	67.89	67.89	63.13
103	Centennial	CDEV	-	-	-	-	-	-	71.83	55.42	205.82	40.33	50.84	69.12	67.55
104	Halcon	HK	82.52	57.94	62.84	96.95	149.82	114.17	76.03	95.75	61.87	61.79	93.10	72.05	76.57
105	Cenovus	CVE	47.90	44.57	31.37	51.06	74.15	93.85	85.52	45.93	42.50	55.16	72.15	72.15	54.66
106	Suncor	SU	67.97	66.73	98.23	119.37	159.72	138.14	98.92	73.48	67.33	60.72	72.31	72.31	66.86
107	Oryx	OXC	-	-	-	-	-	-	325.66	287.46	365.42	262.62	73.04	73.04	223.79
108	MEG Energy	MEG	-	-	89.13	109.73	91.28	118.86	126.34	43.62	47.27	83.74	73.31	73.31	68.52
109	Imperial	IMO	81.86	127.66	68.32	108.71	104.93	125.56	96.47	61.16	87.48	56.65	73.95	73.95	69.40
110	Niko	NKO	56.08	58.82	42.01	34.60	42.23	26.62	111.38	44.53	10.02	45.77	74.20	74.20	38.40
111	Zargon	ZAR	65.01	54.23	64.21	95.01	101.31	98.57	101.80	99.46	66.99	58.65	86.05	74.34	83.01
112	EP Energy	EPE	-	-	-	-	-	51.39	72.14	57.91	47.50	74.66	102.93	75.06	72.08
113	Pemex	Pemex	93.49	69.39	79.43	95.63	95.51	111.50	183.90	195.07	130.46	82.63	76.16	76.16	95.97
114	Lundin	LUPE	-	77.39	77.97	86.55	348.11	417.00	207.47	51.51	70.40	173.86	76.17	76.17	97.28
115	Diamondback	FANG	-	-	-	-	172.55	156.98	111.03	55.79	56.56	70.26	76.93	76.93	63.86
116	Crescent Point	CPG	66.21	92.21	102.83	94.85	110.59	97.10	104.45	77.40	56.44	57.73	77.44	77.44	62.79
117	Athabasca	ATH	-	-	-	-	293.97	695.82	540.24	57.40	93.44	50.90	95.23	77.76	156.87
118	Seven Generations	VII	-	-	-	-	-	90.83	51.19	143.75	21.58	47.98	78.22	78.22	34.00
119	Tullow	TUL	76.24	69.06	125.87	214.57	91.03	190.29	149.17	129.48	138.07	143.59	79.19	79.19	118.82
120	Pan Orient	POE	48.78	42.99	79.23	110.10	159.42	262.95	517.24	254.76	96.83	151.97	87.70	87.70	100.34
121	Gran Tierra	GTE	49.97	36.83	73.12	60.14	84.88	97.42	105.87	61.40	100.10	47.40	94.19	94.19	80.78
122	Frontera Energy	FEC	58.02	49.65	96.70	58.20	154.47	121.76	183.74	76.06	101.19	55.59	101.11	101.11	86.32
123	Kosmos	KOS	-	-	-	105.73	103.34	128.30	70.41	217.89	288.46	64.62	111.99	111.99	111.54
124	Igas Energy	IGAS	-	-	-	-	166.72	62.59	231.56	95.29	96.01	53.28	112.99	112.99	83.06
125	SOCO	SIA	712.60	148.33	315.23	905.45	232.64	114.31	235.96	186.58	184.69	196.70	180.97	180.97	197.66
	Worldwide Average		**84.41**	**54.11**	**71.20**	**78.31**	**86.45**	**83.35**	**89.59**	**67.43**	**52.00**	**44.69**	**49.82**	**48.32**	**59.09**

Source: BMO Capital Markets, Company Reports. BMO Capital Markets is Restricted on Encana and QEP Resources.

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Pioneer Natural Resources (PXD - NYSE) C213
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Zargon Oil & Gas Ltd. (ZAR - TSX) D301

International Producers

Canacol Energy (CNE - TSX) E1
EnQuest (ENQ - LSE) E7
Frontera Energy Corporation (FEC - TSX) E13
Galp Energia (GALP - XLIS) E19
Genel Energy (GENL - LSE) E25
Gran Tierra (GTE - TSX, AMEX) E31
Igas Energy (IGAS - LSE) E37
Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB) E43
Lundin Petroleum AB (LUPE - OMX, TSX) E49
Madalena Energy (MVN - TSX) E55
Niko Resources Ltd. (NKO - TSX) E61
Orca Exploration (ORC.B - TSX) E67
Oryx Petroleum (OXC - TSX) E73
Pan Orient Energy (POE - TSXV) E79
Parex Resources Inc. (PXT - TSX) E85
Premier Oil (PMO - LSE) E91
Santos Ltd. (STO - ASX; STOSY - NYSE) E97
SOCO International (SIA - LSE) E103
TransGlobe Energy Corp. (TGL - TSX) E109
Tullow Oil plc (TLW - LN) E115
Valeura Energy (VLE - TSX) E121

See pages F1 to F4 for analyst coverage.

– Notes –

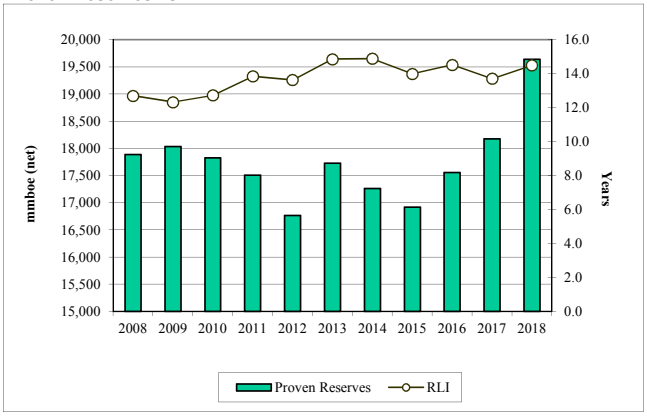
BP PLC (BP - NYSE)

US$, net

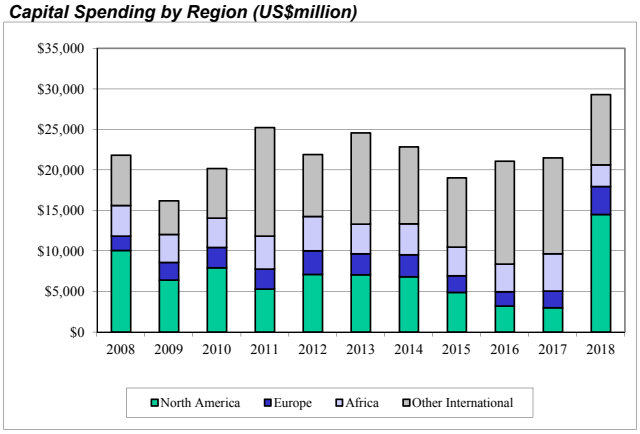
- BP's results from upstream operations improved to $7.24/boe in 2018 versus $3.44/boe in 2017.
- The company's F&D costs were stable at $9.62/boe compared to $10.16/boe last year. On a realized oil:gas price ratio basis, F&D costs remained flat at $13.63/boe from $13.67/boe, while costs for proved developed reserves also jumped to $19.78/boe from $17.87/boe in 2017.
- BP's 2018 operations imply a required Brent breakeven oil price of $71.90/boe on a realized ratio basis on total proved reserves, while its PD cost assessment implied a Brent breakeven oil price of $88.25/boe.
- The company's financial performance improved this year, resulting in ROCE of 7.4% in 2018 versus 2.9% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

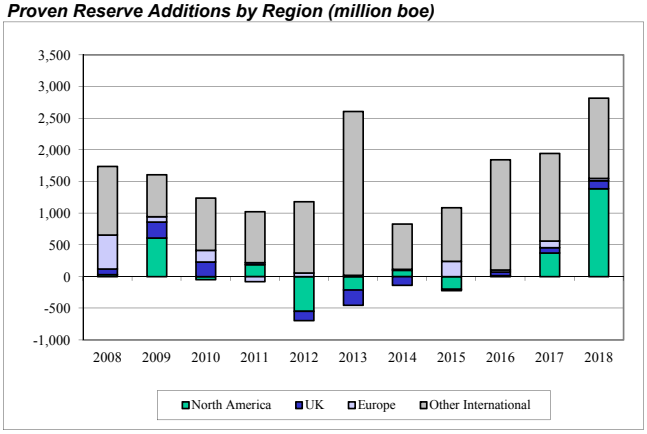
Proven Reserves vs RLI



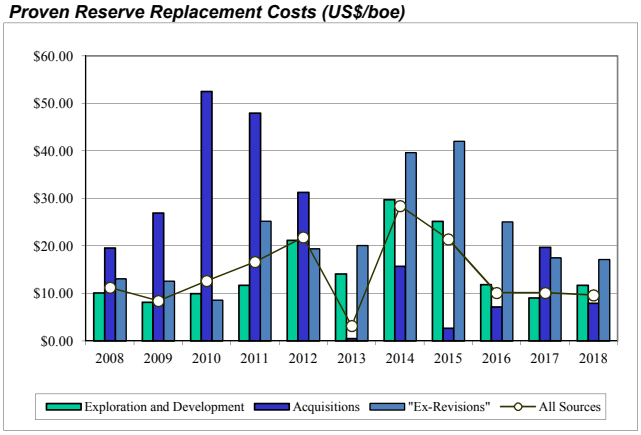
Capital Spending by Region (US$million)



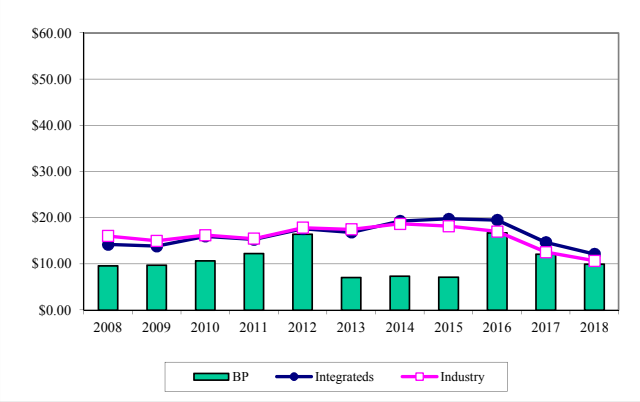
Proven Reserve Additions by Region (million boe)



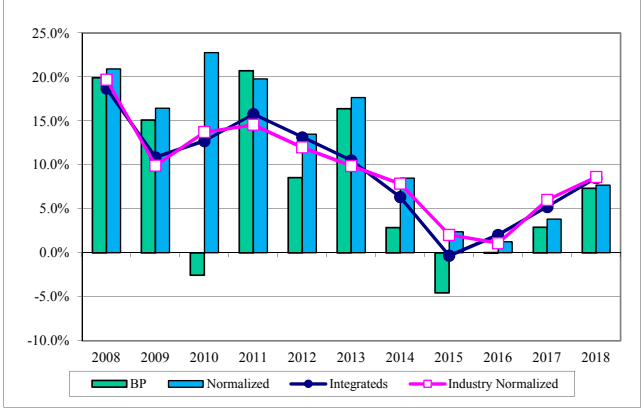
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

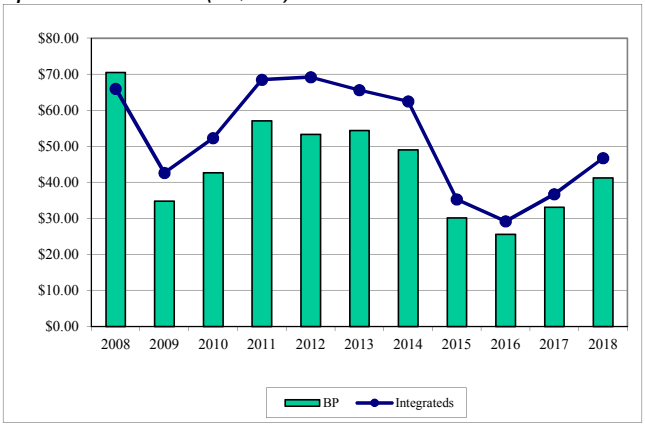
See pages F1 to F4 for analyst coverage.

BP PLC (BP - NYSE)

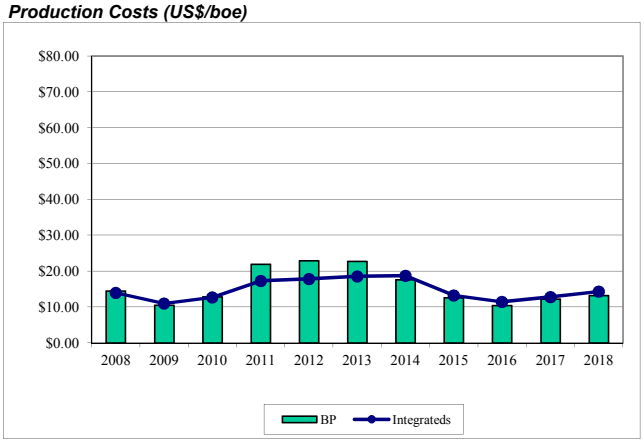
US$/boe, net

Worldwide

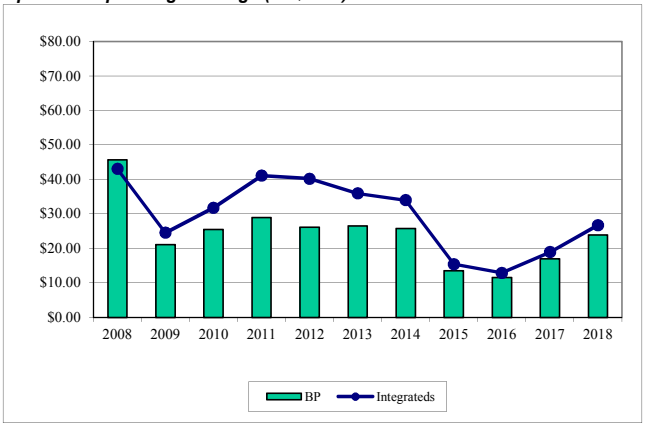
Upstream Net Revenue (US$/boe)



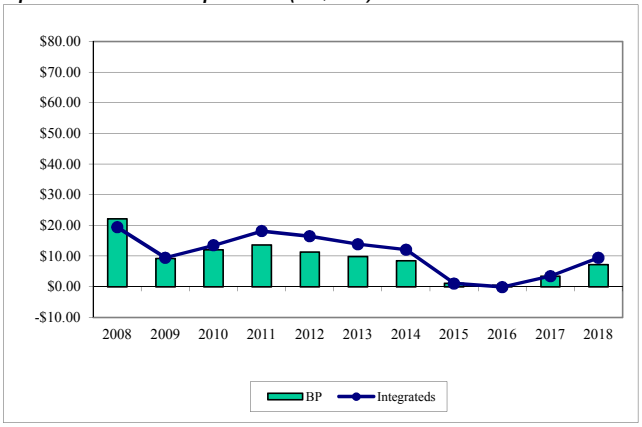
Production Costs (US$/boe)



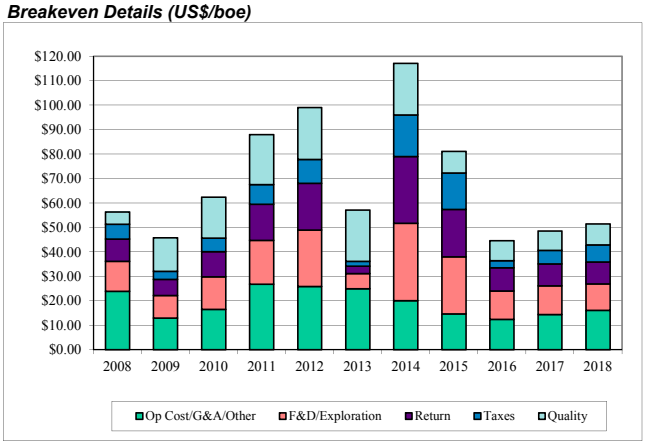
Upstream Operating Earnings (US$/boe)



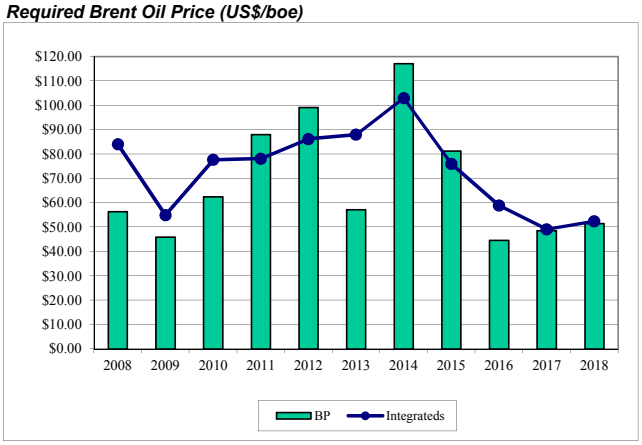
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



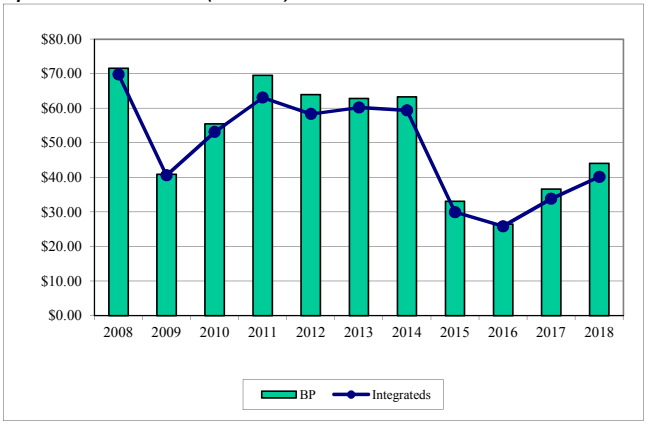
Source: BMO Capital Markets, Company Reports

BP PLC (BP - NYSE)

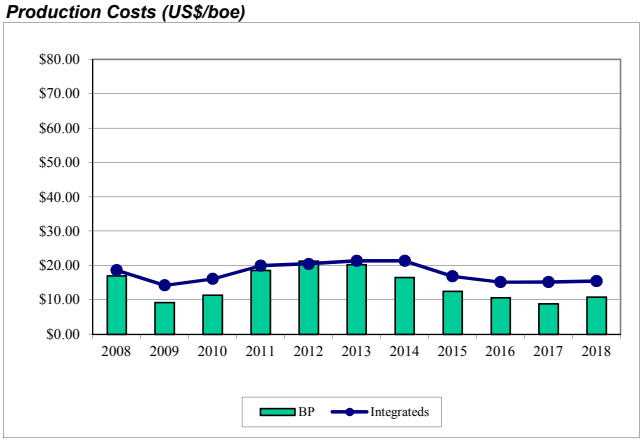
US$/boe, net

North America

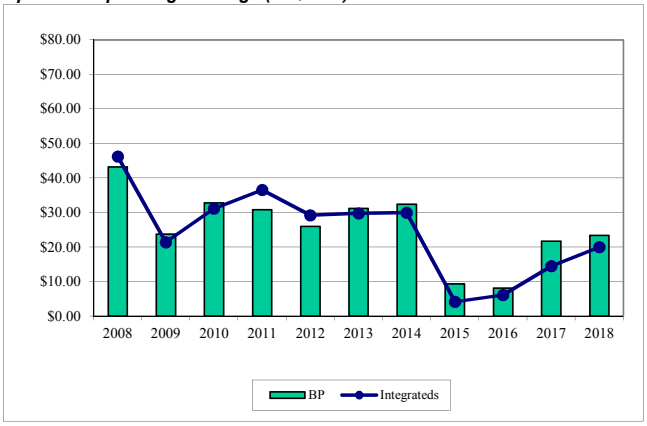
Upstream Net Revenue (US$/boe)



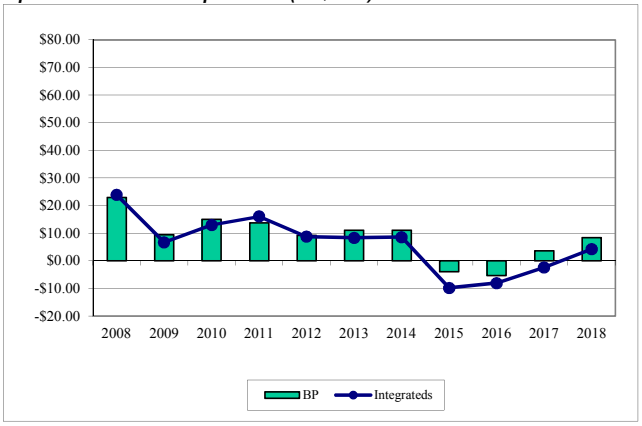
Production Costs (US$/boe)



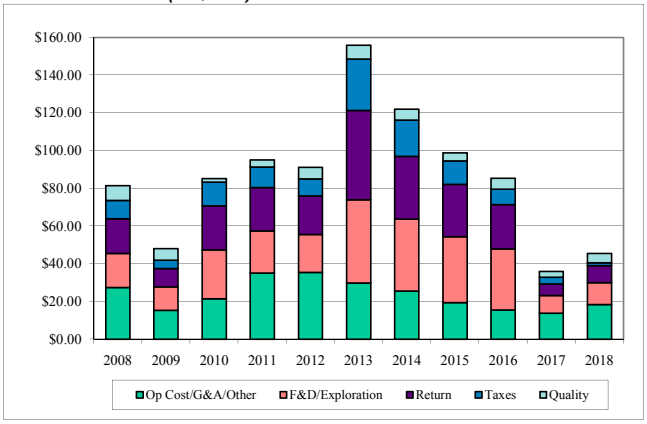
Upstream Operating Earnings (US$/boe)



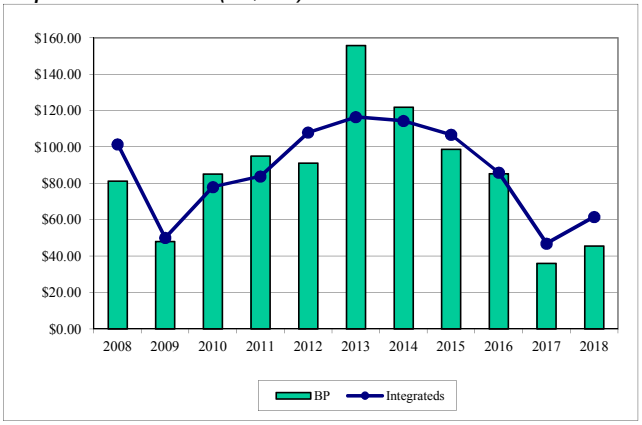
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

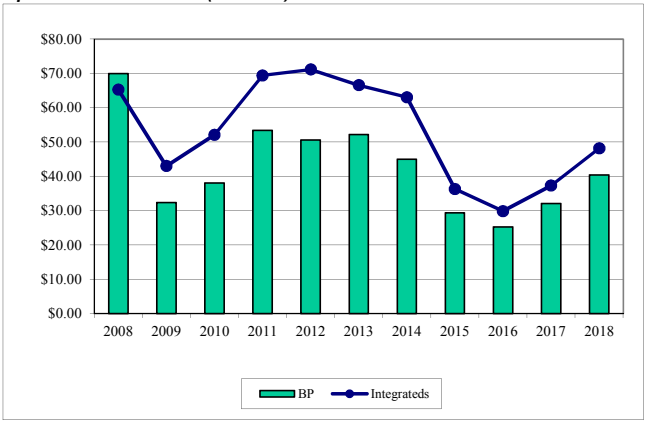
See pages F1 to F4 for analyst coverage.

BP PLC (BP - NYSE)

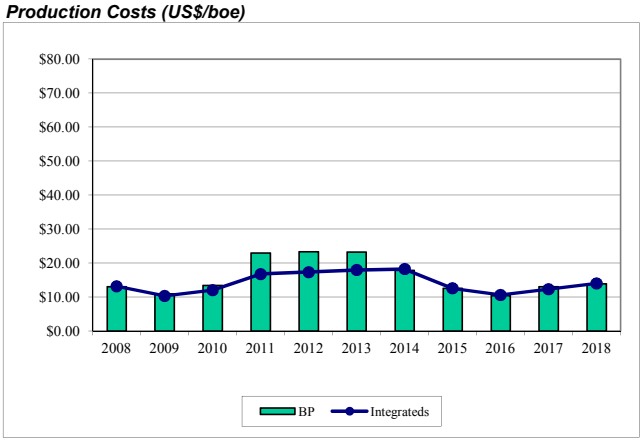
US$/boe, net

Total International

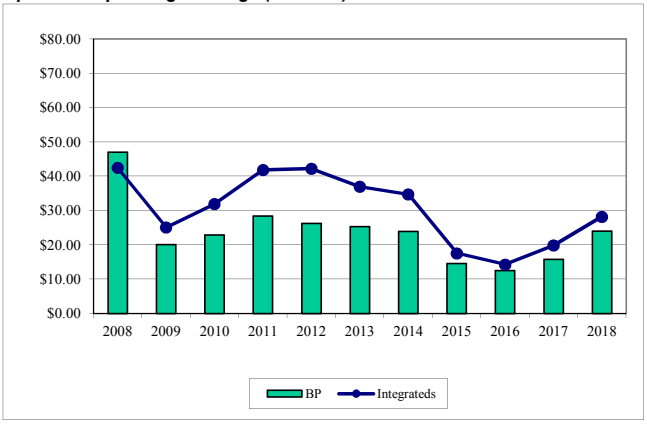
Upstream Net Revenue (US$/boe)



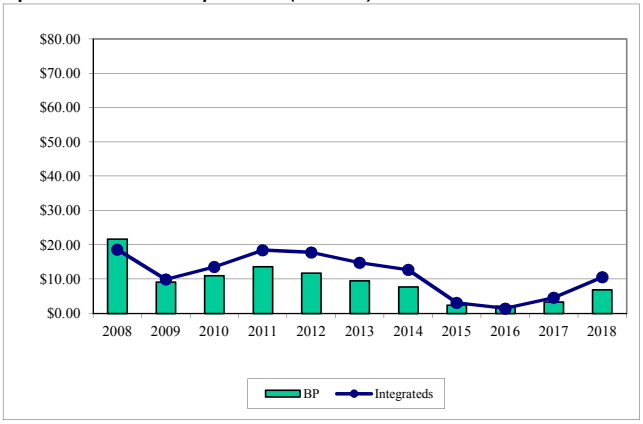
Production Costs (US$/boe)



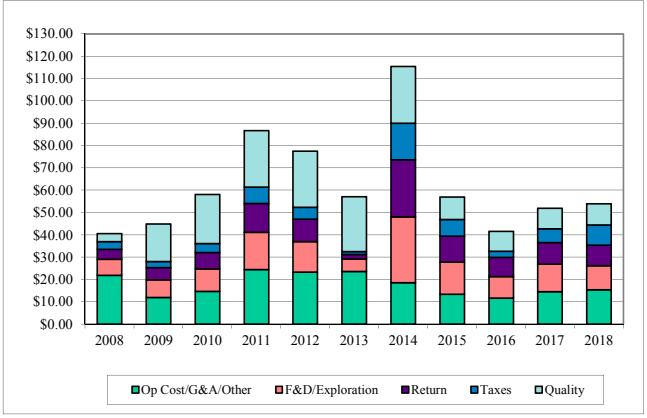
Upstream Operating Earnings (US$/boe)



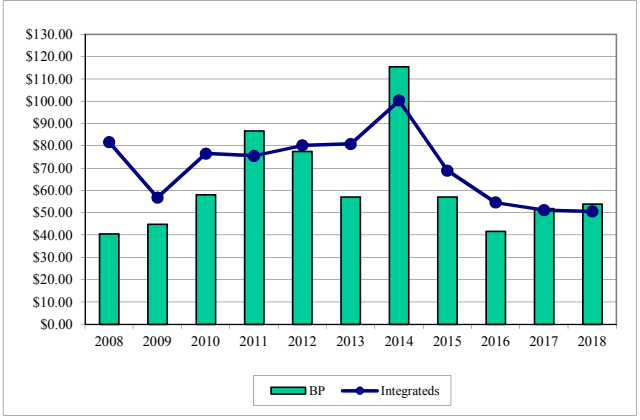
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



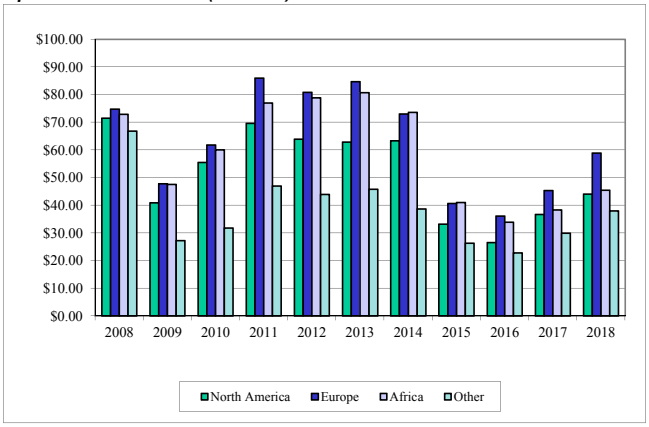
Source: BMO Capital Markets, Company Reports

BP PLC (BP - NYSE)

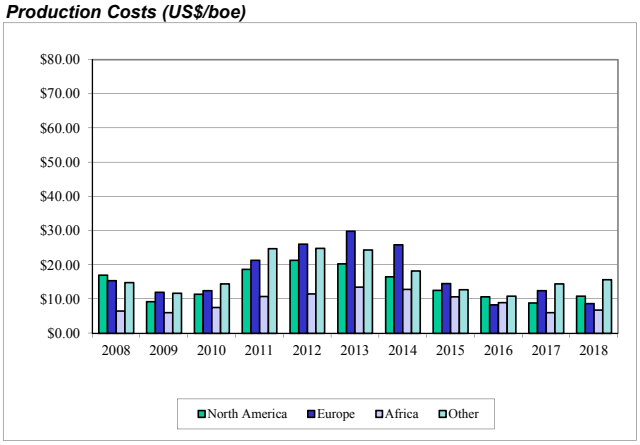
US$/boe, net

International Segments

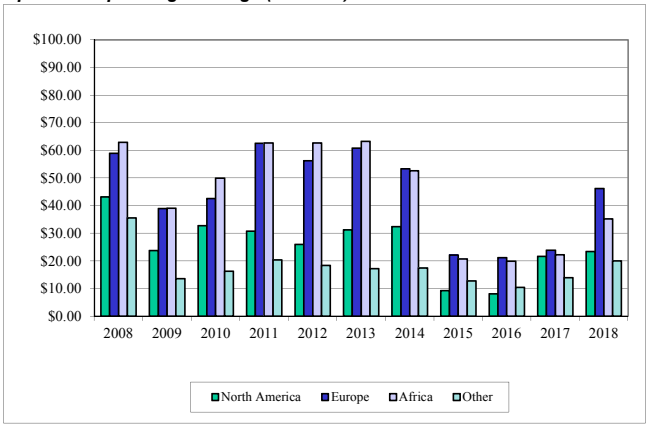
Upstream Net Revenue (US$/boe)



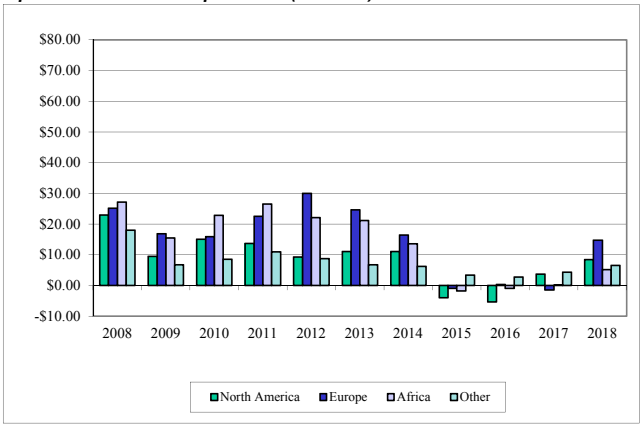
Production Costs (US$/boe)



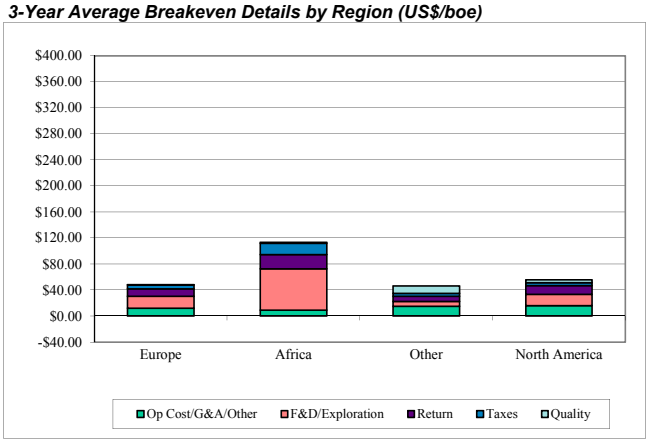
Upstream Operating Earnings (US$/boe)



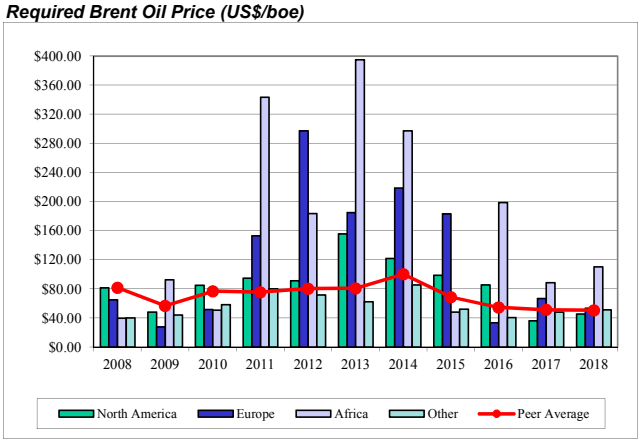
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

BP PLC (BP - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	40,239	25,086	29,217	30,709	29,368	28,047	28,781	21,286	15,607	21,261	27,834
Midstream / Downstream Revenue	320,904	214,186	267,890	344,808	346,212	350,150	323,659	200,501	166,392	218,053	270,115
Other	5,910	6,866	11,821	10,946	12,705	4,128	4,500	2,918	2,969	3,401	5,789
Total Revenue and Other Income	367,053	246,138	308,928	386,463	388,285	382,325	356,940	224,705	184,968	242,715	303,738
Crude Oil and Product Purchases	266,982	163,772	216,211	285,618	293,242	298,351	281,907	164,790	132,219	179,716	229,878
Production and Transportation Expenses	35,709	26,954	69,859	32,425	42,069	34,574	30,333	38,076	29,760	26,004	24,541
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	882	1,116	843	1,520	1,475	3,441	3,632	2,353	1,721	2,080	1,445
General and Administrative	15,412	14,038	12,555	13,958	13,357	13,070	12,696	11,553	10,495	10,508	12,179
Depreciation, Depletion and Amortization	10,985	12,106	11,164	11,135	12,481	13,510	15,163	15,219	14,505	15,584	15,457
Interest, net	956	1,302	1,123	983	924	291	305	736	1,169	1,417	2,655
Other	1,844	1,726	1,998	1,990	5,928	(11,133)	7,954	1,549	(2,606)	226	860
Earnings Before Income Tax	34,283	25,124	(4,825)	38,834	18,809	30,221	4,950	(9,571)	(2,295)	7,180	16,723
Current Income Taxes	13,383	5,745	6,692	7,588	6,884	5,785	4,492	1,581	1,639	4,266	5,996
Future Income Taxes	(766)	2,620	(8,193)	5,149	109	678	(3,545)	(4,752)	(4,106)	(554)	1,149
Total Income Taxes	12,617	8,365	(1,501)	12,737	6,993	6,463	947	(3,171)	(2,467)	3,712	7,145
Minority Interest	(509)	(181)	(395)	(397)	(234)	(307)	(223)	(82)	(57)	(79)	(195)
Earnings From Continuing Operations	21,157	16,578	(3,719)	25,700	11,582	23,451	3,780	(6,482)	115	3,389	9,383
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	21,157	16,578	(3,719)	25,700	11,582	23,451	3,780	(6,482)	115	3,389	9,383
Preferred Stock Dividends	2	2	2	2	2	2	2	2	1	1	1
Net Earnings to Common Shareholders	21,155	16,576	(3,721)	25,698	11,580	23,449	3,778	(6,484)	114	3,388	9,382

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	21,157	16,578	(3,719)	25,700	11,582	23,451	3,780	(6,482)	115	3,389	9,383
Charges and Credits Not Impacting Cash	11,543	14,900	(1,266)	14,789	13,346	5,222	22,422	12,864	8,978	16,903	18,095
Other	518	71	(749)	(639)	(2,163)	(871)	(529)	708	776	279	4,921
Cash Flow From Operations	33,218	31,549	(5,734)	39,850	22,765	27,802	25,673	7,090	9,869	20,571	32,399
Change in Working Capital / Other	4,877	(3,833)	19,350	(17,696)	(2,368)	(6,702)	7,081	12,043	822	(1,640)	(9,526)
Net Cash From Operating Activities	38,095	27,716	13,616	22,154	20,397	21,100	32,754	19,133	10,691	18,931	22,873
Total Capital Expenditures	(22,658)	(20,650)	(18,421)	(17,845)	(23,078)	(24,520)	(22,546)	(18,648)	(16,701)	(16,562)	(16,707)
Acquisitions, net	(556)	2,682	14,486	(8,177)	11,330	21,932	3,360	2,815	2,630	3,414	(4,135)
Other	447	(165)	(25)	(611)	(1,214)	(5,267)	(388)	(1,467)	(682)	(929)	(729)
Net Cash From Investing Activities	(22,767)	(18,133)	(3,960)	(26,633)	(12,962)	(7,855)	(19,574)	(17,300)	(14,753)	(14,077)	(21,571)
Net Change in Debt	2,825	1,141	3,613	4,725	3,236	836	5,419	2,220	5,808	2,278	3,145
Net Change in Common Stock	(2,567)	207	169	74	122	(5,358)	(4,589)	-	-	(343)	(355)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(10,767)	(10,899)	(2,942)	(4,317)	(5,376)	(5,910)	(6,105)	(6,750)	(4,718)	(6,294)	(6,869)
Other	-	-	-	-	-	32	9	(5)	887	1,063	0
Net Cash From Financing Activities	(10,509)	(9,551)	840	482	(2,018)	(10,400)	(5,266)	(4,535)	1,977	(3,296)	(4,079)
Effect of Exchange Rate on Cash	(184)	110	(279)	(492)	64	40	(671)	(672)	(820)	544	(330)
Net Increase/(Decrease) in Cash	4,635	142	10,217	(4,489)	5,481	2,885	7,243	(3,374)	(2,905)	2,102	(3,107)
Cash and Equivalents, Beginning of Year	3,562	8,197	8,339	18,556	14,067	19,635	22,520	29,763	26,389	23,484	25,575
Cash and Equivalents, End of Year	8,197	8,339	18,556	14,067	19,548	22,520	29,763	26,389	23,484	25,586	22,468

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

BP PLC (BP - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	66,384	67,653	96,853	89,164	91,666	96,840	87,262	70,024	67,813	74,968	71,310
Net Property, Plant and Equipment	103,200	108,275	110,163	119,214	120,448	133,690	130,692	129,758	129,757	129,471	135,261
Other Assets	58,654	60,040	65,246	84,690	88,079	75,160	66,351	62,050	65,746	97,662	98,073
Total Assets	228,238	235,968	272,262	293,068	300,193	305,690	284,305	261,832	263,316	276,515	282,176
Total Current Liabilities	69,793	59,320	83,879	84,318	77,586	72,812	63,615	54,724	58,354	64,726	68,237
Long-term Debt	17,464	25,518	30,710	35,169	38,767	40,811	45,977	46,224	51,666	55,491	56,426
Deferred Income Taxes	16,198	18,662	10,908	15,078	15,064	17,439	13,893	9,599	7,238	7,982	9,812
Other Liabilities and Deferred Credits	32,674	30,355	50,874	46,021	49,156	44,221	48,178	52,898	49,215	47,912	46,153
Total Liabilities	136,129	133,855	176,371	180,586	180,573	175,283	171,663	163,445	166,473	176,111	180,628
Minority Interests	806	500	904	1,017	1,206	1,105	1,201	1,171	1,557	1,913	2,104
Common Shares	5,176	5,179	5,183	5,224	5,261	5,108	5,002	5,028	5,263	5,322	5,381
Contributed Surplus (Paid-in Capital)	9,763	9,847	9,987	9,952	9,974	10,061	38,900	38,874	40,859	40,800	40,971
Preferred Stock	21	21	21	21	21	21	21	21	21	21	21
Retained Earnings	86,127	96,434	89,804	106,241	113,153	102,082	92,564	81,368	75,638	75,226	78,748
Other / Comprehensive Income (Loss)	(9,784)	(9,868)	(10,008)	(9,973)	(9,995)	12,030	(25,046)	(28,075)	(26,495)	(22,878)	(25,677)
Total Shareholders' Equity	91,303	101,613	94,987	111,465	118,414	129,302	111,441	97,216	95,286	98,491	99,444
Total Liabilities and Shareholders' Equity	228,238	235,968	272,262	293,068	300,193	305,690	284,305	261,832	263,316	276,515	282,176
Return on Capital Employed (ROCE)	**19.9%**	**15.1%**	**-2.5%**	**20.7%**	**8.5%**	**16.4%**	**2.9%**	**-4.6%**	**0.0%**	**2.9%**	**7.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	64,941	50,835	59,713	72,133	65,634	64,885	56,873	36,438	30,858	43,829	55,825	130,512	223,823
Production Costs	13,326	15,294	18,007	27,751	28,202	27,058	20,409	15,177	12,613	16,153	17,876	46,642	82,228
Exploration	882	1,176	905	1,603	1,600	3,568	3,699	2,408	1,784	2,207	1,653	5,644	11,751
DD&A	7,883	10,579	9,607	9,905	11,310	12,427	13,978	13,945	13,218	15,156	14,887	43,261	71,184
G&A/Other	8,701	3,563	5,055	6,180	3,639	2,661	2,881	2,524	2,477	2,913	3,958	9,348	14,753
Pre-tax Results Of Operations	34,149	20,223	26,139	26,694	20,883	19,171	15,906	2,384	766	7,400	17,451	25,617	43,907
Income Taxes	13,762	6,706	9,251	9,467	7,023	7,400	6,103	1,040	173	2,834	7,636	10,642	17,785
Results Of Operations	20,387	13,517	16,888	17,227	13,860	11,771	9,803	1,344	593	4,566	9,815	14,975	26,122

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	23,620	16,655	20,510	19,885	16,186	14,998	16,131	8,094	6,920	10,014	13,068	30,002	54,227
Production Costs	5,605	3,755	4,202	5,322	5,397	4,845	4,216	3,069	2,793	2,424	3,218	8,435	15,720
Exploration	305	743	490	1,074	653	465	1,357	1,068	754	321	655	1,730	4,155
DD&A	2,729	4,027	3,572	3,029	3,197	3,268	3,809	3,684	4,006	4,354	4,022	12,382	19,875
G&A/Other	3,440	2,498	3,698	4,694	3,565	2,241	2,299	1,676	1,258	1,346	2,251	4,855	8,830
Pre-tax Results Of Operations	11,541	5,632	8,548	5,766	3,374	4,179	4,450	-1,403	-1,891	1,569	2,922	2,600	5,647
Income Taxes	3,963	1,777	2,995	1,850	1,025	1,532	1,632	-434	-489	560	420	492	1,690
Results Of Operations	7,578	3,855	5,553	3,916	2,349	2,647	2,818	-969	-1,402	1,009	2,502	2,108	3,957

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	41,321	34,180	39,203	52,248	49,448	49,887	40,742	28,344	23,938	33,815	42,757	100,510	169,596
Production Costs	7,721	11,539	13,805	22,429	22,805	22,213	16,193	12,108	9,820	13,729	14,658	38,207	66,508
Exploration	577	433	415	529	947	3,103	2,342	1,340	1,030	1,886	998	3,914	7,596
DD&A	5,154	6,552	6,035	6,876	8,113	9,159	10,169	10,261	9,212	10,802	10,865	30,879	51,309
G&A/Other	5,261	1,065	1,357	1,486	74	420	582	848	1,219	1,567	1,707	4,493	5,923
Pre-tax Results Of Operations	22,608	14,591	17,591	20,928	17,509	14,992	11,456	3,787	2,657	5,831	14,529	23,017	38,260
Income Taxes	9,799	4,928	6,256	7,617	5,997	5,868	4,471	1,474	662	2,273	7,215	10,151	16,095
Results Of Operations	12,809	9,663	11,335	13,311	11,512	9,124	6,985	2,313	1,995	3,558	7,314	12,866	22,165

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

BP PLC (BP - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$70.52	$34.77	$42.65	$57.04	$53.35	$54.37	$49.04	$30.14	$25.53	$33.05	$41.19	$33.55	$35.76
Production Costs	$14.47	$10.46	$12.86	$21.95	$22.93	$22.67	$17.60	$12.56	$10.44	$12.18	$13.19	$11.99	$13.14
Exploration	$0.96	$0.80	$0.65	$1.27	$1.30	$2.99	$3.19	$1.99	$1.48	$1.66	$1.22	$1.45	$1.88
DD&A	$8.56	$7.24	$6.86	$7.83	$9.19	$10.41	$12.05	$11.54	$10.94	$11.43	$10.99	$11.12	$11.37
G&A/Other	$9.45	$2.44	$3.61	$4.89	$2.96	$2.23	$2.48	$2.09	$2.05	$2.20	$2.92	$2.40	$2.36
Pre-tax Results Of Operations	$37.08	$13.83	$18.67	$21.11	$16.98	$16.06	$13.71	$1.97	$0.63	$5.58	$12.88	$6.59	$7.02
Income Taxes	$14.95	$4.59	$6.61	$7.49	$5.71	$6.20	$5.26	$0.86	$0.14	$2.14	$5.63	$2.74	$2.84
Results Of Operations	$22.14	$9.25	$12.06	$13.62	$11.27	$9.86	$8.45	$1.11	$0.49	$3.44	$7.24	$3.85	$4.17

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$71.58	$40.94	$55.53	$69.61	$63.98	$62.88	$63.30	$33.13	$26.48	$36.66	$44.05	$36.10	$40.76
Production Costs	$16.98	$9.23	$11.38	$18.63	$21.33	$20.31	$16.54	$12.56	$10.69	$8.87	$10.85	$10.15	$11.82
Exploration	$0.92	$1.83	$1.33	$3.76	$2.58	$1.95	$5.33	$4.37	$2.89	$1.18	$2.21	$2.08	$3.12
DD&A	$8.27	$9.90	$9.67	$10.60	$12.64	$13.70	$14.95	$15.08	$15.33	$15.94	$13.56	$14.90	$14.94
G&A/Other	$10.42	$6.14	$10.01	$16.43	$14.09	$9.40	$9.02	$6.86	$4.81	$4.93	$7.59	$5.84	$6.64
Pre-tax Results Of Operations	$34.97	$13.84	$23.14	$20.18	$13.34	$17.52	$17.46	-$5.74	-$7.24	$5.74	$9.85	$3.13	$4.24
Income Taxes	$12.01	$4.37	$8.11	$6.48	$4.05	$6.43	$6.41	-$1.77	-$1.87	$2.05	$1.42	$0.59	$1.27
Results Of Operations	$22.96	$9.47	$15.03	$13.71	$9.28	$11.10	$11.06	-$3.97	-$5.37	$3.69	$8.43	$2.54	$2.97

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$69.94	$32.39	$38.04	$53.38	$50.60	$52.24	$45.02	$29.39	$25.27	$32.12	$40.39	$32.86	$34.41
Production Costs	$13.07	$10.94	$13.39	$22.91	$23.34	$23.26	$17.89	$12.55	$10.37	$13.04	$13.85	$12.49	$13.50
Exploration	$0.98	$0.41	$0.40	$0.54	$0.97	$3.25	$2.59	$1.39	$1.09	$1.79	$0.94	$1.28	$1.54
DD&A	$8.72	$6.21	$5.86	$7.02	$8.30	$9.59	$11.24	$10.64	$9.73	$10.26	$10.26	$10.10	$10.41
G&A/Other	$8.90	$1.01	$1.32	$1.52	$0.08	$0.44	$0.64	$0.88	$1.29	$1.49	$1.61	$1.47	$1.20
Pre-tax Results Of Operations	$38.26	$13.83	$17.07	$21.38	$17.92	$15.70	$12.66	$3.93	$2.81	$5.54	$13.73	$7.53	$7.76
Income Taxes	$16.59	$4.67	$6.07	$7.78	$6.14	$6.14	$4.94	$1.53	$0.70	$2.16	$6.82	$3.32	$3.27
Results Of Operations	$21.68	$9.16	$11.00	$13.60	$11.78	$9.55	$7.72	$2.40	$2.11	$3.38	$6.91	$4.21	$4.50

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$74.79	$47.85	$61.82	$86.00	$80.83	$84.78	$73.07	$40.72	$36.13	$45.37	$58.94	$47.19	$49.78
Production Costs	$15.40	$12.00	$12.45	$21.28	$26.05	$29.84	$25.86	$14.55	$8.26	$12.48	$8.63	$9.73	$13.22
Exploration	$0.93	$0.50	$0.81	$0.48	$2.00	$5.92	$3.09	$1.95	$2.40	$6.65	$2.87	$3.91	$3.37
DD&A	$9.56	$11.39	$11.27	$13.64	$18.57	$19.81	$25.88	$23.64	$20.31	$25.30	$22.00	$22.49	$23.25
G&A/Other	-$0.54	-$3.63	$5.92	$1.61	-$3.50	-$11.76	-$9.24	$2.04	$4.24	$2.33	$1.18	$2.55	$0.64
Pre-tax Results Of Operations	$49.43	$27.58	$31.38	$48.98	$37.71	$40.96	$27.48	-$1.46	$0.92	-$1.40	$24.25	$8.51	$9.30
Income Taxes	$24.24	$10.73	$15.43	$26.47	$7.73	$16.33	$10.99	-$0.54	$0.52	$0.03	$9.47	$3.56	$3.83
Results Of Operations	$25.20	$16.85	$15.95	$22.51	$29.98	$24.63	$16.49	-$0.91	$0.40	-$1.43	$14.79	$4.95	$5.48

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$72.89	$47.57	$60.01	$76.98	$78.87	$80.72	$73.64	$40.99	$33.91	$38.32	$45.43	$39.46	$45.47
Production Costs	$6.53	$6.03	$7.49	$10.74	$11.52	$13.49	$12.87	$10.69	$8.98	$6.02	$6.77	$7.16	$8.81
Exploration	$1.59	$1.46	$1.51	$1.53	$2.70	$3.22	$7.18	$7.03	$0.64	$8.27	$2.57	$4.03	$5.15
DD&A	$15.82	$13.56	$14.15	$15.64	$19.86	$26.03	$27.90	$23.97	$21.62	$22.05	$23.08	$22.28	$23.55
G&A/Other	$1.83	$0.96	$1.04	$2.02	$1.92	$0.74	$1.00	$2.52	$4.40	$1.72	$0.84	$2.21	$2.07
Pre-tax Results Of Operations	$47.12	$25.56	$35.82	$47.05	$42.86	$37.25	$24.70	-$3.22	-$1.73	$0.26	$12.17	$3.78	$5.88
Income Taxes	$19.94	$10.08	$12.92	$20.55	$20.75	$16.10	$11.12	-$1.45	-$0.78	$0.12	$7.00	$2.23	$2.98
Results Of Operations	$27.18	$15.48	$22.90	$26.50	$22.11	$21.15	$13.59	-$1.77	-$0.95	$0.14	$5.17	$1.55	$2.90

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	$66.78	$27.20	$31.74	$46.97	$43.97	$45.79	$38.65	$26.27	$22.81	$29.95	$37.94	$30.49	$31.21
Production Costs	$14.82	$11.71	$14.42	$24.71	$24.81	$24.34	$18.22	$12.74	$10.79	$14.46	$15.61	$13.72	$14.38
Exploration	$0.74	$0.20	$0.18	$0.41	$0.63	$3.08	$1.81	$0.28	$1.06	$0.17	$0.48	$0.55	$0.74
DD&A	$5.47	$4.03	$3.91	$5.21	$5.77	$6.42	$7.63	$7.06	$6.69	$6.86	$6.89	$6.82	$7.02
G&A/Other	$15.59	$1.71	$0.80	$1.44	$0.11	$1.17	$1.20	$0.48	$0.48	$1.38	$1.79	$1.24	$1.09
Pre-tax Results Of Operations	$30.16	$9.54	$12.42	$15.19	$12.64	$10.78	$9.79	$5.71	$3.78	$7.07	$13.17	$8.16	$7.99
Income Taxes	$12.15	$2.74	$3.87	$4.21	$3.89	$3.97	$3.57	$2.26	$0.98	$2.71	$6.57	$3.51	$3.28
Results Of Operations	$18.01	$6.81	$8.55	$10.98	$8.75	$6.81	$6.23	$3.46	$2.80	$4.36	$6.60	$4.65	$4.72

Note: Worldwide and International Netbacks Calculated excluding equity accounted affiliates
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

BP PLC (BP - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	8,838.4	8,975.3	8,942.5	8,013.7	7,909.6	7,569.9	7,558.9	7,624.7	7,569.9	8,235.6	9,158.9	8,321.5	8,029.6
Liquids Production (b/d)	2,386,301	2,509,589	2,345,205	2,128,767	2,052,055	2,008,219	1,917,808	2,041,096	2,049,315	2,260,274	2,186,301	2,165,297	2,090,959
Total Production (boe/d)	3,859,361	4,005,479	3,835,616	3,464,384	3,370,320	3,269,863	3,177,626	3,311,872	3,310,959	3,632,877	3,712,785	3,552,207	3,429,224
% Gas Production	38%	37%	39%	39%	39%	39%	40%	38%	38%	38%	41%	39%	39%
% Oil Production	62%	63%	61%	61%	61%	61%	60%	62%	62%	62%	59%	61%	61%
Proven Reserves:													
Gas Reserves (bcf)	45,208.0	45,130.0	42,700.0	41,659.0	40,305.0	45,975.0	44,697.0	44,195.0	43,366.0	45,057.0	49,232.0	45,885.0	45,309.4
Oil Reserves (mmbbls)	10,353.0	10,511.0	10,709.0	10,565.0	10,050.0	10,069.0	9,814.0	9,556.0	10,331.0	10,667.0	11,435.0	10,811.0	10,360.6
Total Proven Reserves (mmboe)	17,887.7	18,032.7	17,825.7	17,508.2	16,767.5	17,731.5	17,263.5	16,921.8	17,558.7	18,176.5	19,640.3	18,458.5	17,912.2
% Gas Reserves	42%	42%	40%	40%	40%	43%	43%	44%	41%	41%	42%	41%	42%
% Oil Reserves	58%	58%	60%	60%	60%	57%	57%	56%	59%	59%	58%	59%	58%
Proven Reserve Life Index	12.7	12.3	12.7	13.8	13.6	14.9	14.9	14.0	14.5	13.7	14.5	14.2	14.3
Proven Reserve Additions:													
Gas Additions (bcf)	3,534.0	3,198.0	834.0	1,884.0	1,533.0	8,433.0	1,481.0	2,282.0	1,933.0	4,697.0	7,518.0	14,148.0	17,911.0
Oil Additions (mmbbls)	1,151.0	1,074.0	1,054.0	633.0	234.0	752.0	445.0	488.0	1,520.0	1,161.0	1,566.0	4,247.0	5,180.0
Total Additions (mmboe)	1,740.0	1,607.0	1,193.0	947.0	489.5	2,157.5	691.8	868.3	1,842.2	1,943.8	2,819.0	6,605.0	8,165.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	1,321.3	1,212.3	1,726.7	606.8	1,024.7	1,077.8	548.7	444.0	625.8	982.7	920.3	2,528.8	3,521.5
Acquisitions	230.0	33.7	101.3	207.5	66.3	6,100.8	71.7	146.8	760.8	217.7	1,698.3	2,676.8	2,895.3
Dispositions	(200.5)	(311.8)	(398.5)	(565.8)	(513.5)	(5,477.2)	(112.3)	(20.5)	(241.7)	(173.5)	(227.2)	(642.3)	(775.2)
Revisions of Estimates	389.2	672.8	(236.5)	698.5	(88.0)	456.0	183.8	298.0	697.2	917.0	427.5	2,041.7	2,523.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	75.9%	75.4%	144.7%	64.1%	209.3%	50.0%	79.3%	51.1%	34.0%	50.6%	32.6%	38.3%	43.1%
Acquisitions	13.2%	2.1%	8.5%	21.9%	13.6%	282.8%	10.4%	16.9%	41.3%	11.2%	60.2%	40.5%	35.5%
Dispositions	-11.5%	-19.4%	-33.4%	-59.8%	-104.9%	-253.9%	-16.2%	-2.4%	-13.1%	-8.9%	-8.1%	-9.7%	-9.5%
Revisions of Estimates	22.4%	41.9%	-19.8%	73.8%	-18.0%	21.1%	26.6%	34.3%	37.8%	47.2%	15.2%	30.9%	30.9%
Additions as % of Production:													
Gas	109.5%	97.6%	25.6%	64.4%	53.1%	305.2%	53.7%	82.0%	70.0%	156.3%	224.9%	155.3%	122.2%
Oil	132.1%	117.2%	123.1%	81.5%	31.2%	102.6%	63.6%	65.5%	203.2%	140.7%	196.2%	179.1%	135.7%
Total	123.5%	109.9%	85.2%	74.9%	39.8%	180.8%	59.6%	71.8%	152.4%	146.6%	208.0%	169.8%	130.5%
Additions as % of Reserves:													
Gas	7.8%	7.1%	2.0%	4.5%	3.8%	18.3%	3.3%	5.2%	4.5%	10.4%	15.3%	30.8%	39.5%
Oil	11.1%	10.2%	9.8%	6.0%	2.3%	7.5%	4.5%	5.1%	14.7%	10.9%	13.7%	39.3%	50.0%
Total	9.7%	8.9%	6.7%	5.4%	2.9%	12.2%	4.0%	5.1%	10.5%	10.7%	14.4%	35.8%	45.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$2,290.0	$2,906.0	$2,802.0	$2,576.0	$4,581.0	$4,964.0	$3,048.0	$1,926.0	$1,533.0	$1,941.0	$1,592.0	$5,066.0	$10,040.0
Development	$15,026.0	$12,392.0	$12,044.0	$12,724.0	$15,247.0	$16,664.0	$18,704.0	$16,731.0	$14,143.0	$15,277.0	$14,210.0	$43,630.0	$79,065.0
Acquisitions	$4,499.0	$907.0	$5,321.0	$9,943.0	$2,074.0	$2,960.0	$1,124.0	$395.0	$5,432.0	$4,295.0	$13,508.0	$23,235.0	$24,754.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$21,815.0	$16,205.0	$20,167.0	$25,243.0	$21,902.0	$24,588.0	$22,876.0	$19,052.0	$21,108.0	$21,513.0	$29,310.0	$71,931.0	$113,859.0
Expenditures as % of Total:													
Exploration	10.5%	17.9%	13.9%	10.2%	20.9%	20.2%	13.3%	10.1%	7.3%	9.0%	5.4%	7.0%	8.8%
Development	68.9%	76.5%	59.7%	50.4%	69.6%	67.8%	81.8%	87.8%	67.0%	71.0%	48.5%	60.7%	69.4%
Acquisitions	20.6%	5.6%	26.4%	39.4%	9.5%	12.0%	4.9%	2.1%	25.7%	20.0%	46.1%	32.3%	21.7%
Cashflow (US$million)	$28,270.0	$24,096.4	$26,494.9	$27,131.6	$25,170.4	$24,198.0	$23,780.9	$15,289.0	$13,810.8	$19,722.4	$24,702.5	$58,235.7	$97,305.6
Cashflow (US$/boe)	$20.07	$16.48	$18.92	$21.46	$20.46	$20.27	$20.50	$12.65	$11.43	$14.87	$18.23	$14.97	$15.55
Recycle Ratio	1.8x	2.0x	1.5x	1.3x	0.9x	6.3x	0.7x	0.6x	1.1x	1.5x	1.9x	1.5x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$10.12	$8.11	$9.96	$11.72	$21.17	$14.10	$29.70	$25.14	$11.85	$9.06	$11.72	$10.65	$14.74
Acquisition Costs	$19.56	$26.94	$52.51	$47.92	$31.27	$0.49	$15.68	$2.69	$7.14	$19.73	$7.95	$8.68	$8.55
All Sources (incl. revisions)	$11.24	$8.45	$12.67	$16.69	$21.84	$3.22	$28.45	$21.43	$10.13	$10.16	$9.62	$9.93	$12.74
Exploration & Development (excl. revisions)	$13.10	$12.62	$8.60	$25.21	$19.35	$20.07	$39.65	$42.02	$25.05	$17.52	$17.17	$19.26	$25.30
Acquisition Costs	$19.56	$26.94	$52.51	$47.92	$31.27	$0.49	$15.68	$2.69	$7.14	$19.73	$7.95	$8.68	$8.55
All Sources (excl. revisions)	$14.06	$13.01	$11.03	$31.00	$20.08	$3.43	$36.88	$32.25	$15.22	$17.92	$11.19	$13.82	$17.74
Geographically Segmented Costs													
North America	$310.52	$10.52	$24.69	$18.60	-$42.51	-$40.98	$32.87	-$24.58	$184.17	$8.13	$9.39	$10.73	$16.72
Europe	$19.62	$7.82	$10.73	$35.19	-$89.57	-$27.69	-$19.40	-$128.94	$8.46	$20.60	$17.93	$14.55	$34.98
Africa	$7.11	$41.33	$17.29	-$62.63	$75.53	$177.48	$328.89	$14.37	$101.53	$43.87	$63.87	$59.33	$41.20
Other International	$4.81	$4.40	$7.38	$10.93	$6.65	$1.43	$13.13	$9.96	$6.96	$7.68	$6.85	$7.17	$8.25

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

BP PLC (BP - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	14.47	10.46	12.86	21.95	22.93	22.67	17.60	12.56	10.44	12.18	12.18	11.99	13.14
Exploration Expense	0.96	0.80	0.65	1.27	1.30	2.99	3.19	1.99	1.48	1.66	1.66	1.45	1.88
G&A/Other	9.45	2.44	3.61	4.89	2.96	2.23	2.48	2.09	2.05	2.20	2.20	2.40	2.36
F&D Costs	11.24	8.45	12.67	16.69	21.84	3.22	28.45	21.43	10.13	10.16	10.16	9.93	12.74
Return on Capital	9.10	6.61	10.28	14.70	19.09	3.09	27.30	19.28	9.50	8.94	8.94	9.11	11.74
Income Taxes	6.14	3.28	5.63	8.08	9.67	1.94	17.00	14.92	2.78	5.55	5.55	4.88	6.99
Breakeven Oil Price	51.36	32.04	45.70	67.57	77.78	36.14	96.02	72.27	36.37	40.69	40.69	39.76	48.84
Quality Differential	5.04	13.80	16.71	20.44	21.29	21.05	21.09	8.92	8.23	7.88	7.88	8.20	10.92
Required WTI Price	56.40	45.84	62.41	88.02	99.07	57.19	117.11	81.18	44.60	48.57	48.57	47.96	59.76

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	16.98	9.23	11.38	18.63	21.33	20.31	16.54	12.56	10.69	8.87	8.87	10.15	11.82
Exploration Expense	0.92	1.83	1.33	3.76	2.58	1.95	5.33	4.37	2.89	1.18	1.18	2.08	3.12
G&A/Other	10.42	6.14	10.01	16.43	14.09	9.40	9.02	6.86	4.81	4.93	4.93	5.84	6.64
F&D Costs	17.15	10.52	24.69	18.60	17.45	42.33	32.87	30.49	29.43	8.13	8.13	15.65	22.06
Return on Capital	18.43	9.69	23.28	22.95	20.53	47.21	33.21	27.83	23.53	6.23	6.23	13.10	19.43
Income Taxes	9.63	4.47	12.56	10.84	8.97	27.33	19.24	12.45	8.20	3.46	3.46	4.44	7.82
Breakeven Oil Price	73.55	41.88	83.25	91.20	84.95	148.53	116.21	94.57	79.55	32.80	32.80	51.25	70.89
Quality Differential	7.79	6.16	1.96	3.77	6.16	7.29	5.72	4.14	5.72	3.21	3.21	4.64	4.75
Required WTI Price	81.33	48.04	85.20	94.97	91.11	155.82	121.93	98.71	85.26	36.01	36.01	55.89	75.64

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	13.07	10.94	13.39	22.91	23.34	23.26	17.89	12.55	10.37	13.04	13.04	12.49	13.50
Exploration Expense	0.98	0.41	0.40	0.54	0.97	3.25	2.59	1.39	1.09	1.79	1.79	1.28	1.54
G&A/Other	8.90	1.01	1.32	1.52	0.08	0.44	0.64	0.88	1.29	1.49	1.49	1.47	1.20
F&D Costs	6.14	7.47	9.62	16.24	12.64	2.24	26.90	13.01	8.66	10.59	10.59	9.63	11.63
Return on Capital	4.50	5.47	7.33	12.87	10.10	2.07	25.63	11.65	8.51	9.70	9.70	9.06	10.86
Income Taxes	3.44	2.79	4.05	7.37	5.26	1.33	16.41	7.42	2.82	6.20	6.20	5.52	6.74
Breakeven Oil Price	37.03	28.09	36.11	61.45	52.38	32.59	90.07	46.91	32.73	42.82	42.82	39.45	45.46
Quality Differential	3.50	16.75	22.00	25.31	25.21	24.49	25.42	10.12	8.93	9.10	9.10	9.17	12.61
Required WTI Price	40.53	44.84	58.11	86.76	77.59	57.08	115.48	57.03	41.65	51.92	51.92	48.61	58.07

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	15.40	12.00	12.45	21.28	26.05	29.84	25.86	14.55	8.26	12.48	12.48	9.73	13.22
Exploration Expense	0.93	0.50	0.81	0.48	2.00	5.92	3.09	1.95	2.40	6.65	6.65	3.91	3.37
G&A/Other	(0.54)	(3.63)	5.92	1.61	(3.50)	(11.76)	(9.24)	2.04	4.24	2.33	2.33	2.55	0.64
F&D Costs	19.62	7.82	10.73	35.19	105.22	50.38	63.59	73.06	8.46	20.60	20.60	14.55	34.98
Return on Capital	12.08	6.04	10.99	44.95	140.33	68.86	76.75	56.26	6.23	16.29	16.29	11.03	28.94
Income Taxes	11.62	3.85	10.64	52.86	36.21	45.65	51.16	33.33	3.36	8.77	8.77	6.30	17.18
Breakeven Oil Price	59.11	26.58	51.54	156.37	306.30	188.89	211.21	181.18	32.95	67.13	67.13	48.06	98.32
Quality Differential	5.77	1.27	0.28	(3.36)	(8.86)	(3.87)	7.46	1.97	0.34	(0.35)	(0.35)	0.35	2.10
Required WTI Price	64.88	27.86	51.82	153.00	297.44	185.02	218.67	183.16	33.29	66.78	66.78	48.41	100.41

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	6.53	6.03	7.49	10.74	11.52	13.49	12.87	10.69	8.98	6.02	6.02	7.16	8.81
Exploration Expense	1.59	1.46	1.51	1.53	2.70	3.22	7.18	7.03	0.64	8.27	8.27	4.03	5.15
G&A/Other	1.83	0.96	1.04	2.02	1.92	0.74	1.00	2.52	4.40	1.72	1.72	2.21	2.07
F&D Costs	7.11	41.33	17.29	130.22	75.53	177.48	127.75	14.37	101.53	43.87	43.87	59.33	41.20
Return on Capital	4.70	22.98	12.44	110.69	48.22	114.12	79.99	6.62	44.21	15.18	15.18	21.69	16.74
Income Taxes	3.45	14.96	7.02	85.82	45.25	86.90	65.45	5.41	36.18	12.42	12.42	17.75	13.69
Breakeven Oil Price	25.21	87.72	46.79	341.02	185.15	395.96	294.23	46.63	195.93	87.48	87.48	112.17	87.66
Quality Differential	14.33	4.68	3.87	2.51	(1.68)	(0.93)	3.06	1.60	2.91	1.00	1.00	1.18	1.64
Required WTI Price	39.54	92.40	50.67	343.53	183.47	395.03	297.29	48.23	198.85	88.48	88.48	113.35	89.30

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Operating Costs	14.82	11.71	14.42	24.71	24.81	24.34	18.22	12.74	10.79	14.46	15.61	13.72	14.38
Exploration Expense	0.74	0.20	0.18	0.41	0.63	3.08	1.81	0.28	1.06	0.17	0.48	0.55	0.74
G&A/Other	15.59	1.71	0.80	1.44	0.11	1.17	1.20	0.48	0.48	1.38	1.79	1.24	1.09
F&D Costs	4.81	4.40	7.38	10.93	6.65	1.43	13.13	9.96	6.96	7.68	6.85	7.17	8.25
Return on Capital	3.64	3.34	5.48	8.29	5.22	1.37	13.38	9.97	7.75	7.99	7.29	7.72	8.69
Income Taxes	2.45	1.34	2.48	3.18	2.32	0.79	7.66	6.52	2.71	4.97	7.26	4.74	5.33
Breakeven Oil Price	42.05	22.71	30.75	48.98	39.75	32.18	55.40	39.95	29.75	36.65	39.28	35.14	38.48
Quality Differential	(1.85)	21.35	27.45	31.22	31.97	30.20	30.15	12.40	10.73	11.37	12.02	11.37	15.33
Required WTI Price	40.20	44.06	58.20	80.20	71.72	62.38	85.55	52.36	40.47	48.02	51.31	46.52	53.81

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

BP PLC (BP - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.84	17.46	30.86	32.68	31.35	23.69	16.03	13.99	13.99	16.11	18.29	16.18	17.53
Exploration Expense	1.06	0.88	1.78	1.85	4.13	4.29	2.54	1.98	1.98	2.20	1.69	1.96	2.51
G&A/Other	3.22	4.90	6.87	4.22	3.08	3.34	2.67	2.75	2.75	2.90	4.05	3.24	3.15
F&D Costs (1-Year)	10.99	15.21	22.12	37.17	4.13	37.19	28.70	11.83	11.83	13.67	13.63	13.06	16.77
Return on Capital	8.27	12.20	19.42	33.40	3.78	35.62	24.74	10.84	10.84	11.61	12.64	11.68	14.88
Income Taxes	4.10	6.68	10.67	16.92	2.37	22.18	19.14	3.17	3.17	7.20	9.83	6.26	8.86
Breakeven Oil Price	41.49	57.33	91.71	126.24	48.85	126.32	93.83	44.55	44.55	53.69	60.13	52.38	63.71
Quality Differential	18.26	22.69	28.75	30.35	29.12	28.40	11.39	11.04	11.04	10.42	11.77	11.08	14.60
Required WTI Price	59.75	80.02	120.46	156.59	77.97	154.72	105.22	55.59	55.59	64.12	71.90	63.46	78.31

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.84	17.46	30.86	32.68	31.35	23.69	16.03	13.99	13.99	16.11	18.29	16.18	17.53
Exploration Expense	1.06	0.88	1.78	1.85	4.13	4.29	2.54	1.98	1.98	2.20	1.69	1.96	2.51
G&A/Other	3.22	4.90	6.87	4.22	3.08	3.34	2.67	2.75	2.75	2.90	4.05	3.24	3.15
F&D Costs (1-Year)	11.41	19.46	20.88	55.30	6.56	26.71	25.08	12.86	12.86	17.87	19.78	16.62	20.46
Return on Capital	8.58	15.64	18.34	47.74	5.98	24.81	21.65	11.68	11.68	15.04	18.37	14.75	18.33
Income Taxes	4.26	8.57	10.08	24.19	3.76	15.45	16.75	3.41	3.41	9.33	14.29	7.90	10.92
Breakeven Oil Price	42.37	66.92	88.81	165.98	54.87	98.30	84.72	46.67	46.67	63.46	76.48	60.67	72.90
Quality Differential	18.26	22.69	28.75	30.35	29.12	28.40	11.39	11.04	11.04	10.42	11.77	11.08	14.60
Required WTI Price	60.63	89.61	117.56	196.33	83.98	126.70	96.11	57.70	57.70	73.88	88.25	71.75	87.50

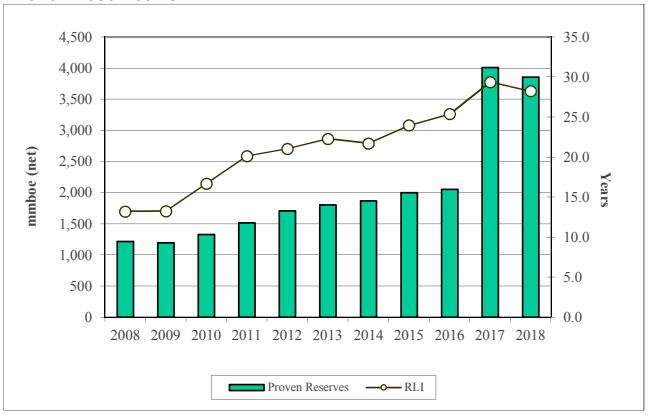
Source: BMO Capital Markets, Company Reports

Cenovus Energy (CVE - TSX, NYSE) US$, net

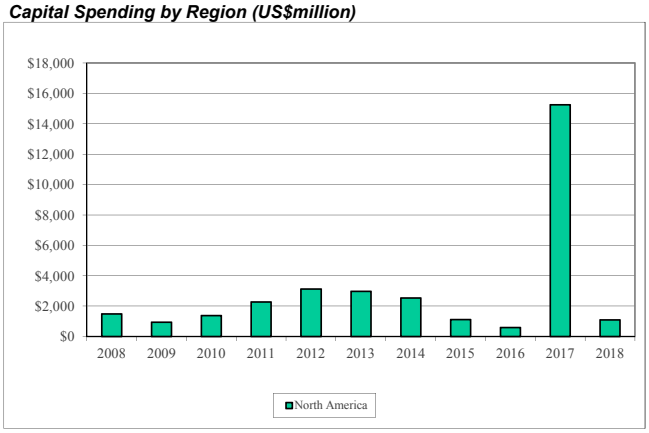
- Cenovus reported a loss from operations of $1.99/boe in 2018 versus a gain of $0.48/boe in 2017. The company's performance was impacted by lower net realizations this year.
- The company's F&D costs increased to $11.22/boe from $6.72/boe last year. On a realized oil:gas price ratio basis, F&D costs came in at $14.24/boe versus $7.40/boe in 2017, while the costs for PD reserves lowered to $13.53/boe from $30.74/boe the previous year.
- Cenovus' 2018 costs imply a Brent breakeven oil price of $98.17/boe on a realized ratio basis on total proved reserves, while the PD cost assessment implied a Brent breakeven oil price of $99.73/boe.
- The company reported ROCE of -8.2% versus a normalized ROCE of 8.8% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

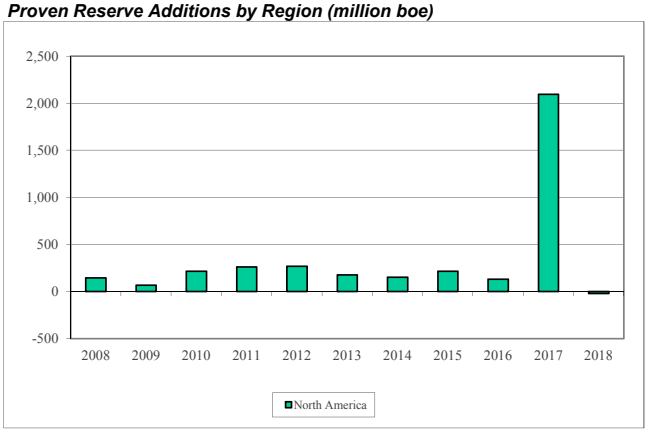
Proven Reserves vs RLI



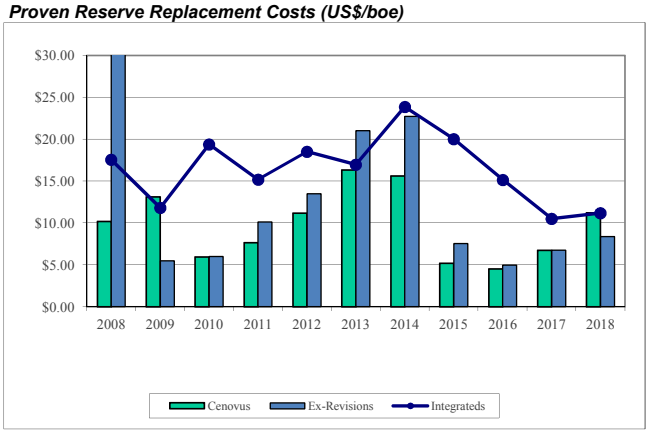
Capital Spending by Region (US$million)



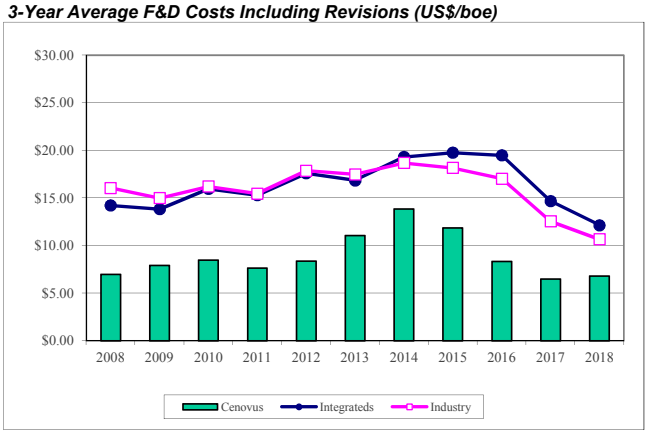
Proven Reserve Additions by Region (million boe)



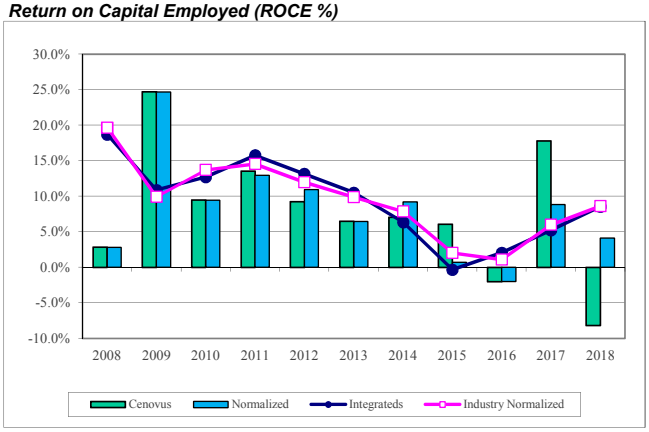
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

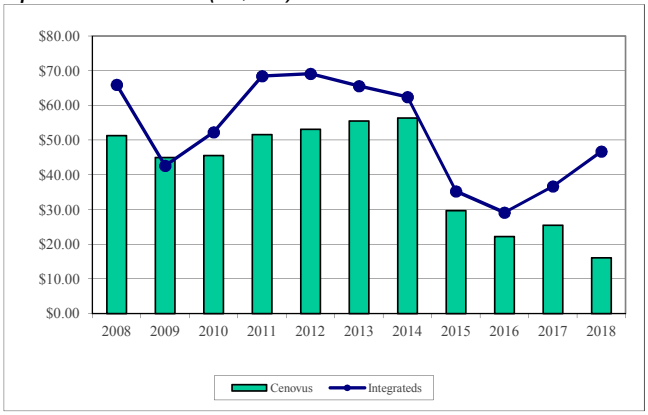
See pages F1 to F4 for analyst coverage.

Cenovus Energy (CVE - TSX, NYSE)

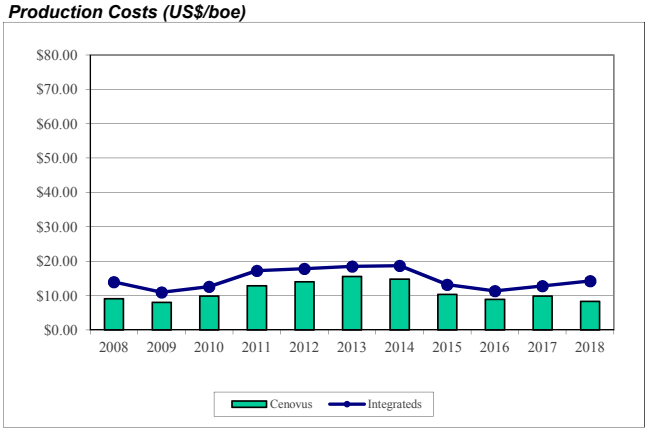
US$/boe, net

Worldwide

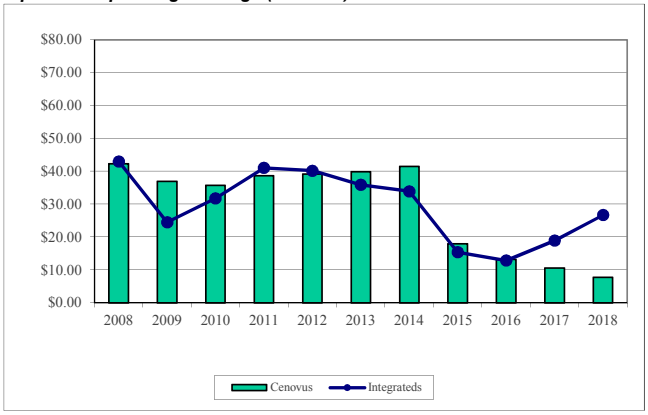
Upstream Net Revenue (US$/boe)



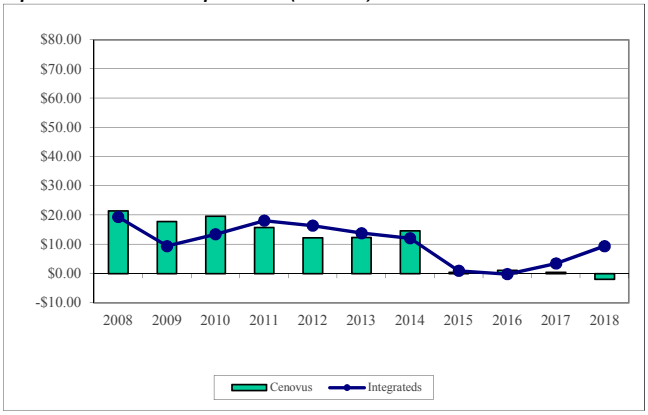
Production Costs (US$/boe)



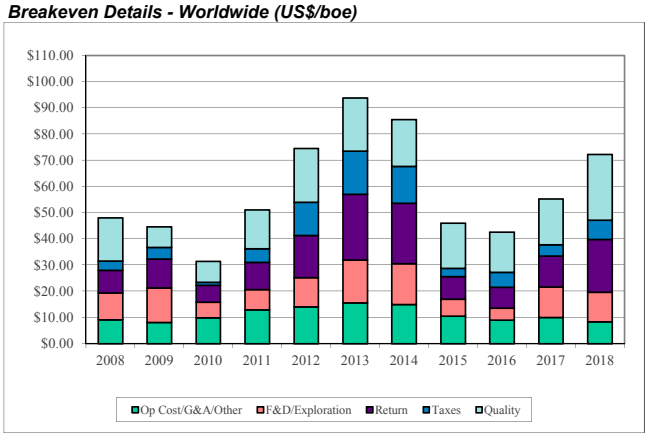
Upstream Operating Earnings (US$/boe)



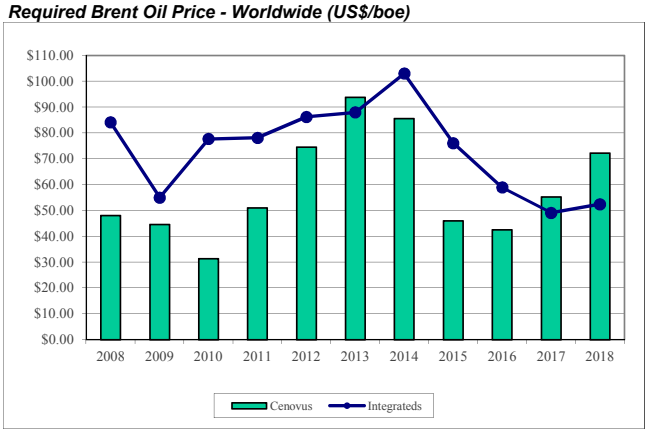
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

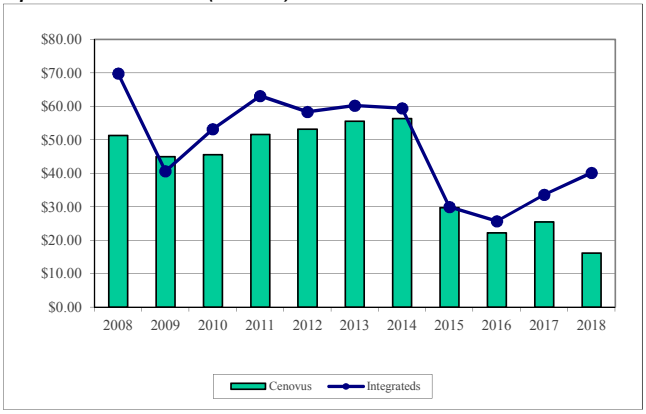
See pages F1 to F4 for analyst coverage.

Cenovus Energy (CVE - TSX, NYSE)

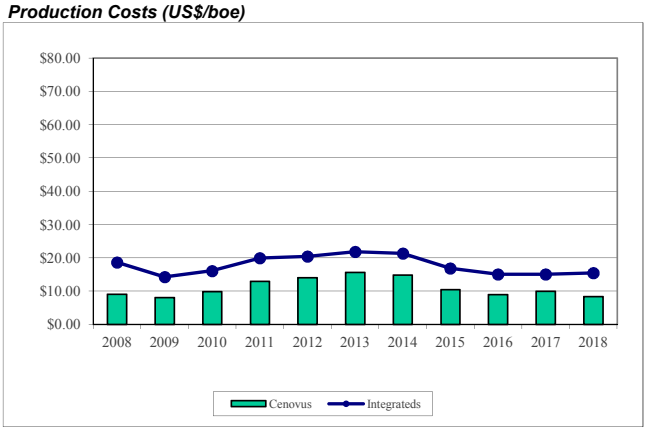
US$/boe, net

North America

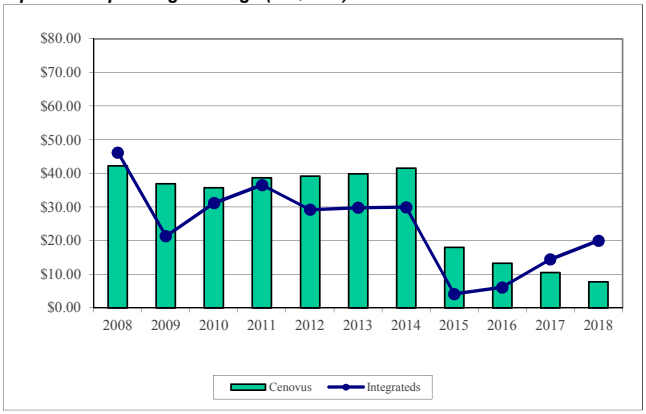
Upstream Net Revenue (US$/boe)



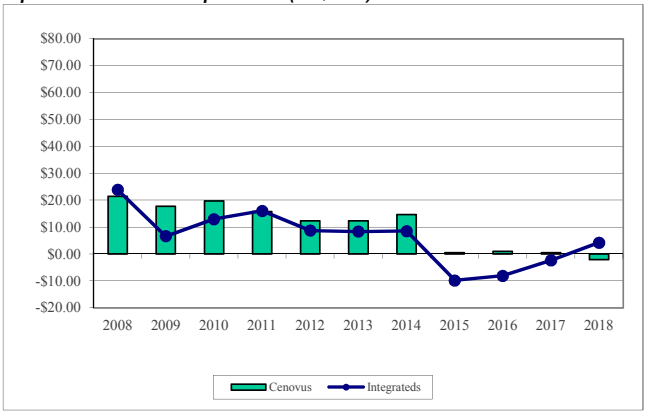
Production Costs (US$/boe)



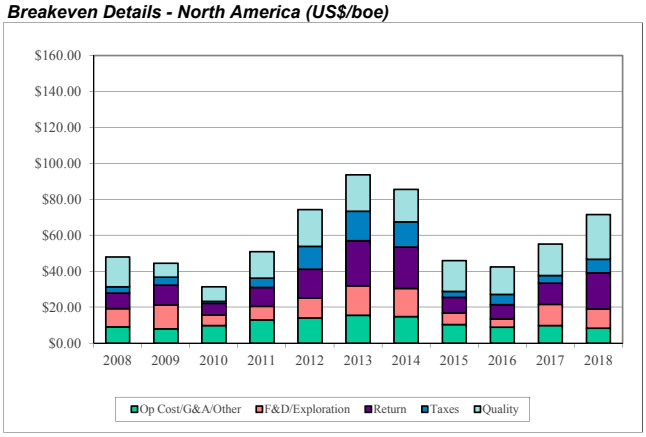
Upstream Operating Earnings (US$/boe)



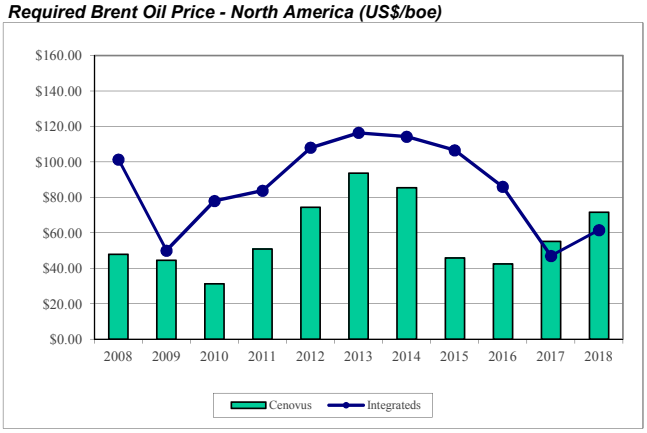
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Cenovus Energy (CVE - TSX, NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	6,972	5,598	4,670	5,190	5,773	6,367	7,061	3,599	3,058	5,896	8,015
Midstream / Downstream Revenue	9,011	5,280	7,990	10,749	11,363	12,340	11,464	6,896	6,376	7,597	8,631
Other	576	(738)	(62)	(60)	(283)	(588)	(735)	(264)	(267)	(351)	(559)
Total Revenue and Other Income	16,559	10,140	12,598	15,879	16,852	18,120	17,790	10,231	9,167	13,142	16,088
Crude Oil and Product Purchases	9,710	5,250	7,331	9,196	9,229	10,100	9,922	5,775	5,272	6,194	6,749
Production and Transportation Expenses	2,261	1,864	2,332	2,807	3,482	3,761	4,115	3,040	2,708	4,393	4,586
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	167	188	244	298	352	339	324	262	246	237	302
Depreciation, Depletion and Amortization	1,357	1,382	1,272	1,310	1,586	1,780	1,762	1,656	1,132	1,417	1,645
Interest, net	218	218	271	327	346	323	373	356	332	450	469
Other	(247)	288	(53)	(292)	80	755	211	(1,278)	178	(1,258)	5,367
Earnings Before Income Tax	3,093	950	1,129	2,233	1,777	1,063	1,082	421	(700)	1,709	(3,030)
Current Income Taxes	340	853	80	156	309	183	83	450	(131)	(197)	(97)
Future Income Taxes	385	(551)	85	582	474	237	325	(513)	(158)	157	(682)
Total Income Taxes	725	302	165	737	783	420	408	(63)	(289)	(40)	(780)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	2,368	648	964	1,495	994	643	674	484	(412)	1,749	(2,251)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	847	191
Cumulative Change in Accounting Principle	(2,246)	1,979	(13)	-	-	-	-	-	-	-	-
Net Earnings	122	2,627	952	1,495	994	643	674	484	(412)	2,595	(2,060)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	122	2,627	952	1,495	994	643	674	484	(412)	2,595	(2,060)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	2,368	648	964	1,495	994	643	674	484	(412)	2,595	(2,060)
Charges and Credits Not Impacting Cash	1,703	792	1,358	1,892	2,060	2,017	2,088	1,313	1,398	1,903	661
Other	(983)	1,032	23	(73)	591	845	389	(472)	88	(2,252)	2,691
Cash Flow From Operations	3,088	2,472	2,345	3,314	3,645	3,505	3,151	1,324	1,075	2,247	1,292
Change in Working Capital / Other	(401)	1,024	174	(3)	(223)	(68)	43	(170)	(425)	112	370
Net Cash From Operating Activities	2,687	3,496	2,519	3,311	3,422	3,437	3,193	1,154	650	2,359	1,663
Total Capital Expenditures	(2,046)	(1,895)	(2,144)	(2,825)	(3,451)	(2,853)	(2,517)	(1,234)	(731)	(1,288)	(1,063)
Acquisitions, net	47	209	300	162	76	251	250	2,619	6	(8,756)	810
Other	35	(94)	100	103	37	1,128	(1,673)	(689)	(91)	123	(221)
Net Cash From Investing Activities	(1,964)	(1,780)	(1,744)	(2,559)	(3,338)	(1,475)	(3,940)	695	(815)	(9,921)	(473)
Net Change in Debt	(471)	(251)	(56)	(9)	1,223	(18)	(16)	(20)	-	2,963	(898)
Net Change in Common Stock	-	1	27	49	37	27	25	1,135	-	2,235	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	(151)	(584)	(610)	(665)	(711)	(729)	(413)	(125)	(173)	(189)
Other	(381)	-	-	6	(2)	(3)	(2)	(2)	(2)	(2)	(1)
Net Cash From Financing Activities	(852)	(1,730)	(613)	(565)	592	(705)	(722)	700	(127)	5,024	(1,088)
Effect of Exchange Rate on Cash	(20)	9	(21)	10	(11)	(2)	47	(27)	1	140	31
Net Increase/(Decrease) in Cash	(149)	(5)	141	197	665	1,255	(1,421)	2,523	(291)	(2,398)	132
Cash and Equivalents, Beginning of Year	302	153	148	291	501	1,161	2,381	800	3,215	2,810	470
Cash and Equivalents, End of Year	153	148	291	501	1,161	2,381	800	3,215	2,810	470	603

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cenovus Energy (CVE - TSX, NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	2,248	2,284	2,695	3,957	4,582	5,448	3,799	5,069	5,154	3,862	2,466
Net Property, Plant and Equipment	12,260	14,537	15,081	14,491	16,162	18,266	18,284	14,809	13,607	25,653	22,150
Other Assets	3,958	3,731	3,680	4,005	3,487	784	283	320	321	2,048	2,532
Total Assets	18,466	20,552	21,456	22,453	24,231	24,498	22,366	20,198	19,082	31,563	27,148
Total Current Liabilities	1,798	1,836	2,413	3,427	3,272	3,670	2,678	1,455	2,018	3,421	2,007
Long-term Debt	2,952	3,493	3,333	3,568	4,682	4,853	4,943	5,110	4,784	7,335	6,547
Deferred Income Taxes	2,411	2,357	2,334	2,125	2,570	2,780	2,991	2,205	1,953	4,328	3,752
Other Liabilities and Deferred Credits	3,557	3,686	3,643	3,816	3,895	3,535	2,529	1,724	1,571	1,072	1,361
Total Liabilities	10,718	11,372	11,724	12,937	14,419	14,838	13,141	10,494	10,326	16,156	13,666
Minority Interests											
Common Shares	-	2,223	3,608	3,824	3,831	3,746	3,522	4,334	4,181	8,513	8,521
Contributed Surplus (Paid-in Capital)	-	4,751	5,725	4,155	4,157	4,098	3,886	3,391	3,286	3,363	3,371
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	39	424	1,416	1,729	1,612	1,448	1,180	601	3,036	790
Other / Comprehensive Income (Loss)	7,748	2,167	(26)	120	95	204	369	799	687	496	801
Total Shareholders' Equity	7,748	9,180	9,732	9,516	9,812	9,660	9,225	9,704	8,756	15,407	13,482
Total Liabilities and Shareholders' Equity	18,466	20,552	21,456	22,453	24,231	24,498	22,366	20,198	19,082	31,563	27,148
Return on Capital Employed (ROCE)	**2.8%**	**24.7%**	**9.5%**	**13.5%**	**9.2%**	**6.5%**	**7.0%**	**6.0%**	**-2.0%**	**17.8%**	**-8.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	4,732	4,058	3,636	3,888	4,306	4,490	4,853	2,478	1,797	3,481	2,199	7,476	14,807
Production Costs	836	728	787	973	1,135	1,261	1,278	869	723	1,353	1,138	3,214	5,361
Exploration	0	0	0	0	0	0	0	108	2	686	5	692	800
DD&A	1,103	1,090	1,009	1,138	1,388	1,569	1,546	1,445	923	1,352	1,429	3,704	6,694
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	2,793	2,240	1,840	1,776	1,783	1,660	2,029	56	149	89	-372	-134	1,951
Income Taxes	815	634	269	587	786	655	766	15	61	24	-100	-15	765
Results Of Operations	1,978	1,606	1,571	1,190	997	1,004	1,263	41	88	66	-272	-118	1,185

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	4,732	4,058	3,636	3,888	4,306	4,490	4,853	2,478	1,797	3,481	2,199	7,476	14,807
Production Costs	836	728	787	973	1,135	1,261	1,278	869	723	1,353	1,138	3,214	5,361
Exploration	0	0	0	0	0	0	0	108	2	686	5	692	800
DD&A	1,103	1,090	1,009	1,138	1,388	1,569	1,546	1,445	923	1,352	1,429	3,704	6,694
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	2,793	2,240	1,840	1,776	1,783	1,660	2,029	56	149	89	-372	-134	1,951
Income Taxes	815	634	269	587	786	655	766	15	61	24	-100	-15	765
Results Of Operations	1,978	1,606	1,571	1,190	997	1,004	1,263	41	88	66	-272	-118	1,185

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Cenovus Energy (CVE - TSX, NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$51.34	$45.01	$45.59	$51.62	$53.16	$55.51	$56.36	$29.67	$22.22	$25.49	$16.11	$21.13	$28.28
Production Costs	$9.07	$8.07	$9.86	$12.92	$14.01	$15.59	$14.84	$10.41	$8.94	$9.91	$8.34	$9.08	$10.24
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.29	$0.02	$5.03	$0.03	$1.96	$1.53
DD&A	$11.97	$12.09	$12.65	$15.11	$17.14	$19.40	$17.95	$17.30	$11.42	$9.90	$10.47	$10.47	$12.79
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$30.30	$24.84	$23.07	$23.59	$22.02	$20.52	$23.56	$0.67	$1.84	$0.66	-$2.73	-$0.38	$3.73
Income Taxes	$8.84	$7.03	$3.37	$7.79	$9.71	$8.10	$8.89	$0.18	$0.76	$0.18	-$0.74	-$0.04	$1.46
Results Of Operations	$21.46	$17.81	$19.70	$15.80	$12.31	$12.42	$14.67	$0.49	$1.08	$0.48	-$1.99	-$0.33	$2.26

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$51.34	$45.01	$45.59	$51.62	$53.16	$55.51	$56.36	$29.67	$22.22	$25.49	$16.11	$21.13	$28.28
Production Costs	$9.07	$8.07	$9.86	$12.92	$14.01	$15.59	$14.84	$10.41	$8.94	$9.91	$8.34	$9.08	$10.24
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.29	$0.02	$5.03	$0.03	$1.96	$1.53
DD&A	$11.97	$12.09	$12.65	$15.11	$17.14	$19.40	$17.95	$17.30	$11.42	$9.90	$10.47	$10.47	$12.79
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$30.30	$24.84	$23.07	$23.59	$22.02	$20.52	$23.56	$0.67	$1.84	$0.66	-$2.73	-$0.38	$3.73
Income Taxes	$8.84	$7.03	$3.37	$7.79	$9.71	$8.10	$8.89	$0.18	$0.76	$0.18	-$0.74	-$0.04	$1.46
Results Of Operations	$21.46	$17.81	$19.70	$15.80	$12.31	$12.42	$14.67	$0.49	$1.08	$0.48	-$1.99	-$0.33	$2.26

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cenovus Energy (CVE - TSX, NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	906.8	824.7	731.0	655.3	588.1	527.8	488.5	412.3	376.2	618.7	500.0	498.3	479.1
Liquids Production (b/d)	101,370	109,589	96,674	97,110	123,879	133,646	154,497	160,081	158,810	270,961	290,573	240,115	206,984
Total Production (boe/d)	252,511	247,032	218,504	206,328	221,899	221,608	235,911	228,805	221,506	374,085	373,905	323,165	286,842
% Gas Production	60%	56%	56%	53%	44%	40%	35%	30%	28%	28%	22%	26%	28%
% Oil Production	40%	44%	44%	47%	56%	60%	65%	70%	72%	72%	78%	74%	72%
Proven Reserves:													
Gas Reserves (bcf)	1,855.0	1,474.0	1,389.0	1,209.0	967.0	877.0	811.0	674.0	609.0	1,961.0	1,416.0	1,328.7	1,094.2
Oil Reserves (mmbbls)	909.0	951.0	1,100.0	1,316.0	1,545.0	1,657.0	1,735.0	1,890.0	1,951.0	3,685.0	3,620.0	3,085.3	2,576.2
Total Proven Reserves (mmboe)	1,218.2	1,196.7	1,331.5	1,517.5	1,706.2	1,803.2	1,870.2	2,002.3	2,052.5	4,011.8	3,856.0	3,306.8	2,758.6
% Gas Reserves	25%	21%	17%	13%	9%	8%	7%	6%	5%	8%	6%	7%	7%
% Oil Reserves	75%	79%	83%	87%	91%	92%	93%	94%	95%	92%	94%	93%	93%
Proven Reserve Life Index	13.2	13.3	16.7	20.2	21.1	22.3	21.7	24.0	25.4	29.4	28.3	27.7	25.7
Proven Reserve Additions:													
Gas Additions (bcf)	167.0	-80.0	181.8	59.2	-27.3	102.6	112.3	13.5	72.3	1,577.8	-362.5	1,287.6	1,413.4
Oil Additions (mmbbls)	119.0	82.0	184.3	251.4	274.2	160.8	134.4	213.4	119.0	1,832.9	41.1	1,992.9	2,340.7
Total Additions (mmboe)	146.8	68.7	214.6	261.3	269.7	177.9	153.1	215.7	131.0	2,095.9	-19.4	2,207.5	2,576.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	20.5	174.3	229.9	224.1	231.0	141.4	111.3	148.5	118.7	112.6	138.8	370.1	629.9
Acquisitions	0.0	0.0	0.0	0.0	0.8	0.0	0.3	0.0	0.0	2,148.4	0.0	2,148.4	2,148.8
Dispositions	(0.2)	(4.3)	(18.3)	(35.4)	(10.0)	(3.9)	(9.3)	-	(0.2)	(182.4)	(123.2)	(305.7)	(315.1)
Revisions of Estimates	126.5	(101.3)	3.0	72.7	47.9	40.4	50.8	67.2	12.5	17.2	-35.0	(5.3)	112.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	14.0%	253.9%	107.2%	85.7%	85.7%	79.5%	72.7%	68.8%	90.6%	5.4%	-717.1%	16.8%	24.5%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.3%	0.0%	0.2%	0.0%	0.0%	102.5%	0.0%	97.3%	83.4%
Dispositions	-0.1%	-6.3%	-8.5%	-13.6%	-3.7%	-2.2%	-6.1%	0.0%	-0.1%	-8.7%	636.4%	-13.8%	-12.2%
Revisions of Estimates	86.2%	-147.6%	1.4%	27.8%	17.8%	22.7%	33.2%	31.2%	9.5%	0.8%	180.7%	-0.2%	4.4%
Additions as % of Production:													
Gas	50.5%	-26.6%	68.1%	24.7%	-12.7%	53.3%	63.0%	9.0%	52.7%	698.7%	-198.6%	236.0%	161.6%
Oil	321.6%	205.0%	522.3%	709.4%	606.5%	329.6%	238.3%	365.3%	205.2%	1853.3%	38.7%	758.0%	619.7%
Total	159.3%	76.2%	269.1%	347.0%	332.9%	219.9%	177.8%	258.3%	162.0%	1535.0%	-14.2%	623.8%	492.1%
Additions as % of Reserves:													
Gas	9.0%	-5.4%	13.1%	4.9%	-2.8%	11.7%	13.8%	2.0%	11.9%	80.5%	-25.6%	96.9%	129.2%
Oil	13.1%	8.6%	16.8%	19.1%	17.7%	9.7%	7.7%	11.3%	6.1%	49.7%	1.1%	64.6%	90.9%
Total	12.1%	5.7%	16.1%	17.2%	15.8%	9.9%	8.2%	10.8%	6.4%	52.2%	-0.5%	66.8%	93.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$195.0	$60.0	$110.7	$242.8	$424.3	$256.4	$144.0	$51.7	$26.4	$121.1	$50.2	$197.7	$393.4
Development	$1,305.0	$894.0	$1,223.5	$1,957.5	$2,590.6	$2,683.4	$2,375.6	$1,065.1	$557.6	$1,015.5	$851.3	$2,424.4	$5,865.1
Acquisitions	$0.0	$3.0	$46.6	$69.8	$114.1	$31.1	$16.3	$3.1	$8.3	$14,178.8	$263.2	$14,450.3	$14,469.7
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$1,500.0	$957.0	$1,380.8	$2,270.1	$3,128.9	$2,970.9	$2,536.0	$1,119.9	$592.3	$15,315.4	$1,164.7	$17,072.4	$20,728.2
Expenditures as % of Total:													
Exploration	13.0%	6.3%	8.0%	10.7%	13.6%	8.6%	5.7%	4.6%	4.5%	0.8%	4.3%	1.2%	1.9%
Development	87.0%	93.4%	88.6%	86.2%	82.8%	90.3%	93.7%	95.1%	94.1%	6.6%	73.1%	14.2%	28.3%
Acquisitions	0.0%	0.3%	3.4%	3.1%	3.6%	1.0%	0.6%	0.3%	1.4%	92.6%	22.6%	84.6%	69.8%
Cashflow (US$million)	$2,938.2	$2,506.0	$2,348.0	$3,231.2	$3,645.2	$3,505.1	$3,150.9	$1,669.5	$772.1	$2,231.5	$1,280.5	$4,284.1	$9,104.6
Cashflow (US$/boe)	$31.88	$27.79	$29.44	$42.91	$45.01	$43.33	$36.59	$19.99	$9.55	$16.34	$9.38	$12.11	$17.39
Recycle Ratio	3.1x	2.1x	5.0x	5.6x	4.0x	2.7x	2.3x	3.9x	2.1x	2.4x	0.8x	1.8x	2.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$10.20	$13.07	$5.73	$7.41	$10.81	$16.17	$15.54	$5.18	$4.45	$8.76	$8.68	$7.19	$8.43
Acquisition Costs	na	na	na	na	$148.84	na	$48.00	na	na	$6.60	na	nm	nm
All Sources (incl. revisions)	$10.20	$13.11	$5.93	$7.65	$11.19	$16.35	$15.61	$5.19	$4.52	$6.72	$11.22	$6.79	$7.17
Exploration & Development (excl. revisions)	$73.17	$5.47	$5.80	$9.82	$13.05	$20.79	$22.64	$7.52	$4.92	$10.09	$6.49	$7.08	$9.94
Acquisition Costs	na	na	na	na	$148.84	na	$48.00	na	na	$6.60	na	nm	nm
All Sources (excl. revisions)	$73.17	$5.49	$6.00	$10.13	$13.50	$21.01	$22.72	$7.54	$4.99	$6.77	$8.39	$6.78	$7.46
Geographically Segmented Costs													
North America	$10.20	$13.11	$5.93	$7.65	$11.19	$16.35	$15.61	$5.19	$4.52	$6.70	$10.70	$8.76	$9.08
Other International	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cenovus Energy (CVE - TSX, NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	9.07	8.07	9.86	12.92	14.01	15.59	14.84	10.41	8.94	9.91	9.91	9.08	10.24
Exploration Expense	-	-	-	-	-	-	-	1.29	0.02	5.03	5.03	1.96	1.53
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	10.20	13.11	5.93	7.65	11.19	16.35	15.61	5.19	4.52	6.72	6.72	6.79	7.17
Return on Capital	8.63	11.12	6.48	10.43	16.06	25.09	23.12	8.66	8.06	11.78	11.78	12.02	12.12
Income Taxes	3.55	4.39	1.11	5.15	12.66	16.37	14.02	3.20	5.65	4.30	4.30	5.57	5.69
Breakeven Oil Price	31.45	36.69	23.38	36.15	53.92	73.39	67.59	28.76	27.19	37.74	37.74	35.42	36.75
Quality Differential	16.54	7.87	7.97	14.85	20.49	20.33	17.93	17.17	15.31	17.42	17.42	19.25	18.57
Required WTI Price	48.00	44.56	31.35	51.00	74.41	93.72	85.52	45.93	42.50	55.16	55.16	54.66	55.32

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	9.07	8.07	9.86	12.92	14.01	15.59	14.84	10.41	8.94	9.91	9.91	9.08	10.24
Exploration Expense	-	-	-	-	-	-	-	1.29	0.02	5.03	5.03	1.96	1.53
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	10.20	13.11	5.93	7.65	11.19	16.35	15.61	5.19	4.52	6.72	6.72	6.79	7.17
Return on Capital	8.63	11.12	6.48	10.43	16.06	25.09	23.12	8.66	8.06	11.78	11.78	12.02	12.12
Income Taxes	3.55	4.39	1.11	5.15	12.66	16.37	14.02	3.20	5.65	4.30	4.30	5.57	5.69
Breakeven Oil Price	31.45	36.69	23.38	36.15	53.92	73.39	67.59	28.76	27.19	37.74	37.74	35.42	36.75
Quality Differential	16.54	7.87	7.97	14.85	20.49	20.33	17.93	17.17	15.31	17.42	17.42	19.25	18.57
Required WTI Price	48.00	44.56	31.35	51.00	74.41	93.72	85.52	45.93	42.50	55.16	55.16	54.66	55.32

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	-	-	-	-	-	-	-	-	-	-	-	-	-

Source: BMO Capital Markets, Company Reports

Cenovus Energy (CVE - TSX, NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.77	14.95	20.52	21.36	21.74	18.99	12.27	10.61	10.61	12.21	9.94	10.95	12.42
Exploration Expense	-	-	-	-	-	-	1.53	0.02	0.02	6.19	0.04	2.36	1.85
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	11.91	6.72	7.83	11.36	17.52	16.90	5.22	4.76	4.76	7.40	14.24	7.50	7.85
Return on Capital	13.43	10.45	16.22	24.06	36.63	31.70	10.16	9.94	9.94	18.06	33.54	17.14	16.81
Income Taxes	5.30	1.79	8.00	18.97	23.90	19.22	3.76	6.96	6.96	6.59	12.41	7.93	7.89
Breakeven Oil Price	**42.41**	**33.90**	**52.57**	**75.76**	**99.79**	**86.80**	**32.94**	**32.29**	**32.29**	**50.46**	**70.17**	**45.89**	**46.82**
Quality Differential	11.47	12.09	23.58	31.25	28.36	22.94	20.24	18.85	18.85	21.47	28.00	22.77	22.30
Required WTI Price	**53.88**	**45.99**	**76.14**	**107.01**	**128.15**	**109.73**	**53.18**	**51.14**	**51.14**	**71.93**	**98.17**	**68.66**	**69.12**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.77	14.95	20.52	21.36	21.74	18.99	12.27	10.61	10.61	12.21	9.94	10.95	12.42
Exploration Expense	-	-	-	-	-	-	1.53	0.02	0.02	6.19	0.04	2.36	1.85
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	45.73	23.89	35.97	41.71	32.42	33.19	10.60	9.99	9.99	30.74	13.53	26.52	19.61
Return on Capital	51.36	35.61	78.87	94.60	72.15	63.72	21.41	22.17	22.17	84.75	35.20	66.72	45.02
Income Taxes	20.28	6.10	38.90	74.60	47.08	38.63	7.92	15.54	15.54	30.91	13.03	30.89	21.12
Breakeven Oil Price	**129.14**	**80.55**	**174.26**	**232.27**	**173.40**	**154.52**	**53.73**	**58.33**	**58.33**	**164.80**	**71.73**	**137.45**	**100.03**
Quality Differential	11.47	12.09	23.58	31.25	28.36	22.94	20.24	18.85	18.85	21.47	28.00	22.77	22.30
Required WTI Price	**140.61**	**92.63**	**197.84**	**263.52**	**201.76**	**177.46**	**73.97**	**77.18**	**77.18**	**186.27**	**99.73**	**160.22**	**122.33**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

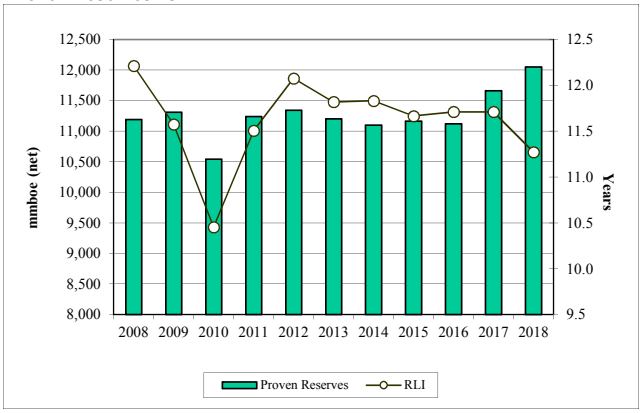
Chevron (CVX - NYSE)

US$, net

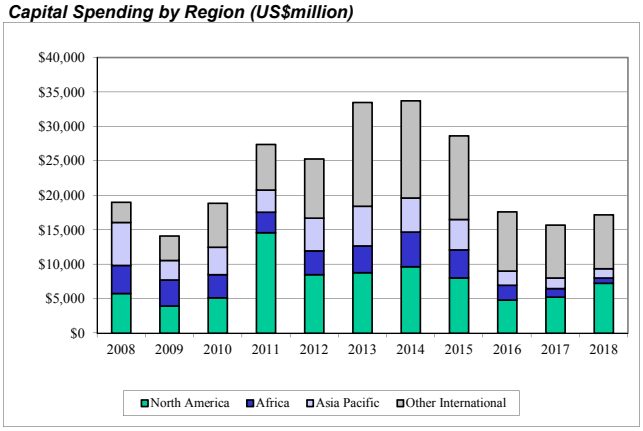
- Chevron's results from operations improved to $12.93/boe compared to a loss of $5.28/boe in 2017.
- The company reported F&D costs that increased to $11.32/boe from $9.47/boe in 2017. F&D costs on a realized ratio basis jumped to $13.73/boe from $12.06/boe last year. However, the costs for PD reserves decreased to $17.21/boe from $21.89/boe.
- The company's costs in 2018 imply a Brent-equivalent breakeven of $46.81/boe on a realized ratio basis on total proved reserves and $53.95/boe based on PD costs.
- Chevron reported ROCE of 8.6% in 2018 versus 5.2% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

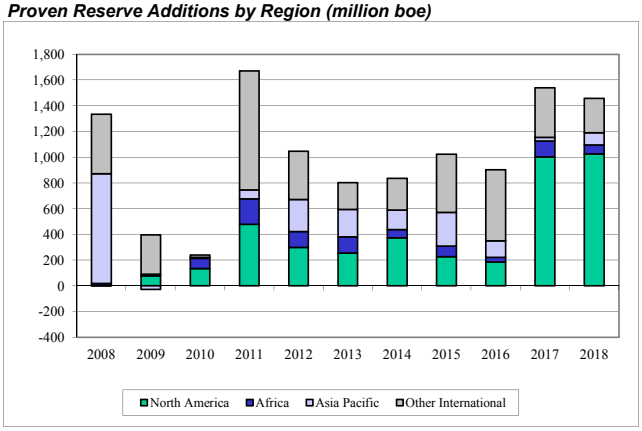
Proven Reserves vs RLI



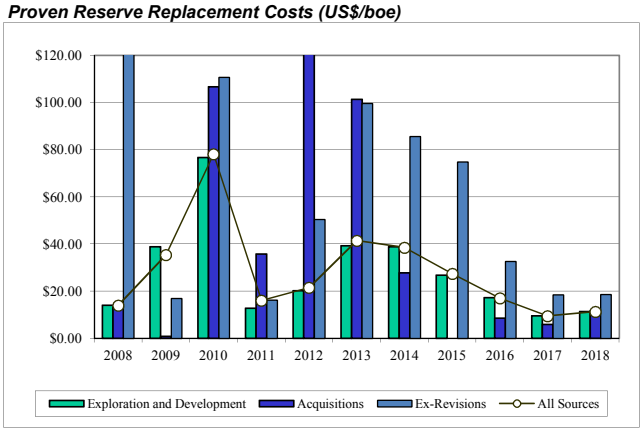
Capital Spending by Region (US$million)



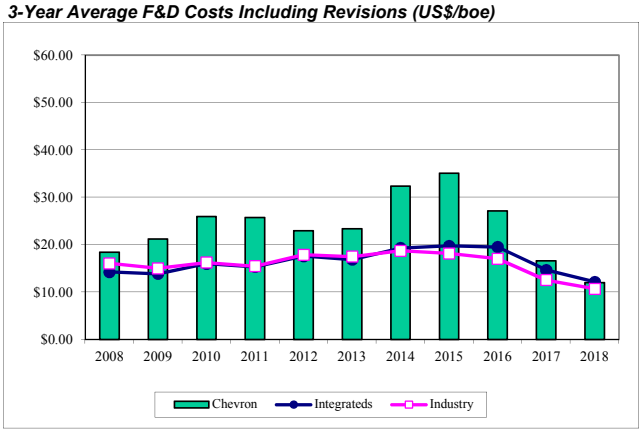
Proven Reserve Additions by Region (million boe)



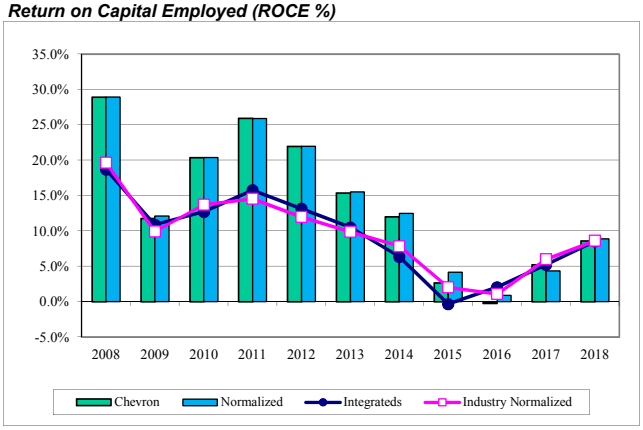
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



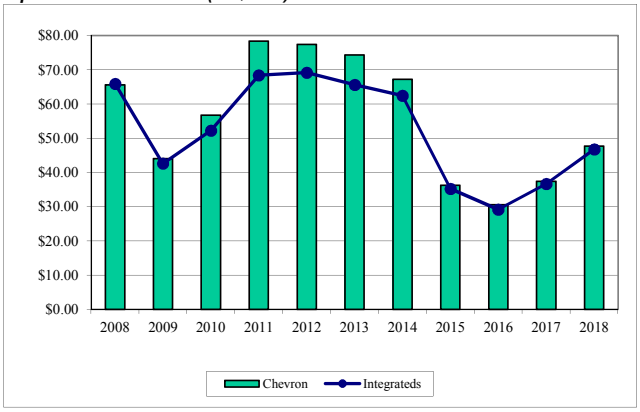
Source: BMO Capital Markets, Company Reports

Chevron (CVX - NYSE)

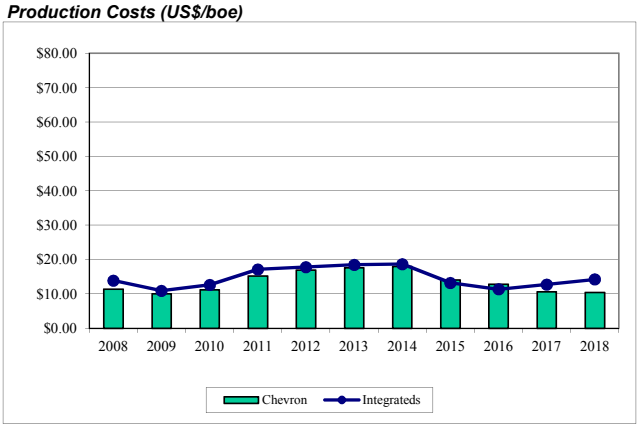
US$/boe, net

Worldwide

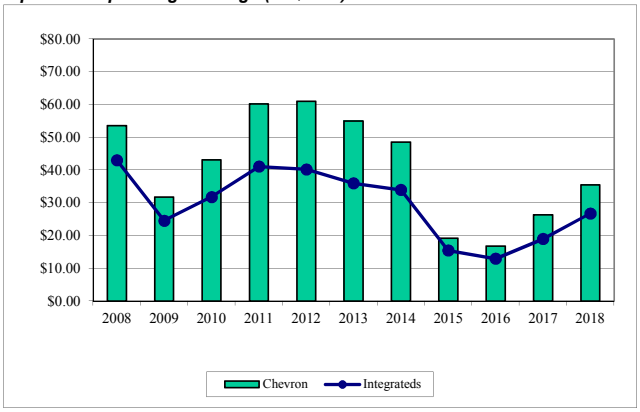
Upstream Net Revenue (US$/boe)



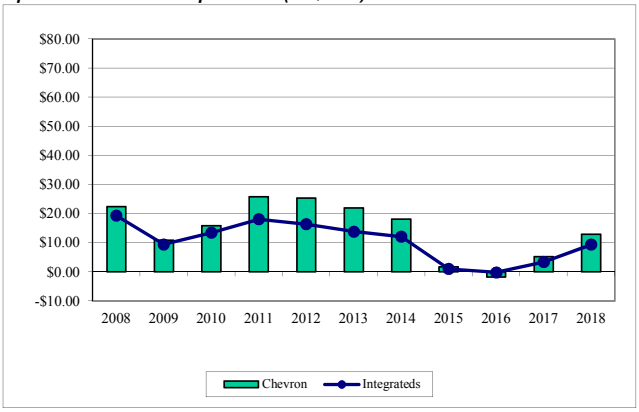
Production Costs (US$/boe)



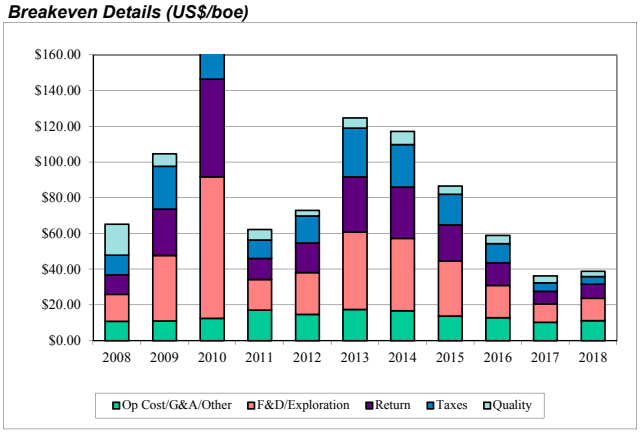
Upstream Operating Earnings (US$/boe)



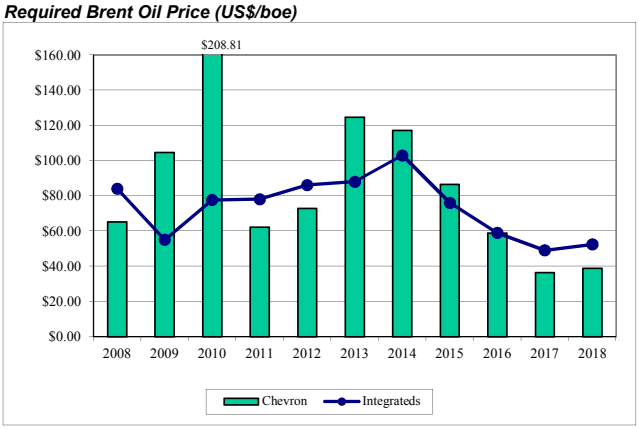
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

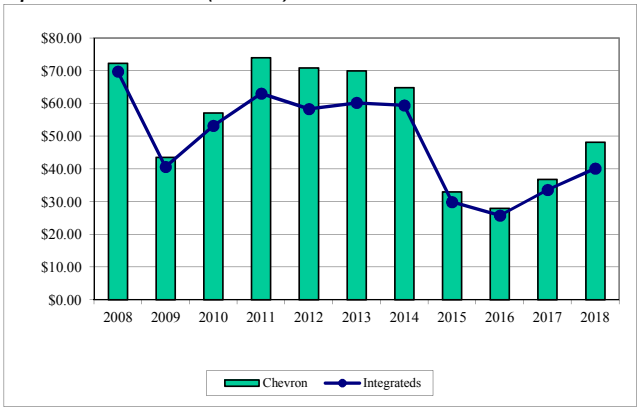
See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

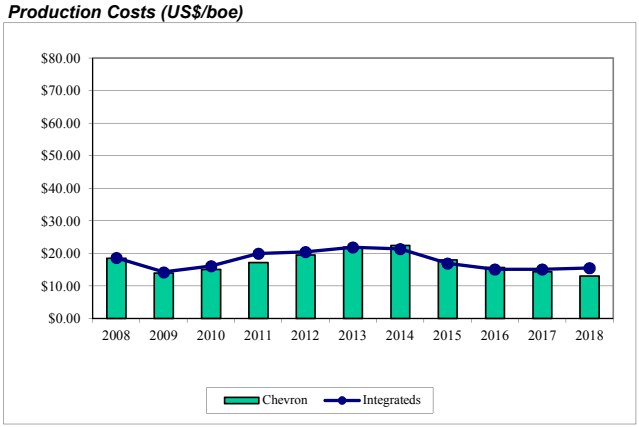
US$/boe, net

North America

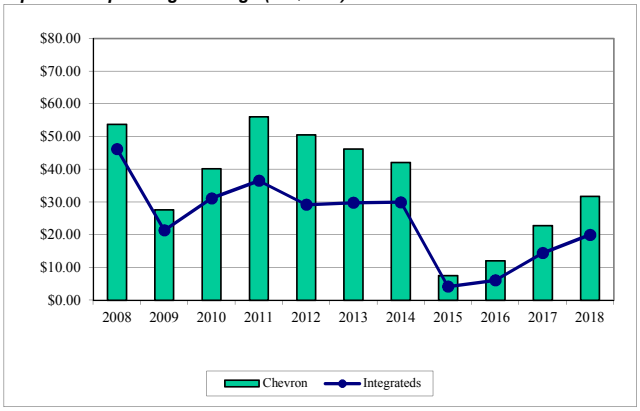
Upstream Net Revenue (US$/boe)



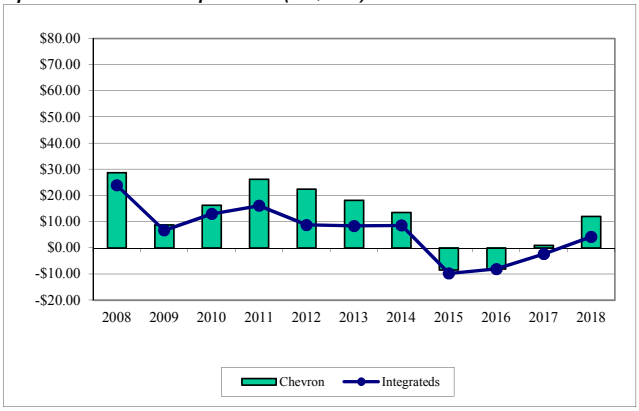
Production Costs (US$/boe)



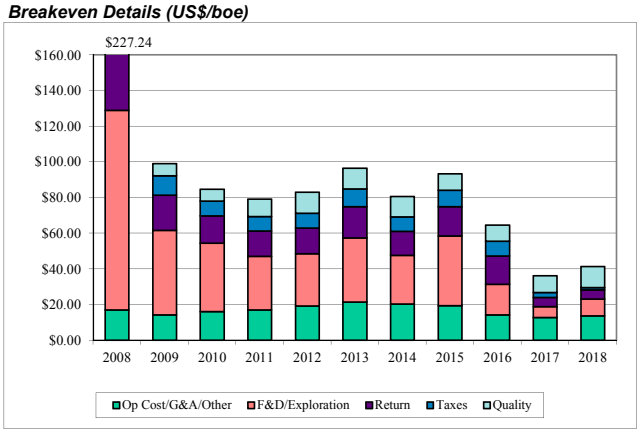
Upstream Operating Earnings (US$/boe)



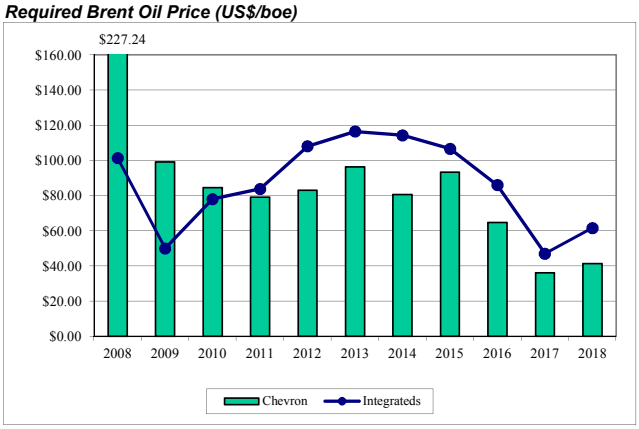
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

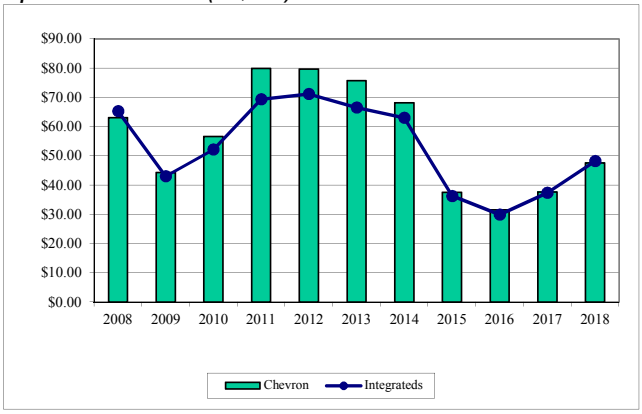
See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

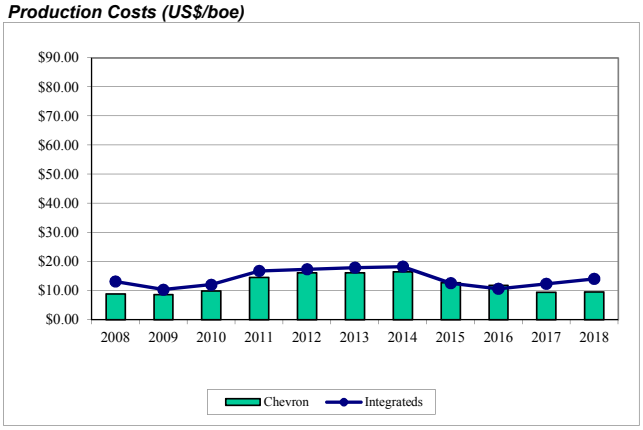
US$/boe, net

Total International

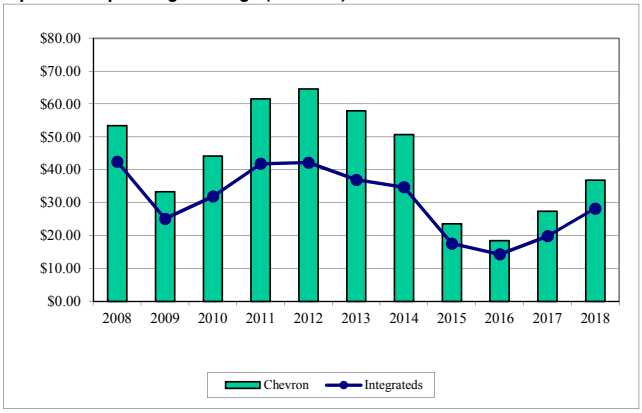
Upstream Net Revenue (US$/boe)



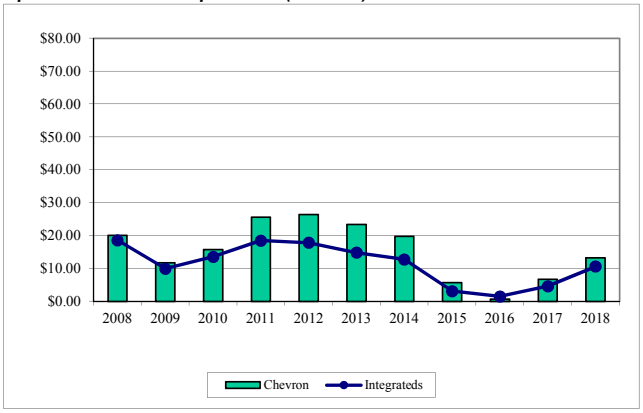
Production Costs (US$/boe)



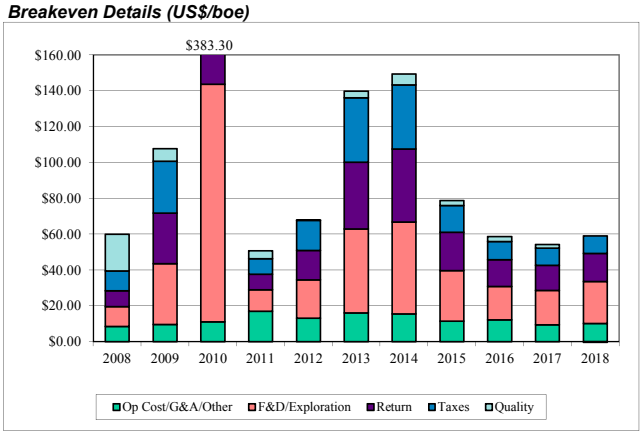
Upstream Operating Earnings (US$/boe)



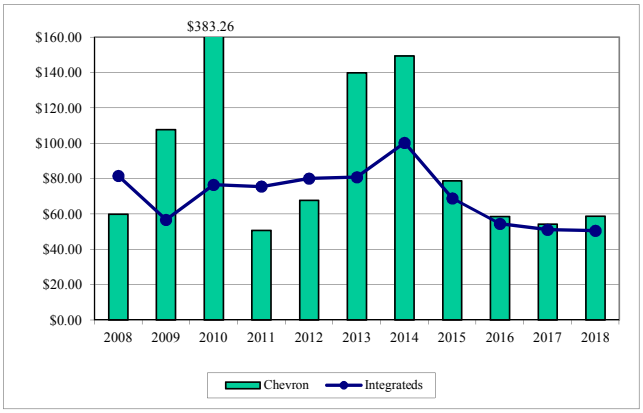
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

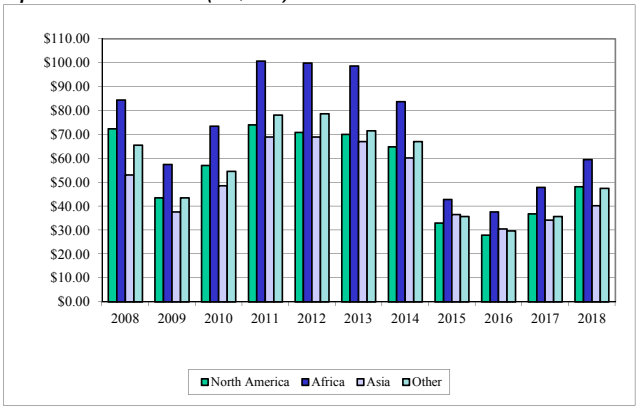
See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

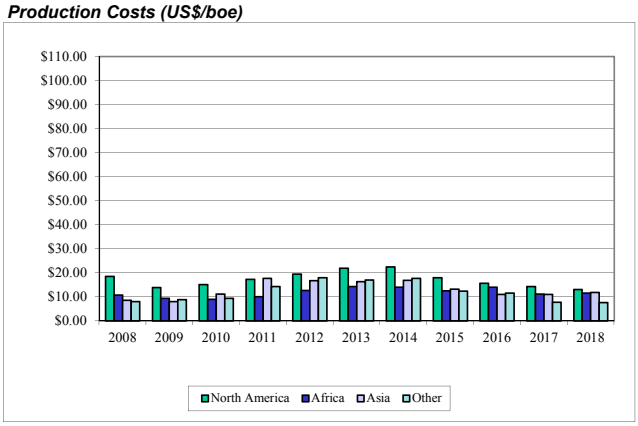
US$/boe, net

International Segments

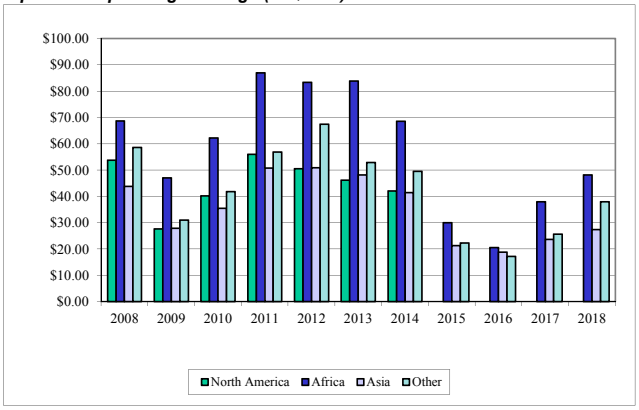
Upstream Net Revenue (US$/boe)



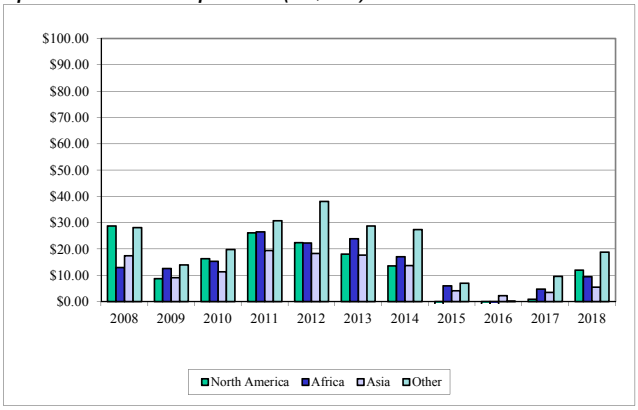
Production Costs (US$/boe)



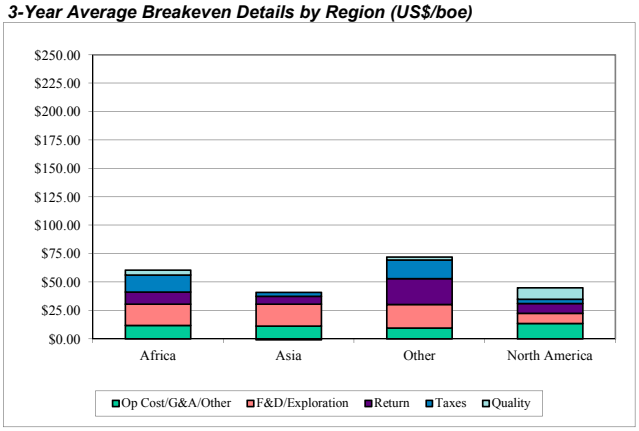
Upstream Operating Earnings (US$/boe)



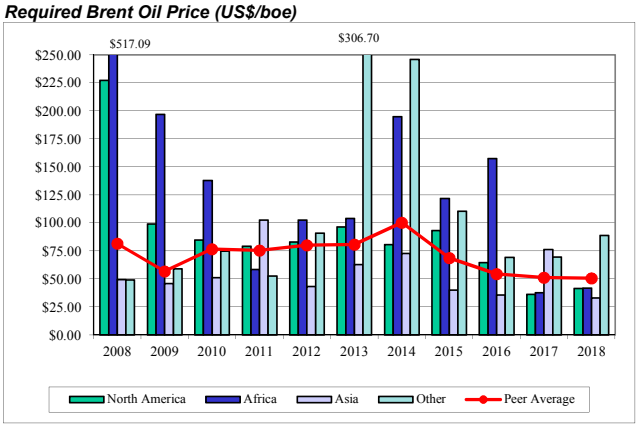
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Chevron (CVX - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	42,972	22,573	27,616	29,709	23,645	24,917	22,910	12,748	33,145	41,922	60,713
Midstream / Downstream Revenue	221,986	144,829	170,582	214,662	206,945	195,239	177,584	117,177	77,070	92,752	98,189
Other	8,047	4,234	6,730	9,335	11,319	8,692	11,476	8,552	4,257	7,048	7,437
Total Revenue and Other Income	273,005	171,636	204,928	253,706	241,909	228,848	211,970	138,477	114,472	141,722	166,339
Crude Oil and Product Purchases	171,397	99,653	116,467	149,923	140,766	134,696	119,671	69,751	59,321	75,765	94,578
Production and Transportation Expenses	20,795	17,857	19,188	21,649	22,570	24,627	25,285	23,034	20,268	19,437	20,544
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,169	1,342	1,147	1,216	1,728	1,861	1,985	3,340	1,033	864	1,210
General and Administrative	5,756	4,527	4,767	4,745	4,724	4,510	4,494	4,443	4,684	4,448	3,838
Depreciation, Depletion and Amortization	9,528	12,110	13,063	12,911	13,413	13,804	15,519	16,971	16,271	18,328	18,684
Interest, net	-	28	50	-	-	-	-	-	201	307	748
Other	21,303	17,591	18,191	15,628	12,376	13,445	13,814	16,096	14,854	13,352	6,162
Earnings Before Income Tax	43,057	18,528	32,055	47,634	46,332	35,905	31,202	4,842	(2,160)	9,221	20,575
Current Income Taxes	18,428	7,498	12,360	19,037	17,981	12,432	10,320	1,993	2,106	3,155	4,665
Future Income Taxes	598	467	559	1,589	2,015	1,876	1,572	(1,861)	(3,835)	(3,203)	1,050
Total Income Taxes	19,026	7,965	12,919	20,626	19,996	14,308	11,892	132	(1,729)	(48)	5,715
Minority Interest	(100)	(80)	(112)	(113)	(157)	(174)	(69)	(123)	(66)	(74)	(36)
Earnings From Continuing Operations	23,931	10,483	19,024	26,895	26,179	21,423	19,241	4,587	(497)	9,195	14,824
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	23,931	10,483	19,024	26,895	26,179	21,423	19,241	4,587	(497)	9,195	14,824
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	23,931	10,483	19,024	26,895	26,179	21,423	19,241	4,587	(497)	9,195	14,824

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	23,931	10,483	19,024	26,895	26,179	21,423	19,241	4,587	(497)	9,195	14,824
Charges and Credits Not Impacting Cash	10,501	13,129	14,118	14,877	15,983	16,363	17,966	17,419	12,925	15,323	20,421
Other	(2,153)	(869)	(1,106)	(1,864)	(4,198)	(121)	(5,054)	331	1,734	(3,128)	(3,305)
Cash Flow From Operations	32,279	22,743	32,036	39,908	37,964	37,665	32,153	22,337	14,162	21,390	31,940
Change in Working Capital / Other	(2,647)	(3,370)	(677)	1,190	848	(2,663)	(678)	(2,881)	(1,316)	(875)	(1,322)
Net Cash From Operating Activities	29,632	19,373	31,359	41,098	38,812	35,002	31,475	19,456	12,846	20,515	30,618
Total Capital Expenditures	(19,666)	(19,843)	(19,612)	(26,500)	(30,938)	(37,985)	(35,407)	(29,504)	(18,109)	(13,404)	(13,792)
Acquisitions, net	1,491	2,564	1,995	508	2,777	1,143	5,729	5,739	2,777	5,247	2,392
Other	1,094	707	(3,298)	(1,497)	3,365	1,233	(215)	(43)	(1,520)	(44)	(890)
Net Cash From Investing Activities	(17,081)	(16,572)	(20,915)	(27,489)	(24,796)	(35,609)	(29,893)	(23,808)	(16,852)	(8,201)	(12,290)
Net Change in Debt	1,682	1,659	882	(2,369)	2,047	8,246	7,388	10,724	7,470	(7,461)	(4,502)
Net Change in Common Stock	(6,821)	168	(306)	(3,193)	(4,142)	(4,494)	(4,412)	211	650	1,117	(604)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(5,261)	(5,302)	(5,674)	(6,139)	(6,844)	(7,474)	(7,928)	(7,992)	(8,032)	(8,132)	(8,502)
Other	-	(71)	(72)	(71)	(41)	(99)	(47)	(128)	(63)	(78)	(91)
Net Cash From Financing Activities	(10,400)	(3,546)	(5,170)	(11,772)	(8,980)	(3,821)	(4,999)	2,815	25	(14,554)	(13,699)
Effect of Exchange Rate on Cash	(166)	114	70	(33)	39	(266)	(43)	(226)	(53)	65	(91)
Net Increase/(Decrease) in Cash	1,985	(631)	5,344	1,804	5,075	(4,694)	(3,460)	(1,763)	(4,034)	(2,175)	4,538
Cash and Equivalents, Beginning of Year	7,362	9,347	8,716	14,060	15,864	20,939	16,245	12,785	11,022	6,988	4,804
Cash and Equivalents, End of Year	9,347	8,716	14,060	15,864	20,939	16,245	12,785	11,022	6,988	4,813	9,342

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	36,470	37,216	48,841	53,234	55,720	50,250	42,232	35,347	29,619	28,560	34,021
Net Property, Plant and Equipment	91,780	96,468	104,504	122,608	141,348	164,829	183,173	188,396	182,186	177,712	169,207
Other Assets	32,915	30,937	31,424	33,632	35,914	38,674	40,621	42,360	48,273	47,534	50,635
Total Assets	161,165	164,621	184,769	209,474	232,982	253,753	266,026	266,103	260,078	253,806	253,863
Total Current Liabilities	32,023	26,211	29,012	33,600	34,212	33,018	31,926	26,464	31,785	27,737	27,171
Long-term Debt	5,742	9,829	11,003	9,684	11,966	19,960	23,960	33,584	35,193	33,477	28,733
Deferred Income Taxes	11,539	11,521	12,697	15,544	17,672	21,301	21,920	20,689	17,516	14,652	15,921
Other Liabilities and Deferred Credits	24,744	24,499	26,246	28,465	31,300	29,047	32,029	31,480	28,862	28,621	26,396
Total Liabilities	74,048	72,060	78,958	87,293	95,150	103,326	109,835	112,217	113,356	104,487	98,221
Minority Interests	469	647	730	799	1,308	1,314	1,163	1,170	1,166	1,195	1,088
Common Shares	1,832	1,832	1,832	1,832	1,832	1,832	1,832	1,832	1,832	1,832	1,832
Contributed Surplus (Paid-in Capital)	14,448	14,631	14,796	15,156	15,497	15,713	16,041	16,330	16,595	16,848	17,112
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	101,102	106,289	119,641	140,399	159,730	173,677	184,987	181,578	173,046	174,106	180,987
Other / Comprehensive Income (Loss)	(30,734)	(30,838)	(31,188)	(36,005)	(40,535)	(42,109)	(47,832)	(47,024)	(45,917)	(44,662)	(45,377)
Total Shareholders' Equity	86,648	91,914	105,081	121,382	136,524	149,113	155,028	152,716	145,556	148,124	154,554
Total Liabilities and Shareholders' Equity	161,165	164,621	184,769	209,474	232,982	253,753	266,026	266,103	260,078	253,806	253,863
Return on Capital Employed (ROCE)	**28.9%**	**11.8%**	**20.4%**	**25.9%**	**22.0%**	**15.4%**	**12.0%**	**2.7%**	**-0.3%**	**5.2%**	**8.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	60,103	43,076	57,212	76,603	72,779	70,428	63,120	34,763	29,050	37,238	51,055	117,343	215,226
Production Costs	10,447	9,809	11,337	14,880	15,979	16,700	16,945	13,532	12,213	10,625	11,198	34,036	64,513
Exploration	1,169	1,342	1,152	1,215	1,710	1,821	1,947	3,306	1,003	832	1,181	3,016	8,269
DD&A	7,527	10,433	11,442	11,182	11,774	12,897	14,383	15,191	17,447	17,303	16,802	51,552	81,126
G&A/Other	-579	846	1,211	1,716	-2,181	-204	-1,270	-444	-84	-389	761	288	-1,426
Pre-tax Results Of Operations	41,539	20,646	32,070	47,610	45,497	39,214	31,115	3,178	-1,529	8,867	21,113	28,451	62,744
Income Taxes	21,014	9,946	16,084	22,427	21,658	18,344	14,092	1,461	95	3,610	7,292	10,997	26,549
Results Of Operations	20,525	10,700	15,986	25,183	23,839	20,870	17,023	1,717	-1,624	5,257	13,821	17,454	36,195

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	17,750	11,411	14,712	18,319	16,954	16,774	15,683	8,670	7,073	9,158	13,807	30,038	54,391
Production Costs	4,538	3,648	3,880	4,265	4,663	5,254	5,440	4,723	3,975	3,563	3,743	11,281	21,444
Exploration	370	451	193	207	244	555	581	1,614	399	299	777	1,475	3,670
DD&A	2,286	3,687	3,879	3,657	3,688	4,262	4,939	5,455	6,178	5,304	4,769	16,251	26,645
G&A/Other	-351	72	277	-29	-40	-113	-514	363	-339	-376	180	-535	-686
Pre-tax Results Of Operations	10,907	3,553	6,483	10,219	8,399	6,816	5,237	-3,485	-3,140	368	4,338	1,566	3,318
Income Taxes	3,856	1,258	2,273	3,728	3,043	2,471	1,955	-1,252	-1,080	127	886	-67	635
Results Of Operations	7,051	2,295	4,210	6,491	5,356	4,345	3,282	-2,233	-2,060	241	3,452	1,633	2,683

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	42,353	31,665	42,500	58,284	55,825	53,654	47,437	26,093	21,977	28,080	37,248	87,305	160,835
Production Costs	5,909	6,161	7,457	10,615	11,316	11,446	11,505	8,809	8,238	7,062	7,455	22,755	43,069
Exploration	799	891	959	1,008	1,466	1,266	1,366	1,692	604	533	404	1,541	4,599
DD&A	5,241	6,746	7,563	7,525	8,086	8,635	9,444	9,736	11,269	11,999	12,033	35,301	54,481
G&A/Other	-228	774	934	1,745	-2,141	-91	-756	-807	255	-13	581	823	-740
Pre-tax Results Of Operations	30,632	17,093	25,587	37,391	37,098	32,398	25,878	6,663	1,611	8,499	16,775	26,885	59,426
Income Taxes	17,158	8,688	13,811	18,699	18,615	15,873	12,137	2,713	1,175	3,483	6,406	11,064	25,914
Results Of Operations	13,474	8,405	11,776	18,692	18,483	16,525	13,741	3,950	436	5,016	10,369	15,821	33,512

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$65.57	$44.07	$56.73	$78.42	$77.47	$74.30	$67.27	$36.31	$30.59	$37.39	$47.75	$38.92	$43.83
Production Costs	$11.40	$10.03	$11.24	$15.23	$17.01	$17.62	$18.06	$14.14	$12.86	$10.67	$10.47	$11.29	$13.14
Exploration	$1.28	$1.37	$1.14	$1.24	$1.82	$1.92	$2.07	$3.45	$1.06	$0.84	$1.10	$1.00	$1.68
DD&A	$8.21	$10.67	$11.35	$11.45	$12.53	$13.61	$15.33	$15.87	$18.37	$17.37	$15.72	$17.10	$16.52
G&A/Other	-$0.63	$0.87	$1.20	$1.76	-$2.32	-$0.22	-$1.35	-$0.46	-$0.09	-$0.39	$0.71	$0.10	-$0.29
Pre-tax Results Of Operations	$45.32	$21.12	$31.80	$48.74	$48.43	$41.37	$33.16	$3.32	-$1.61	$8.90	$19.75	$9.44	$12.78
Income Taxes	$22.92	$10.17	$15.95	$22.96	$23.05	$19.35	$15.02	$1.53	$0.10	$3.62	$6.82	$3.65	$5.41
Results Of Operations	$22.39	$10.95	$15.85	$25.78	$25.37	$22.02	$18.14	$1.79	-$1.71	$5.28	$12.93	$5.79	$7.37

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$72.30	$43.53	$57.06	$73.97	$70.84	$69.99	$64.81	$33.01	$27.92	$36.78	$48.14	$38.06	$42.04
Production Costs	$18.48	$13.91	$15.05	$17.22	$19.48	$21.92	$22.48	$17.98	$15.69	$14.31	$13.05	$14.29	$16.57
Exploration	$1.51	$1.72	$0.75	$0.84	$1.02	$2.32	$2.40	$6.14	$1.58	$1.20	$2.71	$1.87	$2.84
DD&A	$9.31	$14.06	$15.04	$14.77	$15.41	$17.78	$20.41	$20.77	$24.39	$21.30	$16.63	$20.59	$20.59
G&A/Other	-$1.43	$0.27	$1.07	-$0.12	-$0.17	-$0.47	-$2.12	$1.38	-$1.34	-$1.51	$0.63	-$0.68	-$0.53
Pre-tax Results Of Operations	$44.43	$13.55	$25.14	$41.26	$35.09	$28.44	$21.64	-$13.27	-$12.39	$1.48	$15.12	$1.98	$2.56
Income Taxes	$15.71	$4.80	$8.82	$15.05	$12.71	$10.31	$8.08	-$4.77	-$4.26	$0.51	$3.09	-$0.09	$0.49
Results Of Operations	$28.72	$8.75	$16.33	$26.21	$22.38	$18.13	$13.56	-$8.50	-$8.13	$0.97	$12.03	$2.07	$2.07

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$63.10	$44.27	$56.62	$79.93	$79.73	$75.76	$68.12	$37.56	$31.56	$37.59	$47.61	$39.23	$44.47
Production Costs	$8.80	$8.61	$9.93	$14.56	$16.16	$16.16	$16.52	$12.68	$11.83	$9.45	$9.53	$10.22	$11.91
Exploration	$1.19	$1.25	$1.28	$1.38	$2.09	$1.79	$1.96	$2.44	$0.87	$0.71	$0.52	$0.69	$1.27
DD&A	$7.81	$9.43	$10.08	$10.32	$11.55	$12.19	$13.56	$14.02	$16.18	$16.06	$15.38	$15.86	$15.06
G&A/Other	-$0.34	$1.08	$1.24	$2.39	-$3.06	-$0.13	-$1.09	-$1.16	$0.37	-$0.02	$0.74	$0.37	-$0.20
Pre-tax Results Of Operations	$45.64	$23.90	$34.09	$51.28	$52.98	$45.75	$37.16	$9.59	$2.31	$11.38	$21.44	$12.08	$16.43
Income Taxes	$25.56	$12.15	$18.40	$25.64	$26.59	$22.41	$17.43	$3.91	$1.69	$4.66	$8.19	$4.97	$7.17
Results Of Operations	$20.08	$11.75	$15.69	$25.63	$26.40	$23.33	$19.73	$5.69	$0.63	$6.71	$13.25	$7.11	$9.27

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$84.35	$57.41	$73.38	$100.70	$99.78	$98.66	$83.70	$42.79	$37.61	$47.81	$59.44	$48.51	$54.89
Production Costs	$10.71	$9.35	$9.00	$10.00	$12.56	$14.30	$14.05	$12.46	$13.99	$11.14	$11.51	$12.17	$12.63
Exploration	$1.72	$1.49	$1.41	$1.12	$2.58	$1.29	$2.42	$4.42	$1.87	$0.44	$0.36	$0.87	$1.93
DD&A	$9.06	$14.18	$13.45	$13.89	$15.35	$18.27	$20.35	$17.44	$20.12	$25.03	$24.14	$23.17	$21.39
G&A/Other	$3.26	-$0.55	$0.75	$2.60	$1.30	-$0.84	-$1.32	-$4.07	$1.13	-$1.74	-$0.65	-$0.46	-$1.38
Pre-tax Results Of Operations	$59.60	$32.94	$48.78	$73.08	$67.98	$65.63	$48.21	$12.54	$0.51	$12.94	$24.08	$12.76	$20.32
Income Taxes	$46.61	$20.34	$33.44	$46.49	$45.67	$41.64	$31.10	$6.53	$1.96	$8.17	$14.63	$8.38	$12.88
Results Of Operations	$12.99	$12.59	$15.34	$26.60	$22.31	$23.99	$17.11	$6.01	-$1.45	$4.77	$9.45	$4.38	$7.44

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia													
Net Revenue	$53.00	$37.65	$48.52	$68.89	$68.98	$67.05	$60.12	$36.51	$30.54	$34.16	$40.23	$34.71	$40.49
Production Costs	$8.58	$8.05	$11.10	$17.72	$16.71	$16.35	$16.85	$13.16	$11.01	$10.97	$11.85	$11.25	$12.85
Exploration	$1.01	$0.40	$1.04	$1.01	$1.72	$0.97	$1.13	$1.79	$0.41	$0.44	$0.26	$0.37	$0.84
DD&A	$7.48	$8.36	$10.27	$11.25	$12.31	$13.30	$14.54	$14.72	$15.03	$17.55	$17.09	$16.50	$15.70
G&A/Other	-$0.44	$1.32	$0.86	-$0.64	-$0.40	$1.49	$0.64	$0.21	$0.31	-$0.90	$0.74	$0.04	$0.20
Pre-tax Results Of Operations	$36.38	$19.51	$25.24	$39.54	$38.63	$34.95	$26.96	$6.63	$3.78	$6.10	$10.30	$6.54	$10.90
Income Taxes	$18.91	$10.40	$13.85	$20.13	$20.24	$17.26	$13.18	$2.47	$1.44	$2.52	$4.82	$2.83	$4.95
Results Of Operations	$17.47	$9.11	$11.39	$19.42	$18.39	$17.69	$13.78	$4.16	$2.34	$3.58	$5.48	$3.71	$5.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	$65.45	$43.47	$54.54	$78.11	$78.66	$71.48	$67.07	$35.71	$29.66	$35.73	$47.47	$38.62	$42.85
Production Costs	$8.00	$8.76	$9.39	$14.29	$17.92	$17.05	$17.66	$12.32	$11.57	$7.71	$7.56	$8.72	$10.81
Exploration	$1.15	$1.96	$1.42	$1.87	$2.19	$2.91	$2.55	$1.98	$0.82	$1.01	$0.72	$0.84	$1.32
DD&A	$7.55	$7.80	$7.98	$7.44	$8.18	$7.54	$8.49	$11.38	$15.40	$11.34	$11.33	$12.46	$11.61
G&A/Other	-$2.33	$1.77	$1.88	$5.03	-$8.93	-$1.38	-$2.73	-$0.93	$0.06	$1.30	$1.23	$0.93	$0.01
Pre-tax Results Of Operations	$51.08	$23.18	$33.87	$49.49	$59.30	$45.36	$41.10	$10.97	$1.81	$14.36	$26.64	$15.66	$19.10
Income Taxes	$22.90	$9.23	$14.03	$18.76	$21.17	$16.59	$13.64	$3.90	$1.79	$4.69	$7.76	$5.08	$6.30
Results Of Operations	$28.18	$13.95	$19.84	$30.73	$38.13	$28.77	$27.46	$7.07	$0.02	$9.67	$18.88	$10.58	$12.79

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	5,139.7	4,989.0	5,038.4	4,945.2	5,087.7	5,191.8	5,167.1	5,265.8	5,271.2	6,032.9	6,890.4	6,064.8	5,725.5
Liquids Production (b/d)	1,654,795	1,846,575	1,923,288	1,852,055	1,726,027	1,731,507	1,709,589	1,745,205	1,723,288	1,723,288	1,780,822	1,742,466	1,736,438
Total Production (boe/d)	2,511,416	2,678,082	2,763,014	2,676,256	2,573,973	2,596,804	2,570,776	2,622,831	2,601,826	2,728,767	2,929,224	2,753,272	2,690,685
% Gas Production	34%	31%	30%	31%	33%	33%	33%	33%	34%	37%	39%	37%	35%
% Oil Production	66%	69%	70%	69%	67%	67%	67%	67%	66%	63%	61%	63%	65%
Proven Reserves:													
Gas Reserves (bcf)	23,075.0	26,049.0	24,251.0	28,683.0	29,195.0	29,146.0	29,116.0	29,437.0	28,760.0	30,736.0	31,576.0	30,357.3	29,925.0
Oil Reserves (mmbbls)	7,350.0	6,973.0	6,503.0	6,459.0	6,481.0	6,345.0	6,249.0	6,262.0	6,328.0	6,542.0	6,790.0	6,553.3	6,434.2
Total Proven Reserves (mmboe)	11,195.8	11,314.5	10,544.8	11,239.5	11,346.8	11,202.7	11,101.7	11,168.2	11,121.3	11,664.7	12,052.7	11,612.9	11,421.7
% Gas Reserves	34%	38%	38%	43%	43%	43%	44%	44%	43%	44%	44%	44%	44%
% Oil Reserves	66%	62%	62%	57%	57%	57%	56%	56%	57%	56%	56%	56%	56%
Proven Reserve Life Index	12.2	11.6	10.5	11.5	12.1	11.8	11.8	11.7	11.7	11.7	11.3	11.6	11.6
Proven Reserve Additions:													
Gas Additions (bcf)	2,811.0	4,795.0	41.0	6,237.0	2,369.0	1,846.0	1,856.0	2,243.0	1,247.0	4,178.0	3,355.0	8,780.0	12,879.0
Oil Additions (mmbbls)	867.0	(429.0)	232.0	632.0	652.0	496.0	528.0	650.0	695.0	843.0	898.0	2,436.0	3,614.0
Total Additions (mmboe)	1,335.5	370.2	238.8	1,671.5	1,046.8	803.7	837.3	1,023.8	902.8	1,539.3	1,457.2	3,899.3	5,760.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	92.0	833.2	158.7	1,141.2	464.8	307.7	384.5	373.5	537.2	836.8	875.5	2,249.5	3,007.5
Acquisitions	85.5	36.0	12.2	247.5	15.5	28.3	30.7	0.0	11.2	47.2	74.2	132.5	163.2
Dispositions	(27.7)	(28.5)	(2.2)	(35.0)	(126.7)	(6.0)	(39.3)	(21.8)	(126.3)	(116.2)	(58.7)	(301.2)	(362.3)
Revisions of Estimates	1,185.7	(470.5)	70.2	317.8	693.2	473.7	461.5	672.2	480.8	771.5	566.2	1,818.5	2,952.2
Components as % of Total Additions:													
Extensions, Discoveries and Additions	6.9%	225.1%	66.4%	68.3%	44.4%	38.3%	45.9%	36.5%	59.5%	54.4%	60.1%	57.7%	52.2%
Acquisitions	6.4%	9.7%	5.1%	14.8%	1.5%	3.5%	3.7%	0.0%	1.2%	3.1%	5.1%	3.4%	2.8%
Dispositions	-2.1%	-7.7%	-0.9%	-2.1%	-12.1%	-0.7%	-4.7%	-2.1%	-14.0%	-7.5%	-4.0%	-7.7%	-6.3%
Revisions of Estimates	88.8%	-127.1%	29.4%	19.0%	66.2%	58.9%	55.1%	65.7%	53.3%	50.1%	38.9%	46.6%	51.2%
Additions as % of Production:													
Gas	149.8%	263.3%	2.2%	345.5%	127.6%	97.4%	98.4%	116.7%	64.8%	189.7%	133.4%	132.2%	123.3%
Oil	143.5%	-63.6%	33.0%	93.5%	103.5%	78.5%	84.6%	102.0%	110.5%	134.0%	138.2%	127.7%	114.0%
Total	145.7%	37.9%	23.7%	171.1%	111.4%	84.8%	89.2%	106.9%	95.1%	154.6%	136.3%	129.3%	117.3%
Additions as % of Reserves:													
Gas	12.2%	18.4%	0.2%	21.7%	8.1%	6.3%	6.4%	7.6%	4.3%	13.6%	10.6%	28.9%	43.0%
Oil	11.8%	-6.2%	3.6%	9.8%	10.1%	7.8%	8.4%	10.4%	11.0%	12.9%	13.2%	37.2%	56.2%
Total	11.9%	3.3%	2.3%	14.9%	9.2%	7.2%	7.5%	9.2%	8.1%	13.2%	12.1%	33.6%	50.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,929.0	$1,924.0	$1,578.0	$1,912.0	$2,439.0	$3,186.0	$3,268.0	$2,422.0	$1,421.0	$1,205.0	$1,194.0	$3,820.0	$9,510.0
Development	$15,950.0	$12,161.0	$15,974.0	$16,637.0	$20,984.0	$27,447.0	$29,627.0	$25,524.0	$16,081.0	$14,194.0	$15,113.0	$45,388.0	$100,539.0
Acquisitions	$1,116.0	$32.0	$1,298.0	$8,848.0	$1,877.0	$2,872.0	$852.0	$685.0	$95.0	$281.0	$859.0	$1,235.0	$2,772.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$18,995.0	$14,117.0	$18,850.0	$27,397.0	$25,300.0	$33,505.0	$33,747.0	$28,631.0	$17,597.0	$15,680.0	$17,166.0	$50,443.0	$112,821.0
Expenditures as % of Total:													
Exploration	10.2%	13.6%	8.4%	7.0%	9.6%	9.5%	9.7%	8.5%	8.1%	7.7%	7.0%	7.6%	8.4%
Development	84.0%	86.1%	84.7%	60.7%	82.9%	81.9%	87.8%	89.1%	91.4%	90.5%	88.0%	90.0%	89.1%
Acquisitions	5.9%	0.2%	6.9%	32.3%	7.4%	8.6%	2.5%	2.4%	0.5%	1.8%	5.0%	2.4%	2.5%
Cashflow (US$million)	$29,221.0	$22,475.0	$28,580.0	$37,580.0	$37,323.0	$35,588.0	$33,353.0	$20,214.5	$16,826.0	$23,392.4	$31,804.0	$72,022.4	$125,589.9
Cashflow (US$/boe)	$31.88	$22.99	$28.34	$38.47	$39.73	$37.55	$35.54	$21.12	$17.72	$23.49	$29.75	$23.89	$25.58
Recycle Ratio	2.3x	0.6x	0.4x	2.4x	1.8x	0.9x	0.9x	0.8x	1.0x	2.5x	2.6x	2.0x	1.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$13.99	$38.84	$76.70	$12.71	$20.23	$39.21	$38.88	$26.73	$17.19	$9.57	$11.31	$12.10	$18.47
Acquisition Costs	$13.05	$0.89	$106.68	$35.75	$121.10	$101.36	$27.78	nm	$8.51	$5.96	$11.58	$9.32	$16.99
All Sources (incl. revisions)	$13.93	$35.41	$78.22	$16.05	$21.56	$41.38	$38.49	$27.38	$17.10	$9.47	$11.32	$12.01	$18.43
Exploration & Development (excl. revisions)	$194.34	$16.91	$110.62	$16.25	$50.39	$99.57	$85.55	$74.82	$32.58	$18.40	$18.63	$21.88	$36.59
Acquisition Costs	$13.05	$0.89	$106.68	$35.75	$121.10	$101.36	$27.78	nm	$8.51	$5.96	$11.58	$9.32	$16.99
All Sources (excl. revisions)	$107.01	$16.24	$110.34	$19.73	$52.67	$99.72	$81.29	$76.66	$32.09	$17.74	$18.08	$21.18	$35.58
Geographically Segmented Costs													
North America	$183.29	$45.71	$37.53	$29.19	$28.17	$33.67	$24.80	$33.04	$15.40	$4.78	$6.70	$6.94	$11.21
Africa	$254.38	$286.48	$41.91	$14.99	$28.45	$30.99	$60.20	$45.74	$59.22	$10.02	$10.69	$18.06	$32.78
Asia Pacific	$7.35	-$106.29	$475.32	$45.96	$16.83	$26.96	$32.32	$16.81	$15.98	$42.81	$13.78	$18.86	$21.13
Other International	$6.30	$10.88	$408.00	$7.07	$18.36	$72.01	$56.39	$26.82	$15.48	$18.93	$29.44	$19.64	$26.10

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Chevron (CVX - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	11.40	10.03	11.24	15.23	17.01	17.62	18.06	14.14	12.86	10.67	10.67	11.29	13.14
Exploration Expense	1.28	1.37	1.14	1.24	1.82	1.92	2.07	3.45	1.06	0.84	0.84	1.00	1.68
G&A/Other	(0.63)	0.87	1.20	1.76	(2.32)	(0.22)	(1.35)	(0.46)	(0.09)	(0.39)	(0.39)	0.10	(0.29)
F&D Costs	13.93	35.41	78.22	16.05	21.56	41.38	38.49	27.38	17.10	9.47	9.47	12.01	18.43
Return on Capital	10.80	25.90	54.68	11.68	16.65	31.01	28.68	20.22	12.66	7.02	7.02	9.25	15.33
Income Taxes	11.06	24.08	55.01	10.40	15.13	27.25	23.74	17.20	10.79	4.82	4.82	6.28	11.33
Breakeven Oil Price	47.84	97.66	201.49	56.36	69.84	118.97	109.69	81.92	54.38	32.43	32.43	39.92	59.62
Quality Differential	17.39	6.88	7.20	5.82	3.05	5.66	7.39	4.60	4.47	3.89	3.89	3.77	4.66
Required WTI Price	65.23	104.54	208.69	62.18	72.89	124.62	117.09	86.52	58.85	36.32	36.32	43.69	64.28

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	18.48	13.91	15.05	17.22	19.48	21.92	22.48	17.98	15.69	14.31	14.31	14.29	16.57
Exploration Expense	1.51	1.72	0.75	0.84	1.02	2.32	2.40	6.14	1.58	1.20	1.20	1.87	2.84
G&A/Other	(1.43)	0.27	1.07	(0.12)	(0.17)	(0.47)	(2.12)	1.38	(1.34)	(1.51)	(1.51)	(0.68)	(0.53)
F&D Costs	110.44	45.71	37.53	29.19	28.17	33.67	24.80	33.04	15.40	4.78	4.78	6.94	11.21
Return on Capital	57.48	19.77	15.35	14.10	14.49	17.54	13.60	16.44	15.86	5.25	5.25	8.78	11.28
Income Taxes	31.43	10.84	8.29	8.10	8.23	9.97	8.10	9.23	8.32	2.75	2.75	3.72	5.43
Breakeven Oil Price	217.91	92.23	78.04	69.32	71.23	84.94	69.26	84.22	55.51	26.79	26.79	34.92	46.79
Quality Differential	9.24	6.88	6.57	9.77	11.83	11.48	11.40	9.09	9.16	9.32	9.32	10.08	10.14
Required WTI Price	227.15	99.10	84.60	79.09	83.06	96.43	80.66	93.31	64.67	36.11	36.11	45.00	56.94

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	8.80	8.61	9.93	14.56	16.16	16.16	16.52	12.68	11.83	9.45	9.45	10.22	11.91
Exploration Expense	1.19	1.25	1.28	1.38	2.09	1.79	1.96	2.44	0.87	0.71	0.71	0.69	1.27
G&A/Other	(0.34)	1.08	1.24	2.39	(3.06)	(0.13)	(1.09)	(1.16)	0.37	(0.02)	(0.02)	0.37	(0.20)
F&D Costs	9.95	32.56	131.22	10.61	19.27	45.03	49.45	25.68	17.83	18.51	18.51	19.31	25.89
Return on Capital	8.76	28.16	106.85	8.65	16.52	37.36	40.63	21.51	14.81	13.89	13.89	14.52	20.34
Income Taxes	11.15	29.11	125.32	8.65	16.63	35.89	35.88	14.77	10.17	9.64	9.64	9.67	14.43
Breakeven Oil Price	39.51	100.78	375.84	46.24	67.62	136.11	143.36	75.92	55.87	52.19	52.19	54.79	73.64
Quality Differential	20.38	6.88	7.42	4.45	0.01	3.69	6.00	2.90	2.76	2.08	2.08	1.52	2.69
Required WTI Price	59.89	107.65	383.26	50.69	67.63	139.79	149.36	78.82	58.63	54.28	54.28	56.31	76.33

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	10.71	9.35	9.00	10.00	12.56	14.30	14.05	12.46	13.99	11.14	11.51	12.17	12.63
Exploration Expense	1.72	1.49	1.41	1.12	2.58	1.29	2.42	4.42	1.87	0.44	0.36	0.87	1.93
G&A/Other	3.26	(0.55)	0.75	2.60	1.30	(0.84)	(1.32)	(4.07)	1.13	(1.74)	(0.65)	(0.46)	(1.38)
F&D Costs	89.37	64.48	41.91	14.99	28.45	30.99	60.20	45.74	59.22	10.02	10.69	18.06	32.78
Return on Capital	87.46	45.37	25.40	9.53	17.72	20.70	39.83	27.40	36.67	5.66	5.72	10.60	19.14
Income Taxes	313.70	73.28	55.39	16.66	36.27	35.94	72.40	29.79	39.86	9.67	8.85	15.04	26.99
Breakeven Oil Price	506.21	193.43	133.86	54.90	98.89	102.38	187.58	115.74	152.73	35.20	36.48	56.29	92.09
Quality Differential	10.87	3.55	3.98	3.62	3.62	1.74	7.13	6.01	4.56	2.53	5.27	4.12	5.10
Required WTI Price	517.09	196.98	137.84	58.52	102.50	104.12	194.72	121.76	157.30	37.72	41.75	60.42	97.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia													
Operating Costs	8.58	8.05	11.10	17.72	16.71	16.35	16.85	13.16	11.01	10.97	11.85	11.25	12.85
Exploration Expense	1.01	0.40	1.04	1.01	1.72	0.97	1.13	1.79	0.41	0.44	0.26	0.37	0.84
G&A/Other	(0.44)	1.32	0.86	(0.64)	(0.40)	1.49	0.64	0.21	0.31	(0.90)	0.74	0.04	0.20
F&D Costs	7.35	13.81	15.67	45.96	16.83	26.96	32.32	16.81	15.98	42.81	13.78	18.86	21.13
Return on Capital	4.54	7.57	7.73	21.71	7.32	11.58	13.34	6.85	6.16	15.69	5.02	7.00	8.12
Income Taxes	3.69	5.01	5.46	13.26	4.06	6.68	6.63	3.78	3.32	7.61	2.06	3.33	4.02
Breakeven Oil Price	24.72	36.17	41.87	99.03	46.25	64.04	70.90	42.60	37.19	76.62	33.70	40.86	47.16
Quality Differential	24.79	9.72	9.16	3.38	(2.89)	(1.10)	1.89	(2.45)	(1.55)	(0.43)	(0.65)	(0.88)	(0.64)
Required WTI Price	49.51	45.89	51.03	102.41	43.36	62.93	72.79	40.15	35.64	76.19	33.05	39.99	46.52

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other													
Operating Costs	8.00	8.76	9.39	14.29	17.92	17.05	17.66	12.32	11.57	7.71	7.56	8.72	10.81
Exploration Expense	1.15	1.96	1.42	1.87	2.19	2.91	2.55	1.98	0.82	1.01	0.72	0.84	1.32
G&A/Other	(2.33)	1.77	1.88	5.03	(8.93)	(1.38)	(2.73)	(0.93)	0.06	1.30	1.23	0.93	0.01
F&D Costs	6.30	10.88	15.98	7.07	18.36	72.01	56.39	26.82	15.48	18.93	29.44	19.64	26.10
Return on Capital	7.96	13.84	17.33	9.05	28.70	104.45	83.01	39.83	21.96	21.72	27.60	22.80	33.72
Income Taxes	8.62	15.80	21.08	9.39	31.60	101.91	79.35	23.66	13.52	15.31	24.28	16.57	24.90
Breakeven Oil Price	29.70	53.01	67.08	46.69	89.83	296.95	236.24	103.68	63.42	65.99	90.83	69.50	96.86
Quality Differential	19.48	5.89	7.79	5.91	0.92	9.74	9.57	6.63	5.88	3.62	(2.04)	2.49	4.73
Required WTI Price	49.18	58.90	74.87	52.60	90.75	306.70	245.81	110.31	69.29	69.61	88.79	71.99	101.59

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chevron (CVX - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.22	13.87	19.41	22.00	22.75	22.99	16.89	15.11	15.11	12.92	12.76	13.57	15.94
Exploration Expense	1.67	1.41	1.59	2.35	2.48	2.64	4.13	1.24	1.24	1.01	1.35	1.20	2.04
G&A/Other	1.05	1.48	2.24	(3.00)	(0.28)	(1.72)	(0.55)	(0.10)	(0.10)	(0.47)	0.87	0.11	(0.35)
F&D Costs (1-Year)	47.29	79.87	28.55	30.13	55.84	50.21	33.32	19.62	19.62	12.06	13.73	14.63	22.66
Return on Capital	32.73	49.14	18.50	20.91	37.93	34.33	22.98	13.97	13.97	8.50	9.51	10.66	17.86
Income Taxes	30.43	49.44	16.48	19.00	33.34	28.42	19.54	11.90	11.90	5.84	5.02	7.23	13.20
Breakeven Oil Price	**125.39**	**195.21**	**86.77**	**91.38**	**152.07**	**136.86**	**96.31**	**61.74**	**61.74**	**39.86**	**43.22**	**47.41**	**71.35**
Quality Differential	8.37	8.89	7.39	3.91	7.31	9.41	5.50	5.25	5.25	4.71	3.59	4.52	5.69
Required WTI Price	**133.77**	**204.10**	**94.16**	**95.29**	**159.38**	**146.27**	**101.81**	**66.99**	**66.99**	**44.58**	**46.81**	**51.93**	**77.04**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.22	13.87	19.41	22.00	22.75	22.99	16.89	15.11	15.11	12.92	12.76	13.57	15.94
Exploration Expense	1.67	1.41	1.59	2.35	2.48	2.64	4.13	1.24	1.24	1.01	1.35	1.20	2.04
G&A/Other	1.05	1.48	2.24	(3.00)	(0.28)	(1.72)	(0.55)	(0.10)	(0.10)	(0.47)	0.87	0.11	(0.35)
F&D Costs (1-Year)	26.05	30.59	62.55	36.35	63.25	37.72	22.08	14.74	14.74	21.89	17.21	17.35	22.73
Return on Capital	18.02	18.84	40.51	25.18	42.95	25.74	15.10	10.36	10.36	15.50	11.90	12.59	15.72
Income Taxes	16.75	18.96	36.08	22.88	37.75	21.31	12.84	8.83	8.83	10.64	6.28	8.54	11.62
Breakeven Oil Price	**75.77**	**85.16**	**162.39**	**105.76**	**168.90**	**108.67**	**70.47**	**50.18**	**50.18**	**61.50**	**50.36**	**53.36**	**67.70**
Quality Differential	8.37	8.89	7.39	3.91	7.31	9.41	5.50	5.25	5.25	4.71	3.59	4.52	5.69
Required WTI Price	**84.14**	**94.05**	**169.78**	**109.67**	**176.21**	**118.08**	**75.97**	**55.43**	**55.43**	**66.21**	**53.95**	**57.88**	**73.39**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

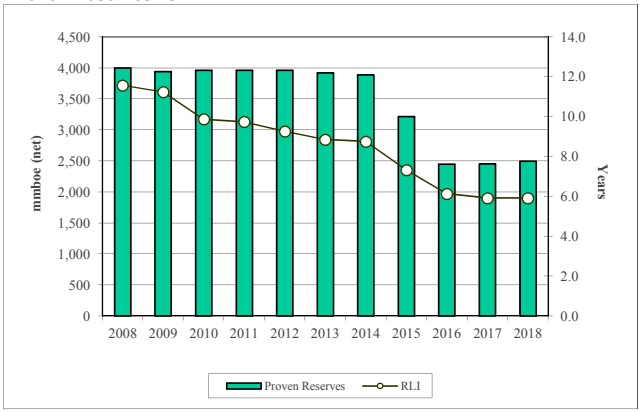
China Petroleum & Chemical Corporation Limited (SNP - NYSE)

US$, net

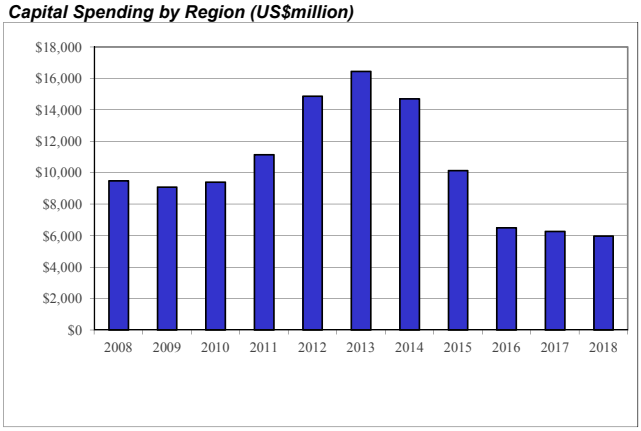
- Sinopec reported results from operations of $6.12/boe versus a loss of $4.00/boe last year.
- The company's one-year F&D costs dropped to $12.88/boe in 2018 versus $14.83/boe in 2017. On a realized oil:gas price ratio basis, F&D costs declined to $14.76/boe from $16.48/boe, while the costs for PD reserves were lower at $13.36/boe versus $17.86/boe last year.
- Based on 2018 results, we estimate Sinopec requires a Brent breakeven oil price of $48.83/boe on a realized ratio basis on total proved reserves, while its PD costs imply a Brent breakeven oil price of $61.63/boe.
- The company's 2018 ROCE was 8.2% in 2018 versus 7.1% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Yuan to U.S. Dollars using average annual exchange rates.

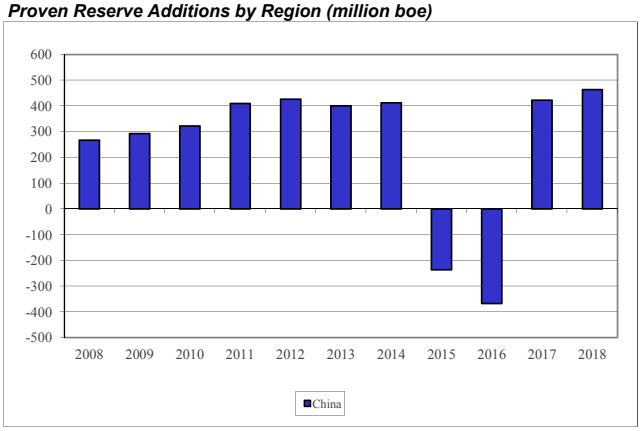
Proven Reserves vs RLI



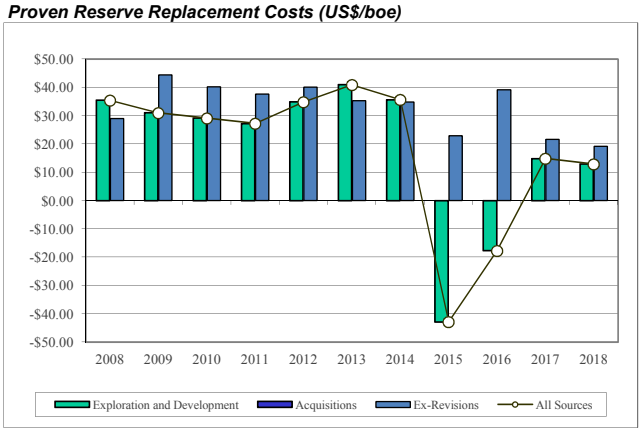
Capital Spending by Region (US$million)



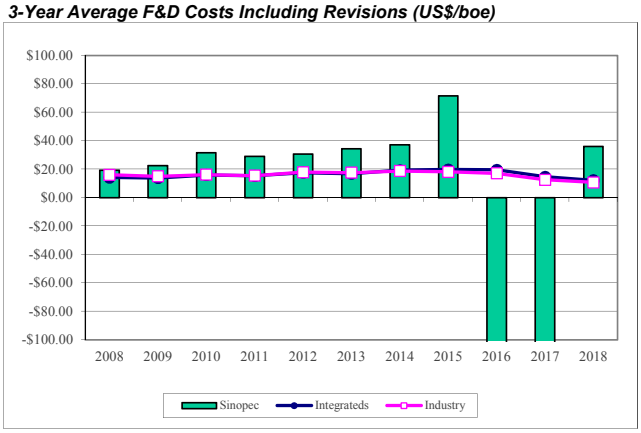
Proven Reserve Additions by Region (million boe)



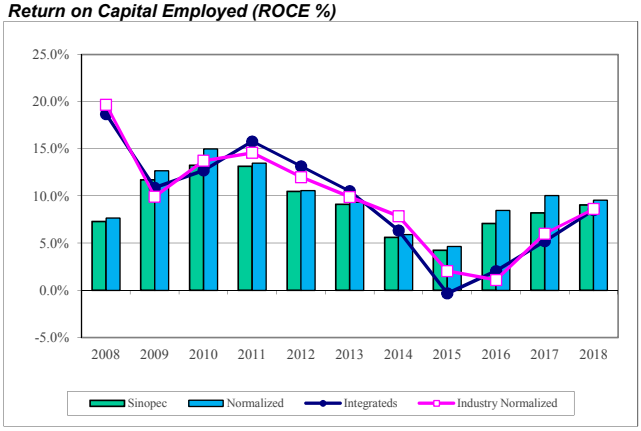
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)

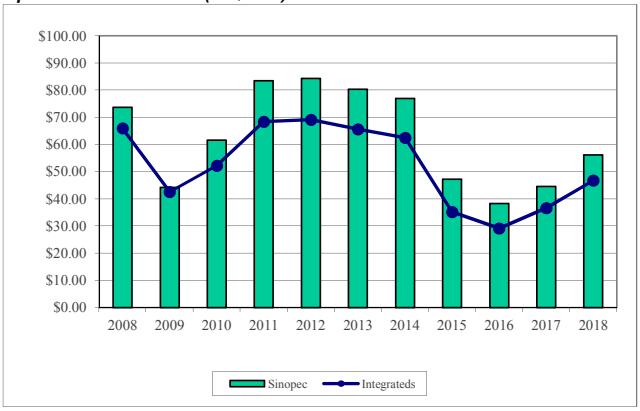


Source: BMO Capital Markets, Company Reports

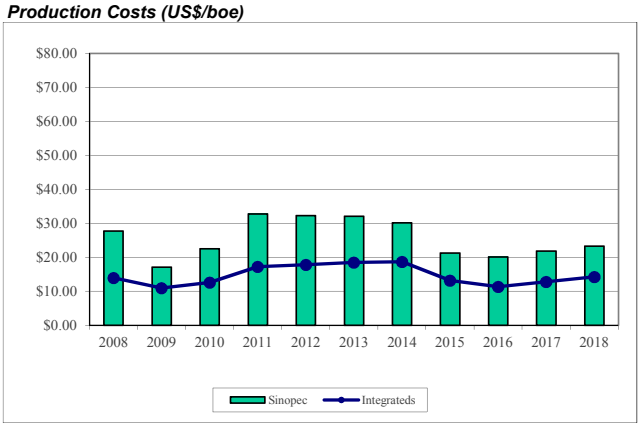
China Petroleum & Chemical Corporation Limited (SNP - NYSE) US$/boe, net

Worldwide

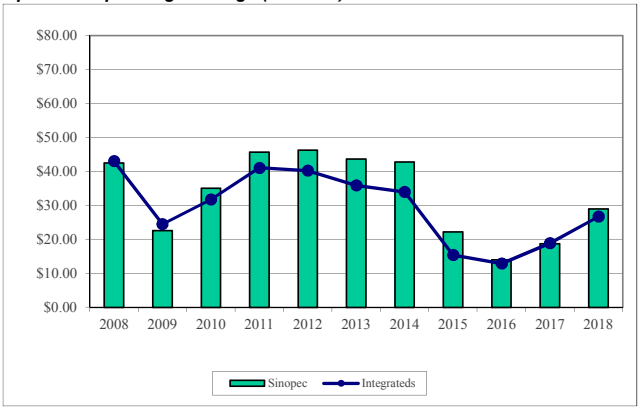
Upstream Net Revenue (US$/boe)



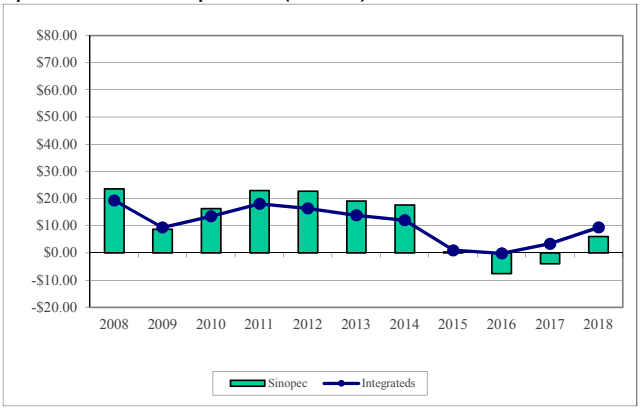
Production Costs (US$/boe)



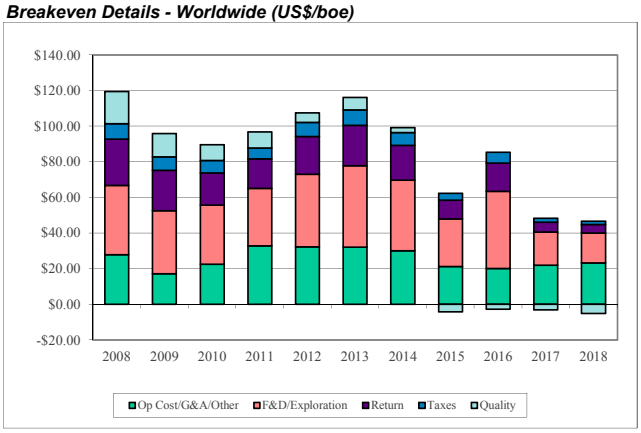
Upstream Operating Earnings (US$/boe)



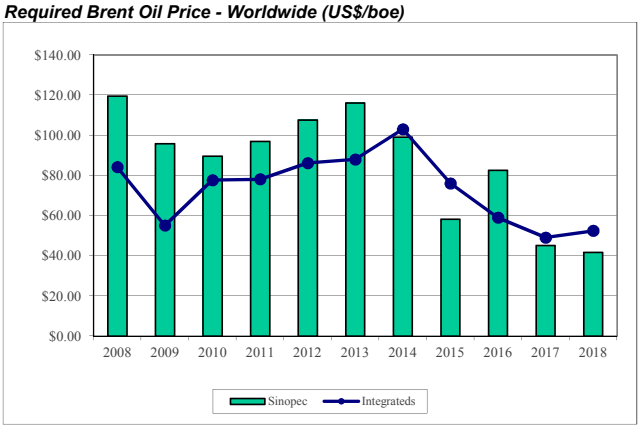
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)

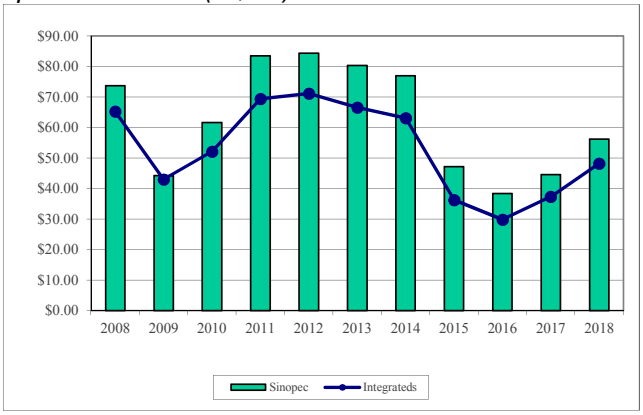


Source: BMO Capital Markets, Company Reports

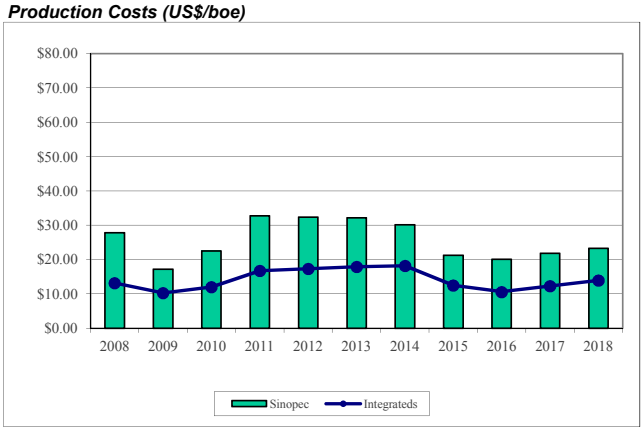
China Petroleum & Chemical Corporation Limited (SNP - NYSE) US$/boe, net

Total International

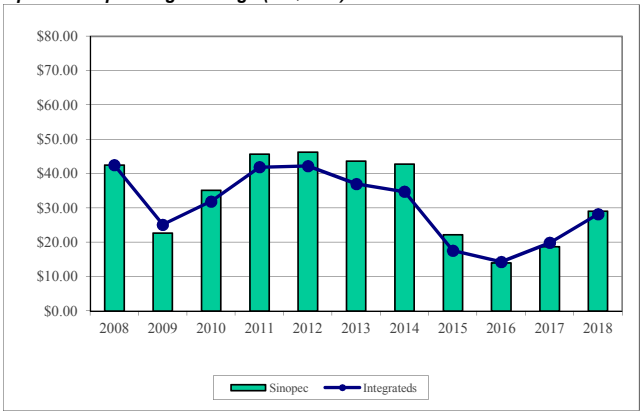
Upstream Net Revenue (US$/boe)



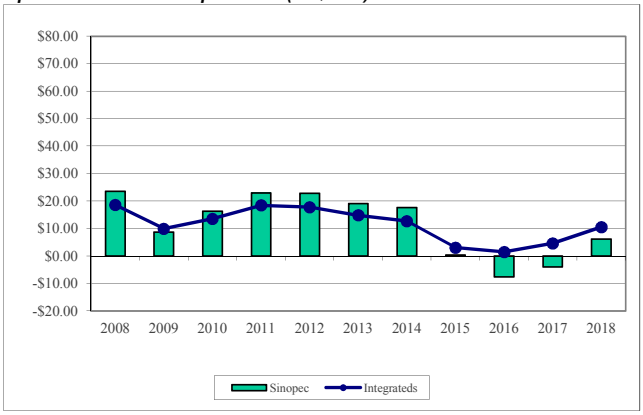
Production Costs (US$/boe)



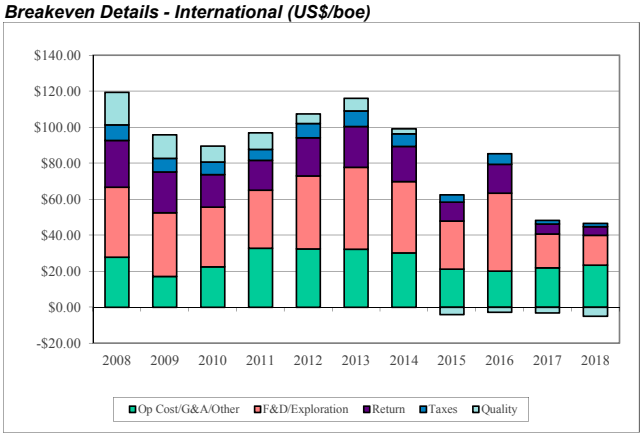
Upstream Operating Earnings (US$/boe)



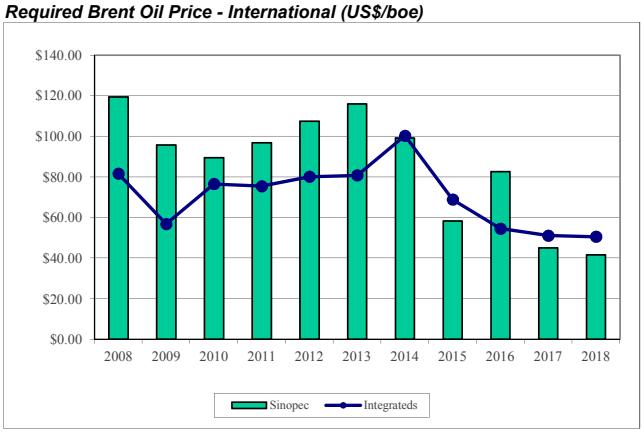
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

China Petroleum & Chemical Corporation Limited (SNP - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	25,582	15,568	24,927	34,136	36,190	35,696	34,259	20,487	16,013	21,746	28,640
Midstream / Downstream Revenue	182,226	181,324	257,742	353,538	405,432	432,786	424,360	300,743	274,589	327,473	408,422
Other	7,317	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	215,126	196,892	282,669	387,674	441,622	468,482	458,619	321,231	290,602	349,219	437,062
Crude Oil and Product Purchases	184,830	159,428	235,219	330,532	380,620	402,860	396,507	266,509	234,382	286,211	375,843
Production and Transportation Expenses	9,614	6,022	9,050	13,329	13,830	14,241	13,399	8,655	7,322	8,143	8,863
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,196	1,544	1,619	2,064	2,462	2,045	1,780	1,664	1,661	1,641	1,624
General and Administrative	9,032	10,150	12,517	15,547	17,903	20,377	20,385	19,994	19,301	20,689	21,672
Depreciation, Depletion and Amortization	6,665	7,390	8,750	9,873	11,168	13,218	14,622	15,333	16,318	17,062	16,624
Interest, net	1,649	1,040	1,080	1,185	1,579	1,469	1,532	820	903	231	(151)
Other	(1,042)	(475)	(887)	(393)	(50)	(804)	353	585	(1,348)	2,415	(2,395)
Earnings Before Income Tax	3,182	11,794	15,320	15,536	14,110	15,077	10,042	7,669	12,063	12,828	14,983
Current Income Taxes	119	2,420	3,840	4,098	3,689	3,979	2,686	1,793	2,991	3,935	4,000
Future Income Taxes	(527)	(65)	(44)	(57)	91	49	166	214	126	(1,527)	(944)
Total Income Taxes	(409)	2,354	3,796	4,041	3,780	4,028	2,852	2,007	3,116	2,409	3,056
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	3,591	9,439	11,525	11,494	10,330	11,049	7,190	5,662	8,946	10,419	11,927
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	3,591	9,439	11,525	11,494	10,330	11,049	7,190	5,662	8,946	10,419	11,927
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	3,591	9,439	11,525	11,494	10,330	11,049	7,190	5,662	8,946	10,419	11,927

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	3,591	9,439	11,525	11,494	10,330	11,049	7,190	5,662	8,946	10,419	11,927
Charges and Credits Not Impacting Cash	5,057	10,919	13,329	10,664	12,780	14,586	15,992	16,276	20,168	19,698	17,676
Other	(520)	(376)	160	587	1,519	1,097	2,011	2,598	(3,926)	(2,433)	(916)
Cash Flow From Operations	8,128	19,982	25,015	22,746	24,630	26,732	25,194	24,536	25,189	27,684	28,686
Change in Working Capital / Other	1,443	2,279	152	558	(2,061)	(2,027)	(1,118)	1,847	7,100	567	(2,100)
Net Cash From Operating Activities	9,571	22,261	25,166	23,304	22,569	24,705	24,075	26,384	32,289	28,251	26,586
Total Capital Expenditures	(15,672)	(15,335)	(15,716)	(20,382)	(23,089)	(23,580)	(18,346)	(15,188)	(9,853)	(10,498)	(15,573)
Acquisitions, net	(210)	(651)	440	(1,398)	(1,405)	(4,764)	(2,031)	(3,193)	66	4	(315)
Other	50	(1,000)	(354)	50	(1,216)	(729)	(1,148)	(228)	(179)	(11,008)	5,846
Net Cash From Investing Activities	(15,832)	(16,986)	(15,630)	(21,730)	(25,710)	(29,072)	(21,525)	(18,609)	(9,966)	(21,502)	(10,041)
Net Change in Debt	8,408	(2,798)	(2,853)	3,958	6,618	6,088	2,267	(9,960)	(9,481)	(1,707)	(3,842)
Net Change in Common Stock	-	-	-	-	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(1,809)	(1,985)	(2,422)	(2,548)	(4,040)	(4,603)	(4,549)	(3,853)	(2,540)	(4,837)	(7,321)
Other	(438)	(237)	(3,042)	(1,799)	(1,686)	3,641	(1,194)	15,294	(1,983)	(1,817)	(5,656)
Net Cash From Financing Activities	6,161	(5,020)	(8,317)	(389)	892	5,127	(3,476)	1,481	(14,004)	(8,361)	(16,819)
Effect of Exchange Rate on Cash	(11)	-	(4)	(3)	(0)	(13)	3	47	39	(52)	78
Net Increase/(Decrease) in Cash	(112)	255	1,215	1,182	(2,249)	747	(924)	9,303	8,358	(1,665)	(196)
Cash and Equivalents, Beginning of Year	969	857	1,112	2,328	3,510	1,260	2,007	1,083	10,386	18,744	17,080
Cash and Equivalents, End of Year	857	1,112	2,328	3,510	1,260	2,007	1,083	10,386	18,744	17,080	16,884

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

China Petroleum & Chemical Corporation Limited (SNP - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	23,798	29,464	38,448	53,030	57,859	60,670	58,448	52,890	62,045	78,279	76,208
Net Property, Plant and Equipment	66,932	60,301	71,636	87,560	93,359	108,910	114,169	116,563	123,436	113,845	114,092
Other Assets	21,380	38,736	36,947	34,249	49,568	55,352	62,926	60,168	40,059	43,950	50,410
Total Assets	112,109	128,501	147,032	174,839	200,786	224,931	235,543	229,621	225,540	236,074	240,711
Total Current Liabilities	41,245	45,879	49,703	66,385	81,376	93,007	98,065	73,612	73,074	85,736	85,426
Long-term Debt	18,294	21,347	20,162	8,404	19,738	17,442	17,493	15,187	10,937	14,667	14,139
Deferred Income Taxes	753	729	2,219	2,349	2,543	1,297	1,269	1,314	1,153	957	899
Other Liabilities and Deferred Credits	1,668	2,161	8,407	18,868	10,259	12,078	13,945	14,728	15,275	8,519	10,763
Total Liabilities	61,960	70,116	80,491	96,007	113,916	123,824	130,772	104,841	100,440	109,879	111,227
Minority Interests	2,972	3,395	4,628	5,435	5,884	8,592	8,526	17,533	18,096	18,757	21,051
Common Shares	12,475	12,692	12,810	13,414	13,762	18,959	19,196	19,264	18,221	17,914	18,302
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	34,703	42,299	49,103	59,984	67,224	73,556	77,049	87,983	88,783	89,524	90,130
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	(0)	0
Total Shareholders' Equity	47,177	54,990	61,913	73,398	80,986	92,516	96,245	107,247	107,004	107,438	108,432
Total Liabilities and Shareholders' Equity	112,109	128,501	147,032	174,839	200,786	224,931	235,543	229,621	225,540	236,074	240,711
Return on Capital Employed (ROCE)	**7.3%**	**11.7%**	**13.3%**	**13.1%**	**10.5%**	**9.1%**	**5.6%**	**4.2%**	**7.1%**	**8.2%**	**9.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	25,502	15,508	24,760	33,990	36,065	35,609	34,202	20,723	15,297	18,521	23,728	57,545	112,470
Production Costs	9,614	6,022	9,050	13,329	13,830	14,241	13,399	9,324	8,041	9,087	9,850	26,978	49,700
Exploration	1,196	1,544	1,619	2,064	2,462	2,045	1,780	1,665	1,661	1,641	1,624	4,926	8,371
DD&A	3,844	3,842	4,935	5,819	6,386	7,587	8,332	9,300	9,734	10,074	9,674	29,483	47,115
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax Results Of Operations	10,849	4,101	9,156	12,778	13,386	11,736	10,691	434	(4,139)	(2,281)	2,579	(3,841)	7,284
Income Taxes	2,712	1,025	2,579	3,426	3,638	3,271	2,833	258	(1,125)	(620)	(6)	(1,752)	1,339
Results Of Operations	8,137	3,076	6,577	9,353	9,748	8,465	7,858	176	(3,014)	(1,661)	2,586	(2,089)	5,945

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	25,502	15,508	24,760	33,990	36,065	35,609	34,202	20,723	15,297	18,521	23,728	57,545	112,470
Production Costs	9,614	6,022	9,050	13,329	13,830	14,241	13,399	9,324	8,041	9,087	9,850	26,978	49,700
Exploration	1,196	1,544	1,619	2,064	2,462	2,045	1,780	1,665	1,661	1,641	1,624	4,926	8,371
DD&A	3,844	3,842	4,935	5,819	6,386	7,587	8,332	9,300	9,734	10,074	9,674	29,483	47,115
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax Results Of Operations	10,849	4,101	9,156	12,778	13,386	11,736	10,691	434	(4,139)	(2,281)	2,579	(3,841)	7,284
Income Taxes	2,712	1,025	2,579	3,426	3,638	3,271	2,833	258	(1,125)	(620)	(6)	(1,752)	1,339
Results Of Operations	8,137	3,076	6,577	9,353	9,748	8,465	7,858	176	(3,014)	(1,661)	2,586	(2,089)	5,945

Notes: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

China Petroleum & Chemical Corporation Limited (SNP - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$73.74	$44.20	$61.67	$83.48	$84.33	$80.38	$76.92	$47.22	$38.34	$44.57	$56.18	$46.53	$53.04
Production Costs	$27.80	$17.16	$22.54	$32.74	$32.34	$32.15	$30.13	$21.25	$20.15	$21.87	$23.32	$21.81	$23.44
Exploration	$3.46	$4.40	$4.03	$5.07	$5.76	$4.62	$4.00	$3.79	$4.16	$3.95	$3.85	$3.98	$3.95
DD&A	$11.11	$10.95	$12.29	$14.29	$14.93	$17.13	$18.74	$21.19	$24.40	$24.25	$22.91	$23.84	$22.22
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$31.37	$11.69	$22.80	$31.38	$31.30	$26.49	$24.04	$0.99	-$10.37	-$5.49	$6.11	-$3.11	$3.44
Income Taxes	$7.84	$2.92	$6.42	$8.41	$8.51	$7.38	$6.37	$0.59	-$2.82	-$1.49	-$0.02	-$1.42	$0.63
Results Of Operations	$23.53	$8.77	$16.38	$22.97	$22.79	$19.11	$17.67	$0.40	-$7.55	-$4.00	$6.12	-$1.69	$2.80

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$73.74	$44.20	$61.67	$83.48	$84.33	$80.38	$76.92	$47.22	$38.34	$44.57	$56.18	$46.53	$53.04
Production Costs	$27.80	$17.16	$22.54	$32.74	$32.34	$32.15	$30.13	$21.25	$20.15	$21.87	$23.32	$21.81	$23.44
Exploration	$3.46	$4.40	$4.03	$5.07	$5.76	$4.62	$4.00	$3.79	$4.16	$3.95	$3.85	$3.98	$3.95
DD&A	$11.11	$10.95	$12.29	$14.29	$14.93	$17.13	$18.74	$21.19	$24.40	$24.25	$22.91	$23.84	$22.22
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$31.37	$11.69	$22.80	$31.38	$31.30	$26.49	$24.04	$0.99	-$10.37	-$5.49	$6.11	-$3.11	$3.44
Income Taxes	$7.84	$2.92	$6.42	$8.41	$8.51	$7.38	$6.37	$0.59	-$2.82	-$1.49	-$0.02	-$1.42	$0.63
Results Of Operations	$23.53	$8.77	$16.38	$22.97	$22.79	$19.11	$17.67	$0.40	-$7.55	-$4.00	$6.12	-$1.69	$2.80

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
China													
Net Revenue	$73.74	$44.20	$61.67	$83.48	$84.33	$80.38	$76.92	$47.22	$38.34	$44.57	$56.18	$46.53	$53.04
Production Costs	$27.80	$17.16	$22.54	$32.74	$32.34	$32.15	$30.13	$21.25	$20.15	$21.87	$23.32	$21.81	$23.44
Exploration	$3.46	$4.40	$4.03	$5.07	$5.76	$4.62	$4.00	$3.79	$4.16	$3.95	$3.85	$3.98	$3.95
DD&A	$11.11	$10.95	$12.29	$14.29	$14.93	$17.13	$18.74	$21.19	$24.40	$24.25	$22.91	$23.84	$22.22
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$31.37	$11.69	$22.80	$31.38	$31.30	$26.49	$24.04	$0.99	-$10.37	-$5.49	$6.11	-$3.11	$3.44
Income Taxes	$7.84	$2.92	$6.42	$8.41	$8.51	$7.38	$6.37	$0.59	-$2.82	-$1.49	-$0.02	-$1.42	$0.63
Results Of Operations	$23.53	$8.77	$16.38	$22.97	$22.79	$19.11	$17.67	$0.40	-$7.55	-$4.00	$6.12	-$1.69	$2.80

Source: BMO Capital Markets, Company Reports

China Petroleum & Chemical Corporation Limited (SNP - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	802.7	819.2	1,208.2	1,416.4	1,638.4	1,808.2	1,950.7	2,002.7	2,087.7	2,490.4	2,668.5	2,415.5	2,240.0
Liquids Production (b/d)	813,699	824,658	898,630	879,452	898,630	912,329	893,151	868,493	745,205	723,288	712,329	726,941	788,493
Total Production (boe/d)	947,489	961,187	1,100,000	1,115,525	1,171,689	1,213,699	1,218,265	1,202,283	1,093,151	1,138,356	1,157,078	1,129,528	1,161,826
% Gas Production	14%	14%	18%	21%	23%	25%	27%	28%	32%	36%	38%	36%	32%
% Oil Production	86%	86%	82%	79%	77%	75%	73%	72%	68%	64%	62%	64%	68%
Proven Reserves:													
Gas Reserves (bcf)	6,959.0	6,739.0	6,447.0	6,709.0	6,730.0	6,493.0	6,715.0	7,551.0	7,160.0	6,985.0	6,793.0	6,979.3	7,040.8
Oil Reserves (mmbbls)	2,841.0	2,820.0	2,889.0	2,848.0	2,843.0	2,841.0	2,772.0	1,957.0	1,256.0	1,293.0	1,367.0	1,305.3	1,729.0
Total Proven Reserves (mmboe)	4,000.8	3,943.2	3,963.5	3,966.2	3,964.7	3,923.2	3,891.2	3,215.5	2,449.3	2,457.2	2,499.2	2,468.6	2,902.5
% Gas Reserves	29%	28%	27%	28%	28%	28%	29%	39%	49%	47%	45%	47%	40%
% Oil Reserves	71%	72%	73%	72%	72%	72%	71%	61%	51%	53%	55%	53%	60%
Proven Reserve Life Index	11.6	11.2	9.9	9.7	9.3	8.9	8.8	7.3	6.1	5.9	5.9	6.0	6.8
Proven Reserve Additions:													
Gas Additions (bcf)	921.0	79.0	149.0	779.0	619.0	423.0	934.0	1,567.0	371.0	734.0	782.0	1,887.0	4,388.0
Oil Additions (mmbbls)	114.0	280.0	298.0	280.0	323.0	331.0	257.0	-498.0	-429.0	301.0	334.0	206.0	(35.0)
Total Additions (mmboe)	267.5	293.2	322.8	409.8	426.2	401.5	412.7	-236.8	-367.2	423.3	464.3	520.5	696.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	327.7	204.5	234.0	296.2	370.8	465.8	421.5	443.2	166.2	290.2	311.0	767.3	1,632.0
Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Dispositions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Revisions of Estimates	(60.2)	88.7	88.8	113.7	55.3	-64.3	-8.8	-680.0	-533.3	133.2	153.3	(246.8)	(935.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	122.5%	69.8%	72.5%	72.3%	87.0%	116.0%	102.1%	-187.1%	-45.3%	68.5%	67.0%	147.4%	234.4%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dispositions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	-22.5%	30.2%	27.5%	27.7%	13.0%	-16.0%	-2.1%	287.1%	145.3%	31.5%	33.0%	-47.4%	-134.4%
Additions as % of Production:													
Gas	314.3%	26.4%	33.8%	150.7%	103.5%	64.1%	131.2%	214.4%	48.7%	80.7%	80.3%	71.3%	107.3%
Oil	38.4%	93.0%	90.9%	87.2%	98.5%	99.4%	78.8%	-157.1%	-157.7%	114.0%	128.5%	25.9%	-2.4%
Total	77.3%	83.6%	80.4%	100.7%	99.6%	90.6%	92.8%	-54.0%	-92.0%	101.9%	109.9%	42.1%	32.8%
Additions as % of Reserves:													
Gas	13.2%	1.2%	2.3%	11.6%	9.2%	6.5%	13.9%	20.8%	5.2%	10.5%	11.5%	27.0%	62.3%
Oil	4.0%	9.9%	10.3%	9.8%	11.4%	11.7%	9.3%	-25.4%	-34.2%	23.3%	24.4%	15.8%	-2.0%
Total	6.7%	7.4%	8.1%	10.3%	10.7%	10.2%	10.6%	-7.4%	-15.0%	17.2%	18.6%	21.1%	24.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,862.8	$2,133.1	$2,326.4	$3,206.1	$3,588.2	$3,116.0	$2,710.9	$1,841.3	$1,646.8	$1,714.7	$1,830.4	$5,191.9	$9,744.0
Development	$7,627.1	$6,956.5	$7,075.5	$7,947.5	$11,281.0	$13,332.2	$11,997.0	$8,310.3	$4,858.1	$4,563.7	$4,150.1	$13,572.0	$33,879.3
Acquisitions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$9,489.9	$9,089.6	$9,401.9	$11,153.6	$14,869.2	$16,448.3	$14,707.9	$10,151.6	$6,504.9	$6,278.5	$5,980.5	$18,763.9	$43,623.3
Expenditures as % of Total:													
Exploration	19.6%	23.5%	24.7%	28.7%	24.1%	18.9%	18.4%	18.1%	25.3%	27.3%	30.6%	27.7%	22.3%
Development	80.4%	76.5%	75.3%	71.3%	75.9%	81.1%	81.6%	81.9%	74.7%	72.7%	69.4%	72.3%	77.7%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$13,176.2	$8,461.1	$13,131.1	$17,235.4	$18,596.2	$18,097.4	$17,970.1	$11,140.8	$8,381.4	$10,053.9	$13,884.1	$32,319.4	$61,430.3
Cashflow (US$/boe)	$38.10	$24.12	$32.71	$42.33	$43.48	$40.85	$40.41	$25.39	$21.01	$24.20	$32.87	$26.13	$28.97
Recycle Ratio	1.1x	0.8x	1.1x	1.6x	1.2x	1.0x	1.1x	-0.6x	-1.2x	1.6x	2.6x	0.7x	0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$35.48	$31.00	$29.12	$27.21	$34.89	$40.97	$35.64	-$42.86	-$17.72	$14.83	$12.88	$36.05	$62.65
Acquisition Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
All Sources (incl. revisions)	$35.48	$31.00	$29.12	$27.21	$34.89	$40.97	$35.64	-$42.86	-$17.72	$14.83	$12.88	$36.05	$62.65
Exploration & Development (excl. revisions)	$28.96	$44.45	$40.18	$37.66	$40.10	$35.31	$34.89	$22.91	$39.15	$21.64	$19.23	$24.45	$26.73
Acquisition Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
All Sources (excl. revisions)	$28.96	$44.45	$40.18	$37.66	$40.10	$35.31	$34.89	$22.91	$39.15	$21.64	$19.23	$24.45	$26.73
Geographically Segmented Costs													
China	$35.48	$31.00	$29.12	$27.21	$34.89	$40.97	$35.64	-$42.86	-$17.72	$14.83	$12.88	$36.05	$62.65

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

China Petroleum & Chemical Corporation Limited (SNP - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	27.80	17.16	22.54	32.74	32.34	32.15	30.13	21.25	20.15	21.87	21.87	21.81	23.44
Exploration Expense	3.46	4.40	4.03	5.07	5.76	4.62	4.00	3.79	4.16	3.95	3.95	3.98	3.95
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	35.48	31.00	29.12	27.21	34.89	40.97	35.64	22.91	39.15	14.83	14.83	22.29	25.08
Return on Capital	25.93	22.61	18.04	16.64	21.25	22.68	19.52	10.51	15.90	5.53	5.53	8.32	10.71
Income Taxes	8.64	7.54	7.07	6.09	7.93	8.77	7.03	3.93	5.93	2.07	2.07	3.11	3.97
Breakeven Oil Price	101.31	82.72	80.80	87.75	102.17	109.17	96.33	62.39	85.29	48.25	48.25	59.51	67.15
Quality Differential	18.19	13.08	8.79	9.10	5.29	6.91	2.77	(4.16)	(2.70)	(3.15)	(3.15)	(3.64)	(2.46)
Required WTI Price	119.51	95.80	89.59	96.86	107.46	116.09	99.10	58.23	82.59	45.09	45.09	55.87	64.69

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	27.80	17.16	22.54	32.74	32.34	32.15	30.13	21.25	20.15	21.87	21.87	21.81	23.44
Exploration Expense	3.46	4.40	4.03	5.07	5.76	4.62	4.00	3.79	4.16	3.95	3.95	3.98	3.95
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	35.48	31.00	29.12	27.21	34.89	40.97	35.64	22.91	39.15	14.83	14.83	22.29	25.08
Return on Capital	25.93	22.61	18.04	16.64	21.25	22.68	19.52	10.51	15.90	5.53	5.53	8.32	10.71
Income Taxes	8.64	7.54	7.07	6.09	7.93	8.77	7.03	3.93	5.93	2.07	2.07	3.11	3.97
Breakeven Oil Price	101.31	82.72	80.80	87.75	102.17	109.17	96.33	62.39	85.29	48.25	48.25	59.51	67.15
Quality Differential	18.19	13.08	8.79	9.10	5.29	6.91	2.77	(4.16)	(2.70)	(3.15)	(3.15)	(3.64)	(2.46)
Required WTI Price	119.51	95.80	89.59	96.86	107.46	116.09	99.10	58.23	82.59	45.09	45.09	55.87	64.69

Source: BMO Capital Markets, Company Reports

China Petroleum & Chemical Corporation Limited (SNP - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	18.50	25.23	38.11	38.23	37.99	34.99	21.78	20.57	20.57	25.03	28.24	24.46	25.97
Exploration Expense	4.74	4.51	5.90	6.81	5.46	4.65	3.89	4.25	4.25	4.52	4.66	4.47	4.37
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	31.73	30.49	34.49	41.54	45.97	44.33	24.39	40.55	40.55	16.48	14.76	23.93	28.10
Return on Capital	20.67	17.78	20.65	23.13	24.94	23.96	11.07	15.85	15.85	5.92	5.33	8.79	11.77
Income Taxes	6.89	6.97	7.56	8.63	9.64	8.64	4.13	5.92	5.92	2.21	1.99	3.28	4.36
Breakeven Oil Price	**82.53**	**84.98**	**106.72**	**118.33**	**124.00**	**116.57**	**65.27**	**87.14**	**87.14**	**54.16**	**54.97**	**64.94**	**74.57**
Quality Differential	14.10	9.84	10.60	6.25	8.17	3.22	(4.26)	(2.76)	(2.76)	(3.61)	(6.14)	(4.17)	(2.71)
Required WTI Price	**96.63**	**94.82**	**117.31**	**124.59**	**132.16**	**119.79**	**61.00**	**84.38**	**84.38**	**50.55**	**48.83**	**60.77**	**71.86**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	18.50	25.23	38.11	38.23	37.99	34.99	21.78	20.57	20.57	25.03	28.24	24.46	25.97
Exploration Expense	4.74	4.51	5.90	6.81	5.46	4.65	3.89	4.25	4.25	4.52	4.66	4.47	4.37
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	22.71	15.91	33.98	32.24	43.11	40.13	32.22	27.89	27.89	17.86	13.36	19.70	26.29
Return on Capital	14.76	9.18	19.60	17.97	23.41	21.70	14.61	10.66	10.66	9.84	15.67	12.43	17.80
Income Taxes	4.92	3.60	7.18	6.71	9.05	7.82	5.45	3.98	3.98	3.67	5.85	4.64	6.60
Breakeven Oil Price	**65.63**	**58.44**	**104.76**	**101.95**	**119.00**	**109.29**	**77.95**	**67.35**	**67.35**	**60.92**	**67.77**	**65.70**	**81.03**
Quality Differential	14.10	9.84	10.60	6.25	8.17	3.22	(4.26)	(2.76)	(2.76)	(3.61)	(6.14)	(4.17)	(2.71)
Required WTI Price	**79.73**	**68.28**	**115.36**	**108.21**	**127.17**	**112.51**	**73.69**	**64.60**	**64.60**	**57.31**	**61.63**	**61.53**	**78.32**

Source: BMO Capital Markets, Company Reports

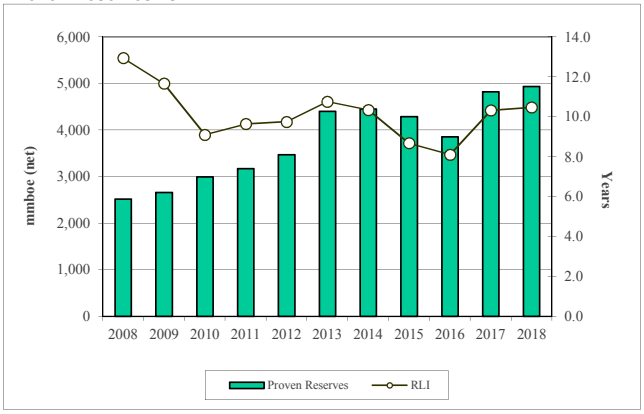
See pages F1 to F4 for analyst coverage.

CNOOC (CEO - NYSE) US$, net

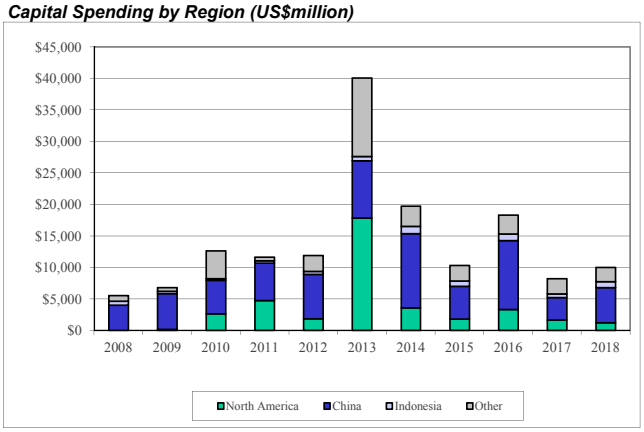
- CNOOC reported strong results from operations of $16.09/boe in 2018 versus $12.26/boe last year.
- The company's F&D costs increased to $26.07/boe from $14.96/boe in 2017. On a realized oil:gas price ratio basis, F&D costs rose to $18.22/boe from $15.79/boe, while the costs for PD reserves decreased to $21.32/boe from $36.39/boe last year.
- CNOOC's strong F&D costs performance in 2018 resulted in a lower Brent breakeven price of $53.73/boe on a realized ratio basis on total proved reserves, while its PD cost assessment implies a Brent breakeven oil price of $59.57/boe.
- The company's ROCE improved to 13.2% in 2018 from 6.2% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Yuan to U.S. Dollars using average annual exchange rates.

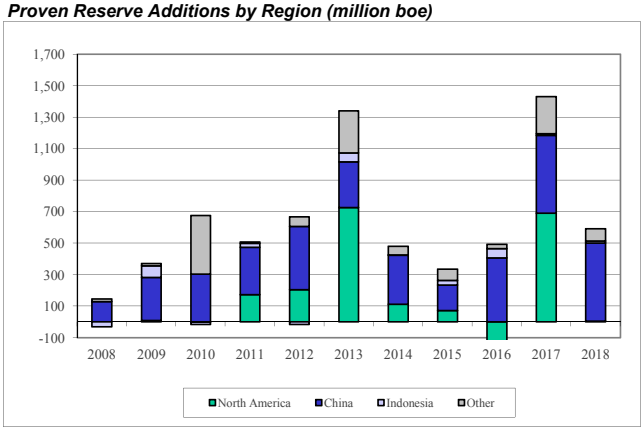
Proven Reserves vs RLI



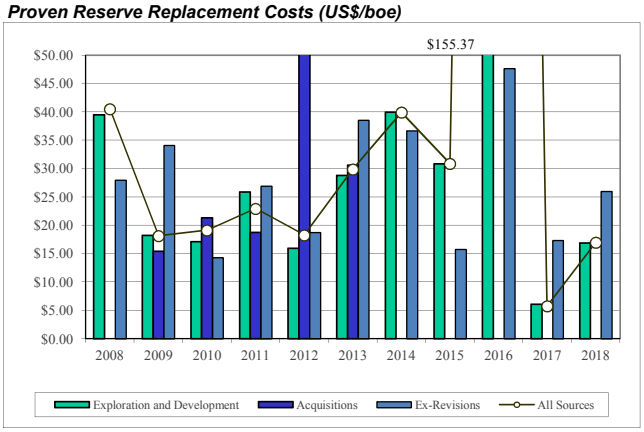
Capital Spending by Region (US$million)



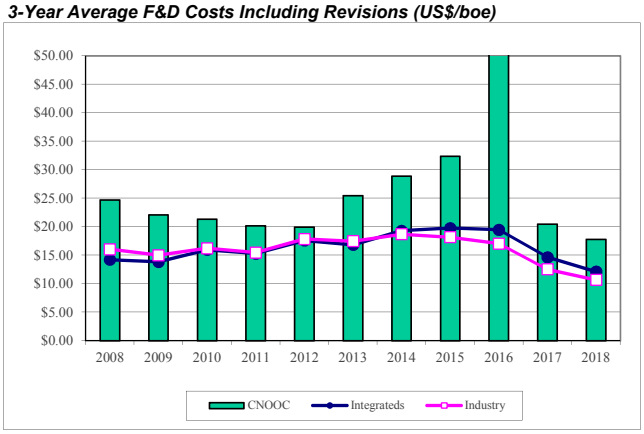
Proven Reserve Additions by Region (million boe)



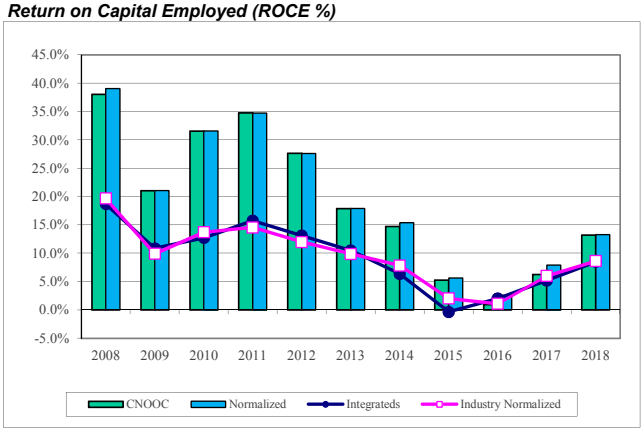
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

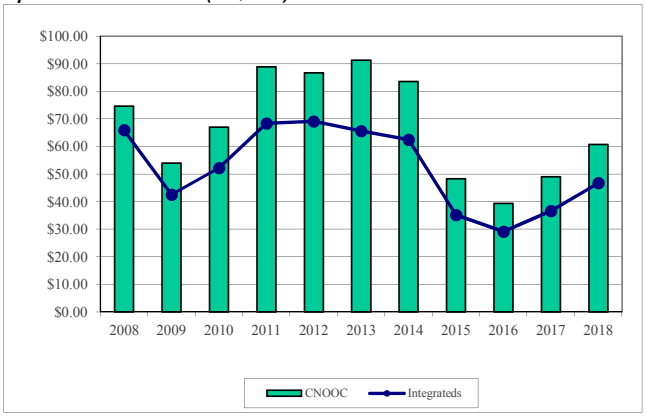
See pages F1 to F4 for analyst coverage.

CNOOC (CEO - NYSE)

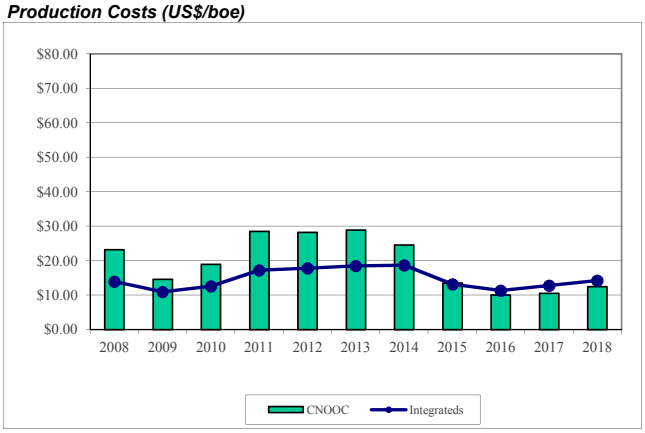
US$/boe, net

Worldwide

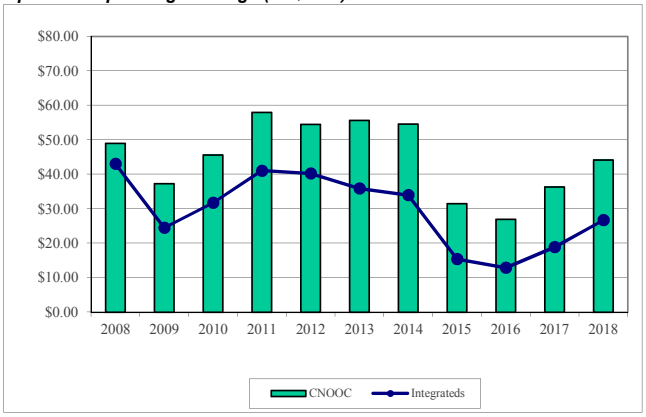
Upstream Net Revenue (US$/boe)



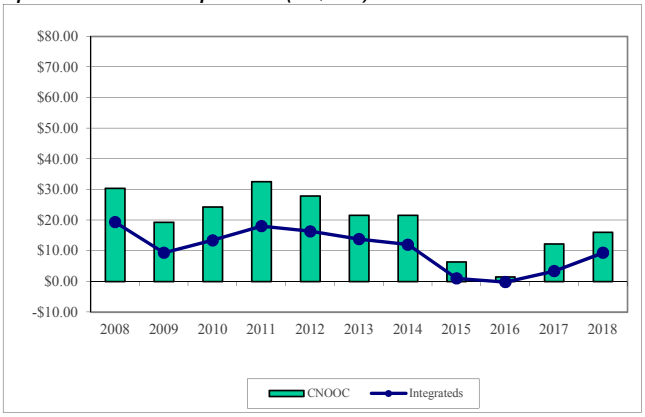
Production Costs (US$/boe)



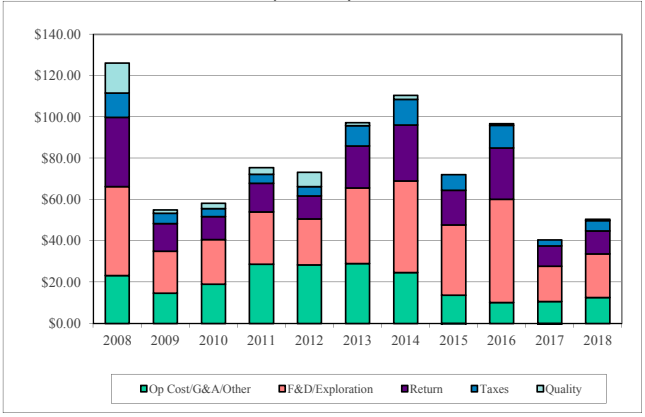
Upstream Operating Earnings (US$/boe)



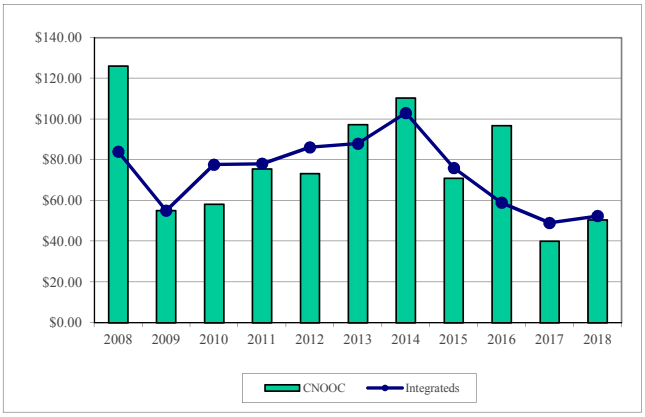
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



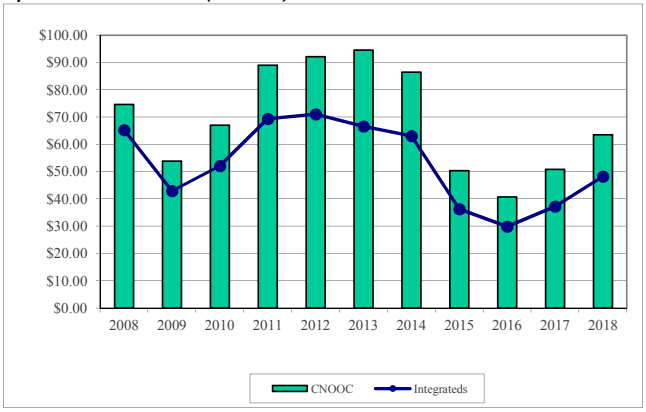
Source: BMO Capital Markets, Company Reports

CNOOC (CEO - NYSE)

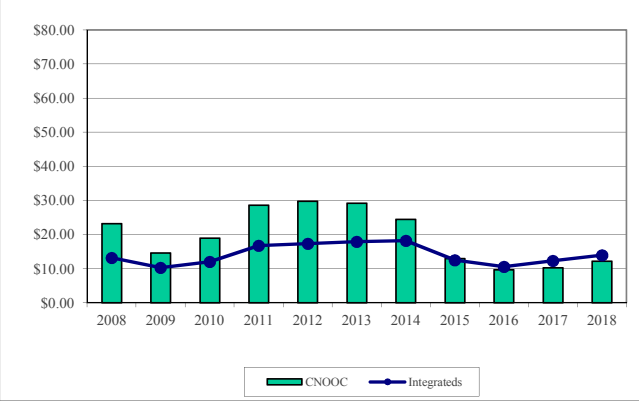
US$/boe, net

Total International

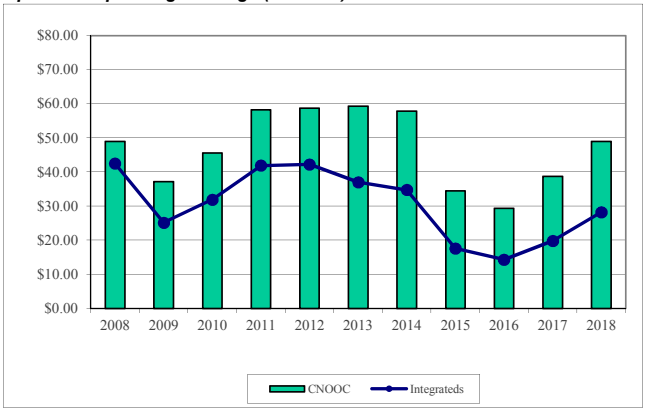
Upstream Net Revenue (US$/boe)



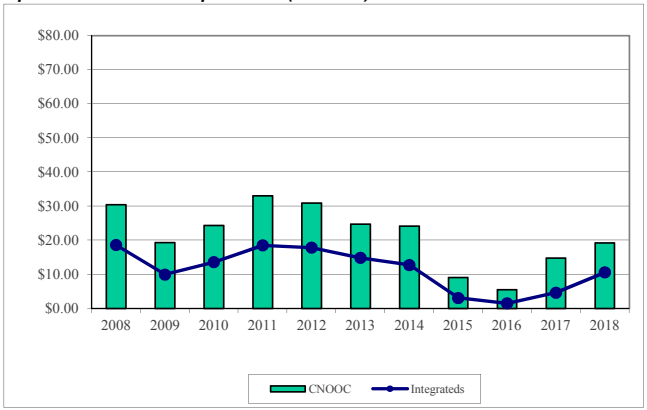
Production Costs (US$/boe)



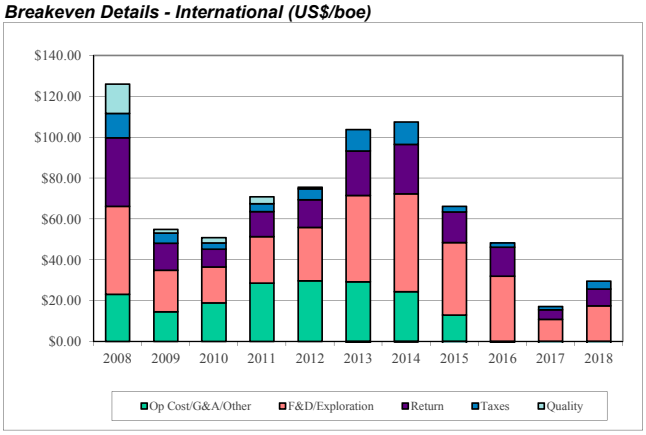
Upstream Operating Earnings (US$/boe)



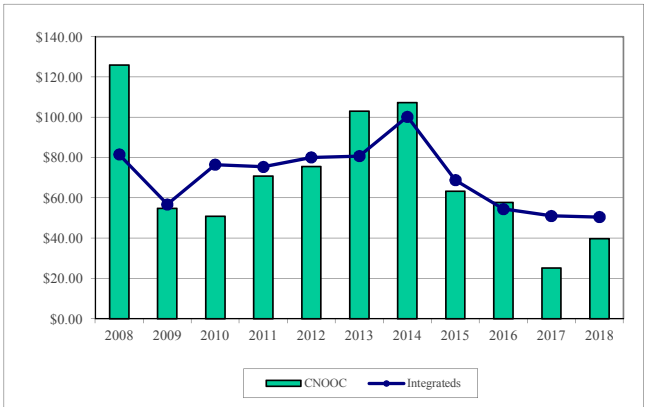
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



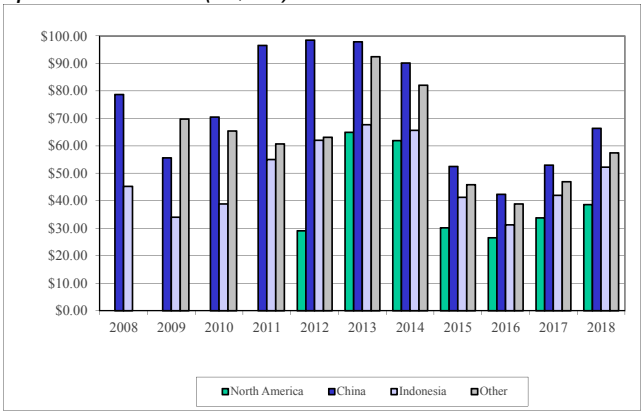
Source: BMO Capital Markets, Company Reports

CNOOC (CEO - NYSE)

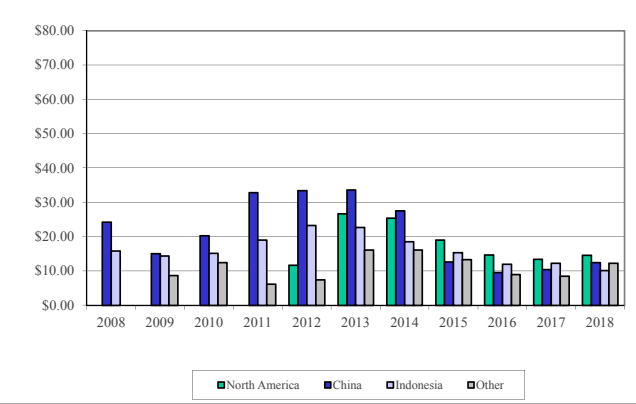
US$/boe, net

International Segments

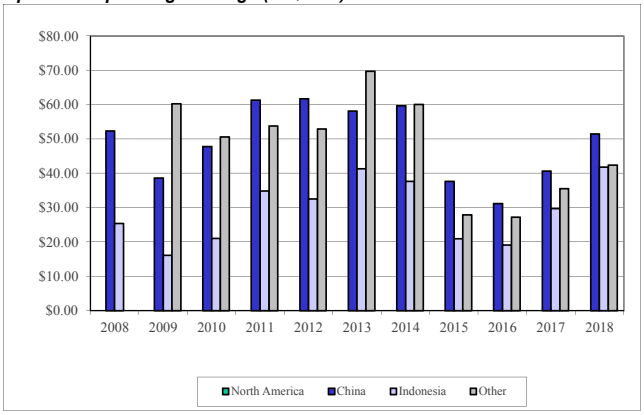
Upstream Net Revenue (US$/boe)



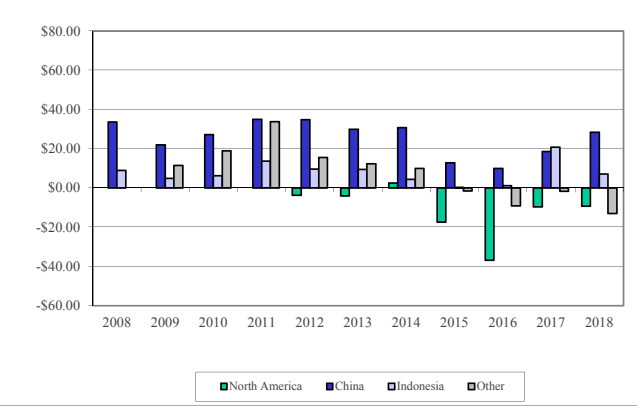
Production Costs (US$/boe)



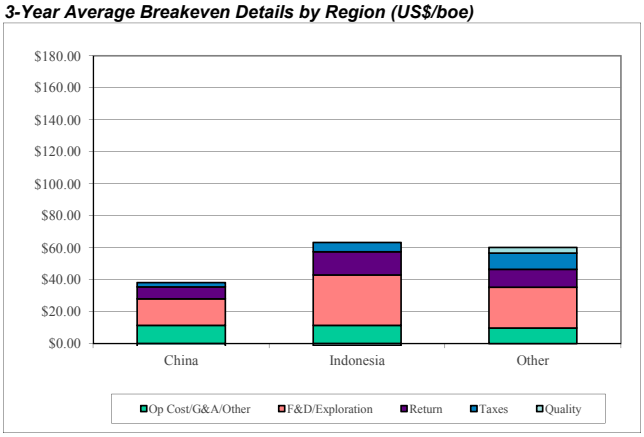
Upstream Operating Earnings (US$/boe)



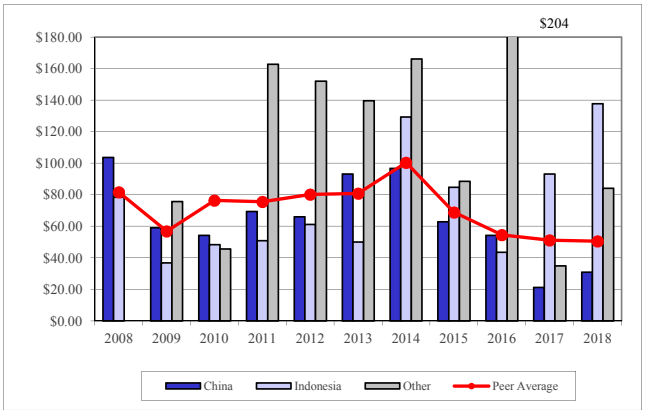
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

CNOOC (CEO - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	14,508	12,284	22,032	29,285	30,874	36,831	35,413	23,326	18,259	22,474	28,098
Midstream / Downstream Revenue	3,305	3,038	4,794	7,808	8,048	9,026	8,157	3,409	3,057	4,277	5,416
Other	314	77	220	185	330	637	1,000	544	731	828	795
Total Revenue and Other Income	18,126	15,399	27,046	37,278	39,252	46,495	44,570	27,278	22,047	27,579	34,310
Crude Oil and Product Purchases	3,263	2,994	4,763	7,783	8,010	8,683	7,776	3,157	2,862	4,090	5,073
Production and Transportation Expenses	2,141	2,362	3,606	4,424	5,877	7,474	6,982	6,228	4,538	4,660	5,046
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	491	473	824	808	1,433	2,785	1,870	1,575	1,108	1,018	1,954
General and Administrative	251	331	452	442	535	1,278	1,073	908	977	1,015	1,101
Depreciation, Depletion and Amortization	1,447	2,334	4,091	4,722	5,216	9,183	9,459	11,685	10,370	9,064	7,655
Interest, net	(97)	(15)	77	79	95	385	601	835	804	650	641
Other	2,135	968	2,524	4,734	3,738	3,564	2,750	(272)	349	352	1,390
Earnings Before Income Tax	8,274	5,950	10,705	14,283	14,343	13,150	13,391	2,726	(794)	5,379	11,365
Current Income Taxes	1,943	1,659	2,695	3,452	4,571	5,040	4,981	2,147	1,585	2,347	3,503
Future Income Taxes	-	-	-	-	(374)	(1,073)	(1,360)	(2,642)	(2,475)	(619)	(104)
Total Income Taxes	1,943	1,659	2,695	3,452	4,198	3,967	3,621	(496)	(890)	1,728	3,400
Minority Interest	54	25	29	38	(49)	-	-	-	-	-	-
Earnings From Continuing Operations	6,385	4,316	8,039	10,870	10,096	9,183	9,770	3,221	96	3,651	7,965
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	6,385	4,316	8,039	10,870	10,096	9,183	9,770	3,221	96	3,651	7,965
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	6,385	4,316	8,039	10,870	10,096	9,183	9,770	3,221	96	3,651	7,965

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	6,385	4,291	8,010	10,831	10,145	9,183	9,770	3,221	96	3,651	7,965
Charges and Credits Not Impacting Cash	(81)	2,215	3,459	5,448	6,275	10,894	9,995	10,630	9,009	10,811	8,739
Other	1,243	1,429	1,628	(1,368)	(864)	(2,620)	(1,756)	(1,029)	1,772	(619)	1,910
Cash Flow From Operations	7,547	7,935	13,097	14,911	15,557	17,458	18,008	12,822	10,877	13,843	18,614
Change in Working Capital / Other	473	(197)	(760)	3,062	(882)	579	(74)	(78)	89	174	114
Net Cash From Operating Activities	8,020	7,737	12,337	17,974	14,674	18,036	17,934	12,744	10,966	14,017	18,728
Total Capital Expenditures	(5,225)	(6,209)	(4,348)	(5,635)	(8,583)	(12,966)	(15,527)	(10,768)	(7,728)	(7,063)	(7,621)
Acquisitions, net	(36)	(145)	(1,653)	(2,454)	(1,361)	(1,065)	279	87	80	16	40
Other	(1,787)	420	(3,573)	(7,234)	(169)	(13,625)	613	(1,490)	3,441	(2,484)	(6,759)
Net Cash From Investing Activities	(7,048)	(5,934)	(9,574)	(15,323)	(10,113)	(27,656)	(14,635)	(12,171)	(4,207)	(9,530)	(14,340)
Net Change in Debt	655	704	1,912	395	3,179	6,938	786	2,993	(4,207)	(1,431)	197
Net Change in Common Stock	-	-	-	(40)	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(2,108)	(2,075)	(2,126)	(3,230)	(2,478)	(3,290)	(3,281)	(3,249)	(2,130)	(2,434)	(3,556)
Other	(4)	(5)	24	(258)	(291)	(623)	(668)	(841)	(171)	(763)	(778)
Net Cash From Financing Activities	(1,457)	(1,376)	(190)	(3,132)	410	3,025	(3,162)	(1,097)	(6,508)	(4,627)	(4,138)
Effect of Exchange Rate on Cash	(32)	(9)	(68)	(77)	(2)	(27)	(40)	39	30	(32)	31
Net Increase/(Decrease) in Cash	(517)	418	2,505	(558)	4,969	(6,621)	97	(485)	281	(172)	281
Cash and Equivalents, Beginning of Year	3,071	2,843	3,310	5,847	3,663	8,722	2,329	2,421	1,888	2,067	1,860
Cash and Equivalents, End of Year	2,843	3,310	5,847	3,663	8,722	2,329	2,421	1,888	2,067	1,860	2,182

Source: BMO Capital Markets, Company Reports

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Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	9,175	10,374	14,871	20,411	27,089	23,837	22,836	22,309	18,368	20,543	28,735
Net Property, Plant and Equipment	19,907	24,200	31,371	34,126	39,966	68,167	75,176	72,260	65,086	58,573	61,577
Other Assets	653	890	2,208	4,916	5,238	9,079	9,564	11,140	12,517	12,209	12,299
Total Assets	29,736	35,464	48,450	59,452	72,293	101,083	107,576	105,709	95,971	91,325	102,612
Total Current Liabilities	2,705	4,544	10,255	10,864	13,067	20,973	16,797	13,426	10,097	9,087	10,619
Long-term Debt	1,995	2,718	1,731	2,797	4,606	13,339	17,103	20,853	19,685	17,513	20,027
Deferred Income Taxes	781	1,089	1,939	849	539	4,125	3,276	1,850	853	489	480
Other Liabilities and Deferred Credits	1,200	1,651	2,646	4,275	4,976	7,080	8,793	8,155	7,789	8,015	8,392
Total Liabilities	6,681	10,003	16,571	18,784	23,189	45,518	45,969	44,285	38,424	35,103	39,518
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	6,062	6,167	6,224	6,518	6,678	6,853	6,992	6,855	6,484	6,374	6,513
Contributed Surplus (Paid-in Capital)	137	139	140	147	150	154	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	13,658	15,911	21,520	30,408	38,541	45,491	51,872	51,134	46,377	39,150	43,626
Other / Comprehensive Income (Loss)	3,199	3,244	3,994	3,595	3,734	3,066	2,743	3,435	4,686	10,697	12,955
Total Shareholders' Equity	23,055	25,461	31,879	40,668	49,104	55,564	61,607	61,424	57,547	56,222	63,093
Total Liabilities and Shareholders' Equity	29,736	35,464	48,450	59,452	72,293	101,083	107,576	105,709	95,971	91,325	102,612
Return on Capital Employed (ROCE)	**38.0%**	**21.0%**	**31.5%**	**34.7%**	**27.6%**	**17.9%**	**14.7%**	**5.2%**	**1.0%**	**6.2%**	**13.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	14,544	12,334	22,084	29,285	30,874	37,344	35,971	23,873	18,725	22,922	28,682	70,329	130,173
Production Costs	4,515	3,347	6,241	9,400	10,045	11,822	10,555	6,721	4,795	4,936	5,885	15,615	32,891
Exploration	491	477	837	808	1,433	2,793	1,916	1,597	1,144	1,021	1,967	4,132	7,645
DD&A	1,502	2,412	4,212	4,898	5,429	9,614	9,953	12,254	12,557	9,471	9,847	31,875	54,083
G&A/Other	0	0	0	0	2	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	8,037	6,098	10,795	14,180	13,965	13,115	13,547	3,301	229	7,494	10,983	18,706	35,554
Income Taxes	2,108	1,675	2,794	3,451	4,024	4,293	4,236	161	-495	1,767	3,392	4,663	9,060
Results Of Operations	5,929	4,423	8,000	10,729	9,941	8,822	9,310	3,140	724	5,728	7,591	14,043	26,493

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	-	19	22	204	872	2,870	3,119	1,498	1,163	1,632	2,005	4,799	9,416
Production Costs	-	4	5	55	350	1,178	1,279	944	641	647	755	2,044	4,267
Exploration	-	0	0	96	254	571	336	316	388	227	984	1,598	2,250
DD&A	-	4	3	88	370	1,359	1,309	1,668	2,605	1,472	1,010	5,087	8,063
G&A/Other	-	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	-	12	14	-36	-103	-238	194	-1,429	-2,471	-714	-745	-3,930	-5,165
Income Taxes	-	6	7	19	10	-58	68	-563	-850	-244	-263	-1,358	-1,853
Results Of Operations	-	6	7	-54	-113	-180	126	-866	-1,621	-469	-481	-2,572	-3,312

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	14,544	12,315	22,062	29,081	30,002	34,474	32,853	22,375	17,562	21,291	26,677	65,529	120,757
Production Costs	4,515	3,343	6,236	9,345	9,694	10,644	9,276	5,777	4,153	4,289	5,129	13,571	28,624
Exploration	491	477	837	712	1,179	2,221	1,580	1,282	756	795	983	2,534	5,395
DD&A	1,502	2,408	4,209	4,809	5,059	8,255	8,645	10,586	9,953	7,999	8,837	26,789	46,020
G&A/Other	0	0	0	0	2	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	8,037	6,086	10,781	14,215	14,067	13,354	13,352	4,730	2,700	8,208	11,728	22,636	40,718
Income Taxes	2,108	1,669	2,787	3,432	4,013	4,351	4,168	724	355	2,011	3,655	6,021	10,913
Results Of Operations	5,929	4,417	7,994	10,783	10,054	9,003	9,184	4,006	2,345	6,197	8,073	16,615	29,805

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

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Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$74.65	$54.02	$67.09	$88.97	$86.81	$91.34	$83.59	$48.29	$39.42	$49.08	$60.79	$49.74	$55.67
Production Costs	$23.17	$14.66	$18.96	$28.56	$28.24	$28.92	$24.53	$13.60	$10.09	$10.57	$12.47	$11.04	$14.07
Exploration	$2.52	$2.09	$2.54	$2.45	$4.03	$6.83	$4.45	$3.23	$2.41	$2.19	$4.17	$2.92	$3.27
DD&A	$7.71	$10.56	$12.80	$14.88	$15.26	$23.51	$23.13	$24.79	$26.44	$20.28	$20.87	$22.55	$23.13
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$41.25	$26.71	$32.79	$43.08	$39.26	$32.08	$31.48	$6.68	$0.48	$16.05	$23.28	$13.23	$15.20
Income Taxes	$10.82	$7.34	$8.49	$10.48	$11.31	$10.50	$9.84	$0.33	-$1.04	$3.78	$7.19	$3.30	$3.87
Results Of Operations	$30.43	$19.37	$24.31	$32.59	$27.95	$21.58	$21.64	$6.35	$1.52	$12.26	$16.09	$9.93	$11.33

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	nm	nm	nm	$29.07	$64.98	$61.96	$30.17	$26.53	$33.76	$38.68	$36.31	$32.52
Production Costs	na	nm	nm	nm	$11.68	$26.67	$25.41	$19.01	$14.63	$13.39	$14.57	$14.00	$15.43
Exploration	na	nm	nm	nm	$8.48	$12.94	$6.68	$6.35	$8.85	$4.69	$18.98	$12.09	$9.88
DD&A	na	nm	nm	nm	$12.34	$30.76	$26.00	$33.58	$59.43	$30.45	$19.49	$24.78	$34.88
G&A/Other	na	nm	nm	nm	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	na	nm	nm	nm	-$3.42	-$5.39	$3.86	-$28.78	-$56.38	-$14.77	-$14.37	-$14.56	-$27.67
Income Taxes	na	nm	nm	nm	$0.34	-$1.31	$1.35	-$11.33	-$19.39	-$5.06	-$5.08	-$5.07	-$9.92
Results Of Operations	na	nm	nm	nm	-$3.77	-$4.08	$2.51	-$17.44	-$36.99	-$9.71	-$9.28	-$9.49	-$17.75

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$74.65	$53.93	$67.02	$89.02	$92.12	$94.54	$86.45	$50.32	$40.73	$50.85	$63.52	$51.60	$57.65
Production Costs	$23.17	$14.64	$18.94	$28.61	$29.77	$29.19	$24.41	$12.99	$9.63	$10.24	$12.21	$10.69	$13.67
Exploration	$2.52	$2.09	$2.54	$2.18	$3.62	$6.09	$4.16	$2.88	$1.75	$1.90	$2.34	$2.00	$2.58
DD&A	$7.71	$10.55	$12.79	$14.72	$15.53	$22.64	$22.75	$23.81	$23.08	$19.11	$21.04	$21.10	$21.97
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$41.25	$26.66	$32.75	$43.52	$43.20	$36.62	$35.14	$10.64	$6.26	$19.61	$27.92	$17.83	$19.44
Income Taxes	$10.82	$7.31	$8.47	$10.51	$12.32	$11.93	$10.97	$1.63	$0.82	$4.80	$8.70	$4.74	$5.21
Results Of Operations	$30.43	$19.35	$24.28	$33.01	$30.87	$24.69	$24.17	$9.01	$5.44	$14.80	$19.22	$13.08	$14.23

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
China													
Net Revenue	$78.74	$55.67	$70.58	$96.67	$98.59	$97.93	$90.22	$52.47	$42.35	$52.95	$66.39	$59.74	$53.50
Production Costs	$24.20	$15.09	$20.24	$32.85	$33.38	$33.60	$27.56	$12.66	$9.53	$10.46	$12.48	$11.48	$11.30
Exploration	$2.19	$1.96	$2.54	$2.49	$3.53	$6.20	$2.99	$2.21	$1.70	$1.83	$2.48	$2.16	$2.06
DD&A	$7.72	$9.33	$11.61	$14.76	$15.36	$18.35	$18.67	$20.47	$17.92	$16.00	$13.69	$14.84	$17.07
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$44.64	$29.29	$36.18	$46.57	$46.31	$39.78	$41.00	$17.13	$13.20	$24.65	$37.74	$31.26	$23.08
Income Taxes	$11.11	$7.32	$9.04	$11.64	$11.58	$9.96	$10.25	$4.29	$3.30	$6.17	$9.44	$7.82	$5.77
Results Of Operations	$33.53	$21.97	$27.14	$34.93	$34.73	$29.83	$30.75	$12.84	$9.90	$18.49	$28.30	$23.44	$17.31

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Indonesia													
Net Revenue	$45.30	$34.09	$38.88	$55.11	$62.04	$67.75	$65.67	$41.24	$31.23	$42.03	$52.33	$42.31	$46.35
Production Costs	$15.83	$14.39	$15.17	$19.06	$23.30	$22.74	$18.51	$15.40	$11.94	$12.25	$10.10	$11.38	$13.40
Exploration	$4.14	$3.62	$2.66	$1.20	$6.16	$3.73	$9.56	$4.88	$0.19	$0.07	$0.47	$0.25	$2.78
DD&A	$7.63	$7.53	$8.88	$9.91	$11.85	$23.07	$24.68	$16.46	$17.60	$6.10	$29.06	$18.03	$18.95
G&A/Other	$0.00	$0.00	$0.00	$0.01	$0.09	$0.01	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$17.70	$8.56	$12.16	$24.93	$20.65	$18.21	$12.92	$4.50	$1.50	$23.61	$12.70	$12.65	$11.22
Income Taxes	$8.75	$3.78	$5.94	$11.34	$11.10	$8.79	$8.54	$4.29	$0.45	$2.80	$5.60	$3.06	$4.28
Results Of Operations	$8.95	$4.78	$6.22	$13.58	$9.55	$9.42	$4.37	$0.21	$1.05	$20.81	$7.10	$9.59	$6.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	na	$69.74	$65.43	$60.69	$63.12	$92.52	$82.14	$45.84	$38.82	$46.97	$57.50	$47.24	$53.77
Production Costs	na	$8.71	$12.45	$6.18	$7.43	$16.17	$16.13	$13.31	$9.02	$8.50	$12.28	$9.83	$11.84
Exploration	na	$0.75	$2.43	$0.75	$2.74	$6.59	$5.92	$4.60	$2.62	$2.98	$2.80	$2.80	$3.81
DD&A	na	$34.43	$25.28	$17.94	$18.95	$37.44	$35.77	$38.46	$44.47	$36.72	$48.16	$42.95	$40.55
G&A/Other	na	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	na	$25.85	$25.27	$35.82	$33.99	$32.32	$24.32	-$10.55	-$17.29	-$1.24	-$5.74	-$8.34	-$2.43
Income Taxes	na	$14.41	$6.39	$2.04	$18.46	$19.96	$14.39	-$8.91	-$8.16	$0.58	$7.29	-$0.51	$0.55
Results Of Operations	na	$11.44	$18.88	$33.77	$15.53	$12.36	$9.93	-$1.64	-$9.13	-$1.82	-$13.03	-$7.82	-$2.98

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

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Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	654.8	695.9	1,071.2	1,169.9	1,112.3	1,246.6	1,337.0	1,369.9	1,282.2	1,298.6	1,460.3	1,347.0	1,349.6
Liquids Production (b/d)	424,658	509,589	723,288	706,849	789,041	912,329	956,164	1,126,027	1,087,671	1,063,014	1,049,315	1,066,667	1,056,438
Total Production (boe/d)	533,790	625,571	901,826	901,826	974,429	1,120,091	1,178,995	1,354,338	1,301,370	1,279,452	1,292,694	1,291,172	1,281,370
% Gas Production	20%	19%	20%	22%	19%	19%	19%	17%	16%	17%	19%	17%	18%
% Oil Production	80%	81%	80%	78%	81%	81%	81%	83%	84%	83%	81%	83%	82%
Proven Reserves:													
Gas Reserves (bcf)	5,646.0	5,961.0	6,472.0	6,049.0	6,519.0	6,844.0	7,266.0	7,568.0	8,062.0	8,252.0	8,292.0	8,202.0	7,888.0
Oil Reserves (mmbbls)	1,580.0	1,670.0	1,916.0	2,165.0	2,383.0	3,260.0	3,240.0	3,030.0	2,509.0	3,445.0	3,557.9	3,170.6	3,156.4
Total Proven Reserves (mmboe)	2,521.0	2,663.5	2,994.7	3,173.2	3,469.5	4,400.7	4,451.0	4,291.3	3,852.7	4,820.3	4,939.9	4,537.6	4,471.0
% Gas Reserves	37%	37%	36%	32%	31%	26%	27%	29%	35%	29%	28%	30%	29%
% Oil Reserves	63%	63%	64%	68%	69%	74%	73%	71%	65%	71%	72%	70%	71%
Proven Reserve Life Index	12.9	11.7	9.1	9.6	9.8	10.8	10.3	8.7	8.1	10.3	10.5	9.6	9.6
Proven Reserve Additions:													
Gas Additions (bcf)	-338.0	569.0	902.0	4.0	876.0	780.0	910.0	802.0	962.0	663.0	573.0	2,198.0	3,910.0
Oil Additions (mmbbls)	171.0	276.0	510.0	507.0	506.0	1,210.0	328.0	201.0	-124.0	1,321.0	496.0	1,693.0	2,222.0
Total Additions (mmboe)	114.7	370.8	660.3	507.7	652.0	1,340.0	479.7	334.7	36.3	1,431.5	591.5	2,059.3	2,873.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	193.7	194.7	414.0	287.3	545.2	386.8	537.8	656.0	384.0	474.5	384.8	1,243.3	2,437.2
Acquisitions	0.0	9.7	315.0	208.8	11.0	822.5	0.0	0.0	0.2	75.5	0.0	75.7	75.7
Dispositions	(22.3)	(3.0)	0.0	0.0	0.0	0.0	-14.2	0.0	0.0	0.0	0.0	-	(14.2)
Revisions of Estimates	(56.7)	169.5	(68.7)	11.5	95.8	130.7	(44.0)	(321.3)	(347.8)	881.5	206.7	740.3	375.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	168.9%	52.5%	62.7%	56.6%	83.6%	28.9%	112.1%	196.0%	1056.9%	33.1%	65.1%	60.4%	84.8%
Acquisitions	0.0%	2.6%	47.7%	41.1%	1.7%	61.4%	0.0%	0.0%	0.5%	5.3%	0.0%	3.7%	2.6%
Dispositions	-19.5%	-0.8%	0.0%	0.0%	0.0%	0.0%	-3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.5%
Revisions of Estimates	-49.4%	45.7%	-10.4%	2.3%	14.7%	9.8%	-9.2%	-96.0%	-957.3%	61.6%	34.9%	36.0%	13.0%
Additions as % of Production:													
Gas	-141.4%	224.0%	230.7%	0.9%	215.8%	171.4%	186.5%	160.4%	205.6%	139.9%	107.5%	149.0%	158.7%
Oil	110.3%	148.4%	193.2%	196.5%	175.7%	363.4%	94.0%	48.9%	-31.2%	340.5%	129.5%	144.9%	115.2%
Total	58.9%	162.4%	200.6%	154.2%	183.3%	327.8%	111.5%	67.7%	7.6%	306.5%	125.4%	145.7%	122.9%
Additions as % of Reserves:													
Gas	-6.0%	9.5%	13.9%	0.1%	13.4%	11.4%	12.5%	10.6%	11.9%	8.0%	6.9%	26.8%	49.6%
Oil	10.8%	16.5%	26.6%	23.4%	21.2%	37.1%	10.1%	6.6%	-4.9%	38.3%	13.9%	53.4%	70.4%
Total	4.5%	13.9%	22.1%	16.0%	18.8%	30.4%	10.8%	7.8%	0.9%	29.7%	12.0%	45.4%	64.3%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$917.5	$1,069.9	$1,133.0	$1,505.9	$2,109.3	$3,049.5	$3,926.8	$2,430.1	$3,641.5	$1,571.8	$1,881.6	$7,094.9	$13,451.8
Development	$4,492.0	$5,564.4	$4,786.5	$6,232.0	$8,107.1	$11,862.1	$15,801.7	$7,898.7	$14,653.7	$6,657.3	$8,110.0	$29,421.0	$53,121.4
Acquisitions	$144.4	$148.8	$6,711.6	$3,920.2	$1,709.1	$25,158.5	$0.0	$0.0	$0.0	$0.0	$39.9	$39.9	$39.9
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$5,553.8	$6,783.1	$12,631.1	$11,658.1	$11,925.5	$40,070.1	$19,728.5	$10,328.8	$18,295.2	$8,229.1	$10,031.5	$36,555.8	$66,613.2
Expenditures as % of Total:													
Exploration	16.5%	15.8%	9.0%	12.9%	17.7%	7.6%	19.9%	23.5%	19.9%	19.1%	18.8%	19.4%	20.2%
Development	80.9%	82.0%	37.9%	53.5%	68.0%	29.6%	80.1%	76.5%	80.1%	80.9%	80.8%	80.5%	79.7%
Acquisitions	2.6%	2.2%	53.1%	33.6%	14.3%	62.8%	0.0%	0.0%	0.0%	0.0%	0.4%	0.1%	0.1%
Cashflow (US$million)	$7,921.5	$7,312.2	$13,048.9	$16,433.8	$16,803.6	$21,228.7	$21,179.5	$16,991.5	$14,425.1	$16,219.9	$19,405.4	$50,050.4	$88,221.4
Cashflow (US$/boe)	$40.66	$32.02	$39.64	$49.93	$47.25	$51.93	$49.22	$34.37	$30.37	$34.73	$41.13	$35.40	$37.73
Recycle Ratio	1.0x	1.8x	2.1x	2.2x	2.6x	1.7x	1.2x	1.1x	0.1x	6.0x	2.4x	2.0x	1.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$39.48	$18.22	$17.14	$25.89	$15.94	$28.81	$39.95	$30.86	$505.86	$6.07	$16.89	$18.41	$23.67
Acquisition Costs	na	$15.40	$21.31	$18.77	$155.37	$30.59	na	na	$0.00	$0.00	na	$0.53	$0.53
All Sources (incl. revisions)	$40.54	$18.14	$19.13	$22.96	$18.29	$29.90	$39.95	$30.86	$503.54	$5.75	$16.96	$17.75	$23.07
Exploration & Development (excl. revisions)	$27.93	$34.08	$14.30	$26.93	$18.74	$38.55	$36.68	$15.75	$47.64	$17.34	$25.96	$29.37	$27.32
Acquisition Costs	na	$15.40	$21.31	$18.77	$155.37	$30.59	na	na	$0.00	$0.00	na	$0.53	$0.53
All Sources (excl. revisions)	$28.68	$33.20	$17.33	$23.50	$21.44	$33.13	$36.68	$15.75	$47.62	$14.96	$26.07	$27.71	$26.51
Geographically Segmented Costs													
North America	na	$20.10	nm	$27.55	$9.10	$24.57	$28.78	$24.80	-$7.34	$2.36	$207.42	na	na
China	$31.05	$20.51	$17.33	$19.67	$17.47	$31.22	$37.60	$31.93	$26.80	$7.26	$11.22	$14.36	$19.76
Indonesia	-$71.67	$4.83	-$19.09	$15.34	-$31.68	$11.77	$555.20	$30.77	$17.60	$53.72	$75.67	$31.43	$40.54

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

CNOOC (CEO - NYSE)

Breakeven Analysis

Exhibit *7:* Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Operating Costs	23.17	14.66	18.96	28.56	28.24	28.92	24.53	13.60	10.09	10.57	10.57	11.04	14.07
Exploration Expense	2.52	2.09	2.54	2.45	4.03	6.83	4.45	3.23	2.41	2.19	2.19	2.92	3.27
G&A/Other	-	-	-	0.00	0.01	0.00	0.00	-	-	-	-	-	0.00
F&D Costs	40.54	18.14	19.13	22.96	18.29	29.90	39.95	30.86	47.62	14.96	14.96	26.51	30.07
Return on Capital	33.47	13.37	11.08	13.84	11.19	20.27	27.20	16.77	24.75	9.71	9.71	16.03	18.08
Income Taxes	11.90	5.06	3.87	4.45	4.53	9.86	12.38	7.51	11.09	3.00	3.00	6.38	7.57
Breakeven Oil Price	111.60	53.33	55.58	72.26	66.28	95.79	108.51	71.98	95.96	40.42	40.42	62.89	73.06
Quality Differential	14.45	1.63	2.56	3.22	6.87	1.37	1.85	(1.11)	0.81	(0.50)	(0.50)	0.35	0.36
Required WTI Price	126.05	54.96	58.14	75.48	73.15	97.16	110.35	70.87	96.77	39.93	39.93	63.24	73.42
	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D/Exploration	43.06	20.23	21.67	25.42	22.32	36.73	44.40	34.09	50.03	17.15	17.15	29.44	33.34
Op Cost/G&A/Other	23.17	14.66	18.96	28.56	28.25	28.92	24.53	13.60	10.09	10.57	10.57	11.04	14.07

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Operating Costs	-	-	-	-	11.68	26.67	25.41	19.01	14.63	13.39	13.39	14.00	15.43
Exploration Expense	-	-	-	-	8.48	12.94	6.68	6.35	8.85	4.69	4.69	12.09	9.88
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	-	-	-	-	9.10	24.57	28.78	24.80	60.25	7.39	7.39	29.88	28.64
Return on Capital	-	-	-	-	6.78	40.22	42.83	38.91	55.04	13.54	13.54	43.34	42.81
Income Taxes	-	-	-	-	(0.62)	12.92	23.06	25.28	28.86	7.05	7.05	23.01	23.75
Breakeven Oil Price	-	-	-	-	35.42	117.32	126.77	114.36	167.63	46.06	46.06	122.31	120.51
Quality Differential	-	-	-	-	73.15	18.01	16.41	13.76	11.23	13.20	13.20	15.73	15.47
Required WTI Price	-	-	-	-	108.57	135.33	143.17	128.12	178.86	59.25	59.25	138.04	135.98
	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D/Exploration	-	-	-	-	17.57	37.51	35.46	31.15	69.09	12.08	12.08	41.96	38.53
Op Cost/G&A/Other	-	-	-	-	11.68	26.67	25.41	19.01	14.63	13.39	13.39	14.00	15.43

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Operating Costs	23.17	14.64	18.94	28.61	29.77	29.19	24.41	12.99	9.63	10.24	10.24	10.69	13.67
Exploration Expense	2.52	2.09	2.54	2.18	3.62	6.09	4.16	2.88	1.75	1.90	1.90	2.00	2.58
G&A/Other	-	-	-	0.00	0.01	0.00	0.00	-	-	-	-	-	0.00
F&D Costs	40.54	18.09	15.05	20.60	22.52	36.21	43.76	32.55	30.28	8.91	8.91	16.68	22.45
Return on Capital	33.47	13.29	8.66	12.17	13.48	21.78	24.15	15.02	14.17	4.74	4.74	8.65	11.89
Income Taxes	11.90	5.02	3.02	3.87	5.38	10.53	10.96	2.71	2.14	1.54	1.54	2.58	3.57
Breakeven Oil Price	111.60	53.14	48.22	67.43	74.78	103.80	107.43	66.17	57.97	27.33	27.33	40.59	54.15
Quality Differential	14.45	1.72	2.63	3.42	0.76	(0.64)	(0.08)	(2.77)	(0.25)	(2.08)	(2.08)	(1.44)	(1.43)
Required WTI Price	126.05	54.85	50.85	70.85	75.54	103.16	107.35	63.40	57.72	25.25	25.25	39.15	52.71
	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D/Exploration	43.06	20.18	17.60	22.78	26.14	42.30	47.92	35.44	32.03	10.80	10.80	18.68	25.02
Op Cost/G&A/Other	23.17	14.64	18.94	28.61	29.77	29.19	24.41	12.99	9.63	10.24	10.24	10.69	13.67

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
China													
Operating Costs	20.36	16.30	12.34	12.18	12.17	17.27	18.77	17.57	20.53	20.21	17.48	16.03	18.08
Exploration Expense	7.24	6.17	4.31	3.92	4.92	8.41	8.54	7.87	9.20	6.24	7.81	6.38	7.57
G&A/Other	77.97	61.28	59.47	67.26	69.27	86.89	85.14	74.61	81.70	70.36	68.44	62.89	73.06
F&D Costs	126.05	54.96	58.14	75.48	73.15	97.16	110.35	70.87	96.77	39.93	50.49	63.24	73.42
Return on Capital	12.94	11.66	9.10	9.64	9.75	10.76	10.34	8.68	8.11	10.32	10.47	9.63	9.59
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	244.57	150.38	143.36	168.47	169.26	220.50	233.15	179.62	216.31	147.06	154.68	158.18	181.73
Quality Differential	-	-	-	-	-	-	-	-	-	-	-	-	-
Required WTI Price	244.57	150.38	143.36	168.47	169.26	220.50	233.15	179.62	216.31	147.06	154.68	158.18	181.73
	244.57	150.38	143.36	168.47	169.26	220.50	233.15	179.62	216.31	147.06	154.68	158.18	181.73
F&D/Exploration	133.29	61.14	62.45	79.40	78.07	105.57	118.90	78.75	105.96	46.16	58.30	69.62	80.99
Op Cost/G&A/Other	98.34	77.57	71.81	79.43	81.43	104.17	103.92	92.19	102.23	90.57	85.92	78.92	91.15

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Indonesia													
Operating Costs	-	-	-	-	24.68	22.16	22.06	25.16	37.94	30.81	29.88	29.88	28.64
Exploration Expense	-	-	-	-	18.45	36.30	32.90	39.47	34.81	56.36	48.81	43.34	42.81
G&A/Other	-	-	-	-	(1.68)	11.66	17.71	25.65	18.25	29.35	26.73	23.01	23.75
F&D Costs	-	-	-	-	73.15	18.01	16.41	13.76	11.23	13.20	22.76	15.73	15.47
Return on Capital	-	-	-	-	108.57	135.33	143.17	128.12	178.86	59.25	134.10	138.04	135.98
Income Taxes	-	-	-	-	11.80	23.45	21.79	22.56	14.13	26.10	23.45	21.23	21.61
Breakeven Oil Price	-	-	-	-	234.96	246.92	254.05	254.71	295.21	215.07	285.72	271.22	268.25
Quality Differential	-	-	-	-	-	-	-	-	-	-	-	-	-
Required WTI Price	-	-	-	-	234.96	246.92	254.05	254.71	295.21	215.07	285.72	271.22	268.25

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

CNOOC (CEO - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.50	21.78	33.81	32.49	33.01	27.65	14.20	10.45	10.45	11.20	13.56	11.71	15.03
Exploration Expense	2.35	2.92	2.90	4.64	7.80	5.02	3.37	2.49	2.49	2.32	4.53	3.10	3.49
G&A/Other	-	-	0.00	0.01	0.00	0.00	-	-	-	-	-	-	0.00
F&D Costs (1-Year)	21.42	22.48	22.99	21.61	31.98	49.60	34.32	52.41	52.41	15.79	18.22	28.81	25.17
Return on Capital	13.99	11.20	12.65	11.90	20.87	30.13	18.03	25.51	25.51	9.80	11.49	17.38	14.80
Income Taxes	5.30	3.91	4.07	4.82	10.15	13.71	8.08	11.43	11.43	3.02	5.13	6.92	6.20
Breakeven Oil Price	**59.57**	**62.29**	**76.42**	**75.46**	**103.81**	**126.11**	**78.01**	**102.30**	**102.30**	**42.13**	**52.93**	**67.92**	**64.70**
Quality Differential	1.84	2.94	3.81	7.90	1.57	2.08	(1.16)	0.84	0.84	(0.53)	0.79	0.37	0.41
Required WTI Price	**61.41**	**65.24**	**80.24**	**83.36**	**105.37**	**128.19**	**76.85**	**103.13**	**103.13**	**41.60**	**53.73**	**68.29**	**65.10**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	27.32	16.50	21.78	33.81	32.49	33.01	27.65	14.20	10.45	11.20	13.56	11.71	15.03
Exploration Expense	2.97	2.35	2.92	2.90	4.64	7.80	5.02	3.37	2.49	2.32	4.53	3.10	3.49
G&A/Other	-	-	-	0.00	0.01	0.00	0.00	-	-	-	-	-	0.00
F&D Costs (1-Year)	28.95	16.39	26.43	53.41	38.96	59.90	40.16	21.63	77.67	36.39	21.32	45.13	39.43
Return on Capital	20.12	10.48	13.17	29.25	21.46	38.21	24.58	11.36	37.84	22.56	13.38	26.08	22.64
Income Taxes	7.15	3.97	4.60	9.41	8.69	18.59	11.18	5.09	16.95	6.96	5.98	10.38	9.48
Breakeven Oil Price	**86.51**	**49.69**	**68.89**	**128.79**	**106.24**	**157.51**	**108.59**	**55.65**	**145.41**	**79.43**	**58.78**	**96.39**	**90.08**
Quality Differential	17.04	1.84	2.94	3.81	7.90	1.57	2.08	(1.16)	0.84	(0.53)	0.79	0.37	0.41
Required Brent Price	**103.55**	**51.53**	**71.84**	**132.60**	**114.13**	**159.08**	**110.67**	**54.49**	**146.25**	**78.91**	**59.57**	**96.76**	**90.48**

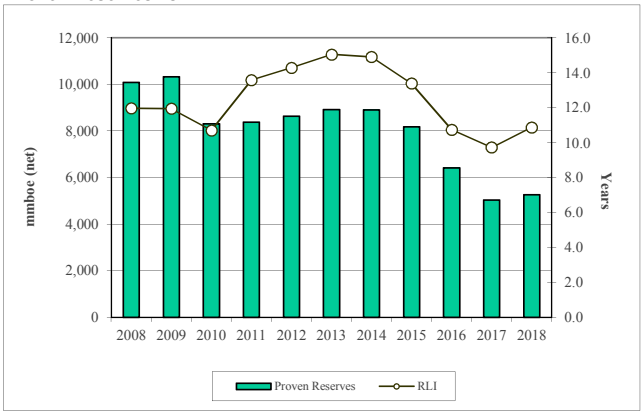
Source: BMO Capital Markets, Company Reports

ConocoPhillips (COP - NYSE) US$, net

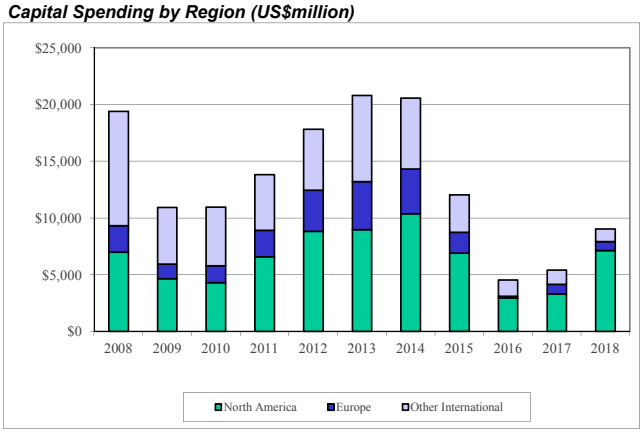
- ConocoPhillips yielded results from operations of $13.72/boe in 2018 versus $0.56/boe in 2017.
- The company's F&D costs (ex-revisions) came in slightly higher at $11.81/boe compared to $9.67/boe last year. On a realized oil:gas price ratio basis, F&D costs drifted higher to $13.55/boe from $10.81/boe, and costs for PD reserves also increased to $12.88/boe from $7.98/boe a year ago.
- ConocoPhillips reduced its required Brent oil price to $47.12/boe from $50.16/boe last year on a realized ratio basis on total proved reserves. The company's PD costs imply a Brent breakeven oil price of $45.58/boe versus $44.64/boe in 2017.
- The company reported ROCE of 16.5% in 2018 relative to a normalized ROCE of 5.5% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

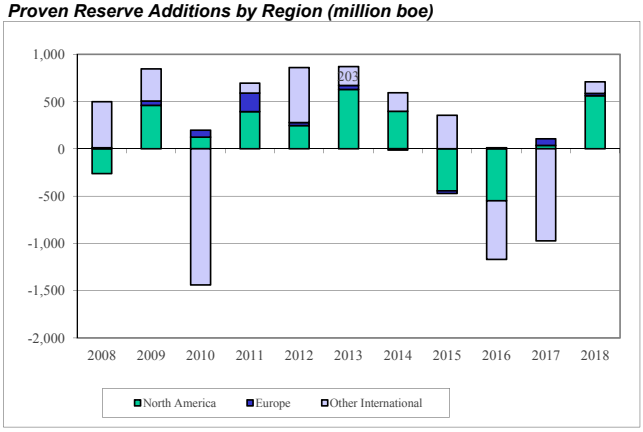
Proven Reserves vs RLI



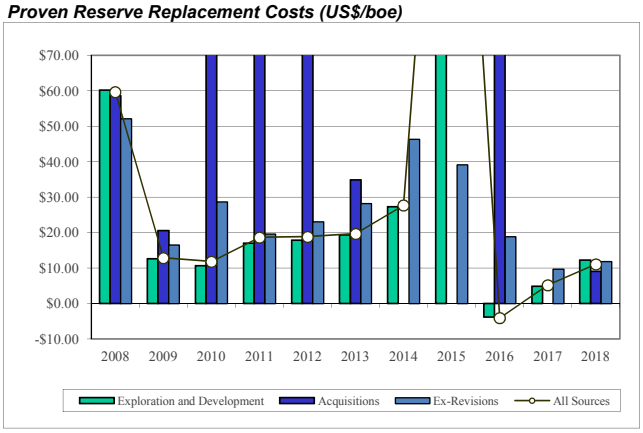
Capital Spending by Region (US$million)



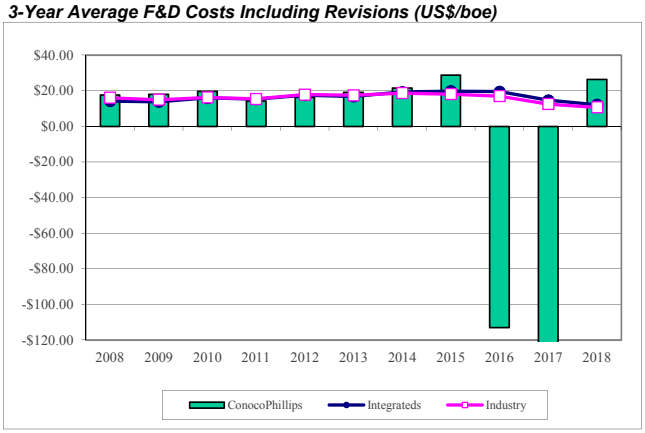
Proven Reserve Additions by Region (million boe)



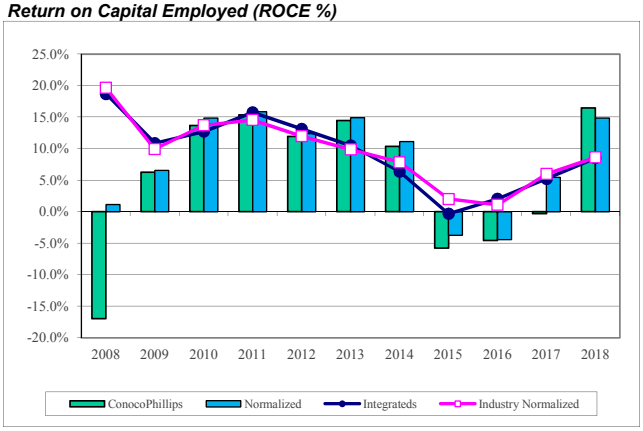
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

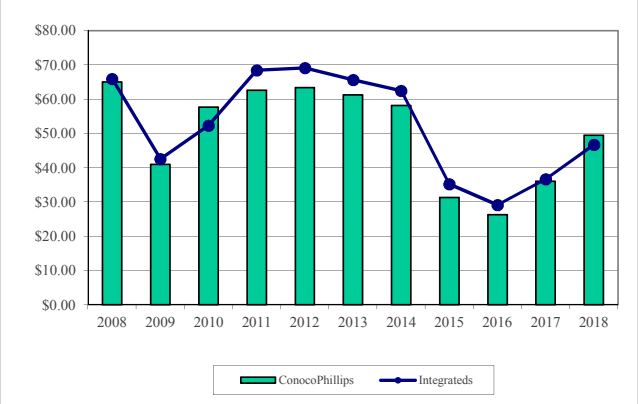
See pages F1 to F4 for analyst coverage.

ConocoPhillips (COP - NYSE)

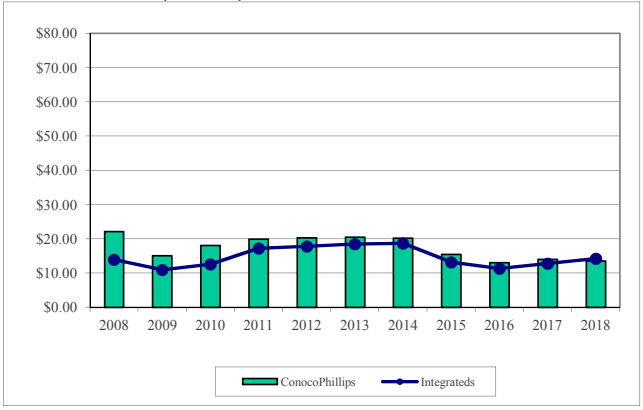
US$/boe, net

Worldwide

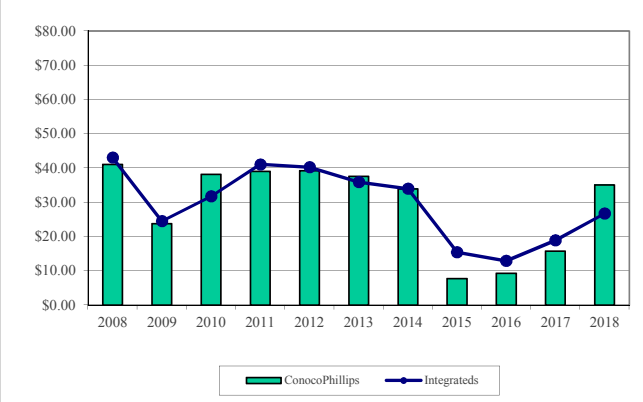
Upstream Net Revenue (US$/boe)



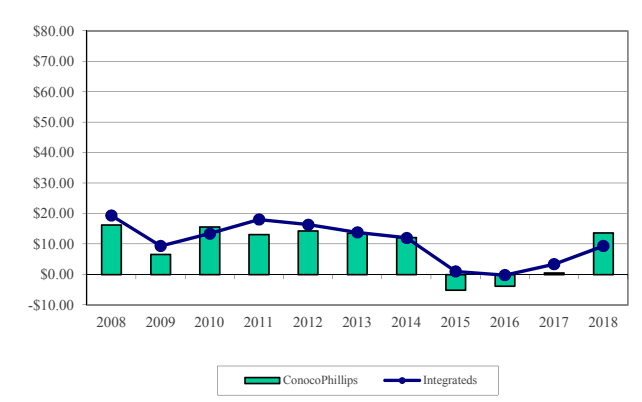
Production Costs (US$/boe)



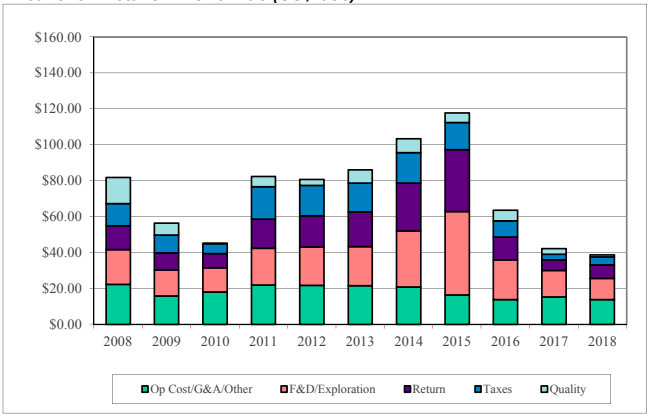
Upstream Operating Earnings (US$/boe)



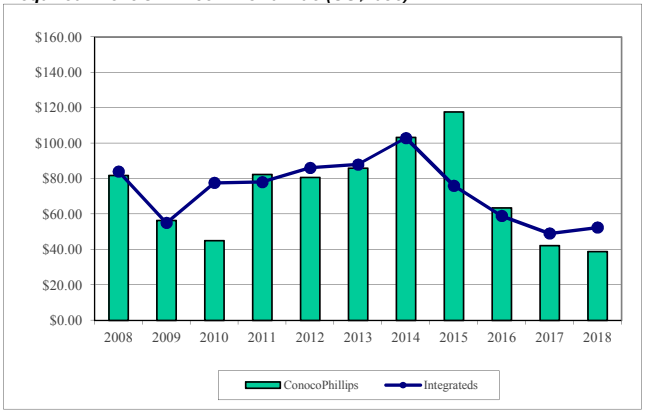
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



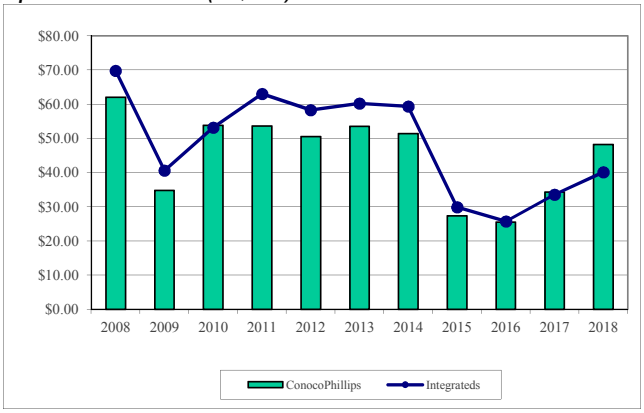
Source: BMO Capital Markets, Company Reports

ConocoPhillips (COP - NYSE)

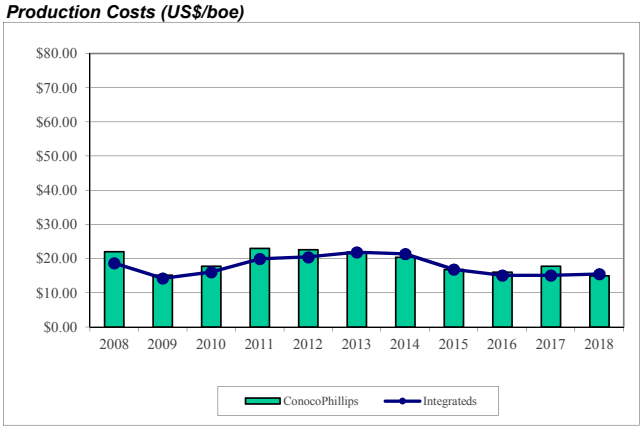
US$/boe, net

North America

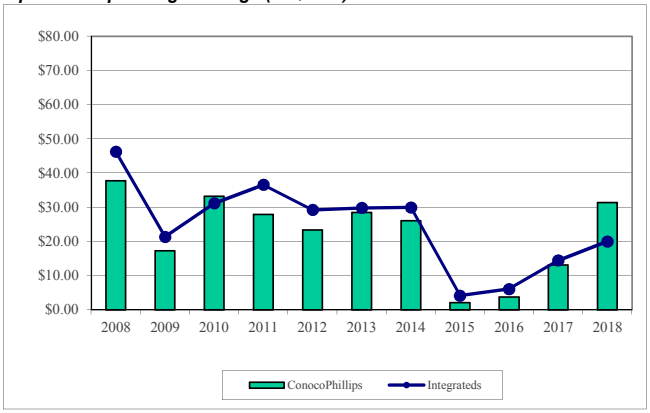
Upstream Net Revenue (US$/boe)



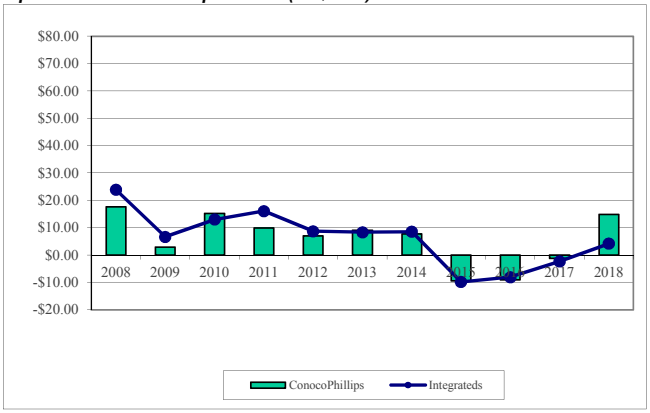
Production Costs (US$/boe)



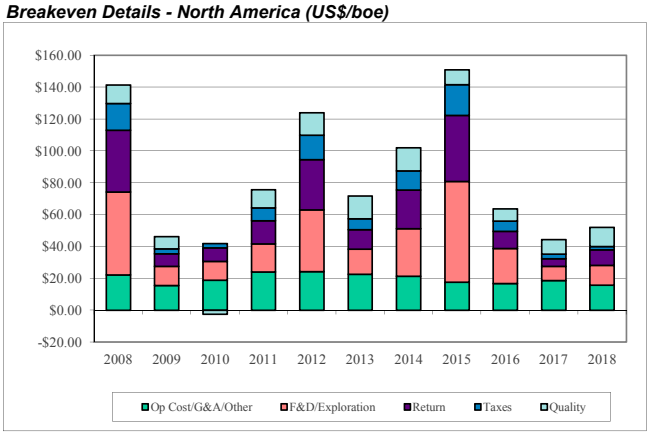
Upstream Operating Earnings (US$/boe)



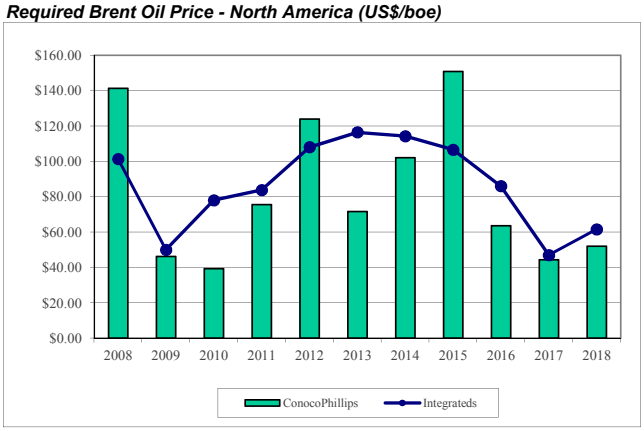
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



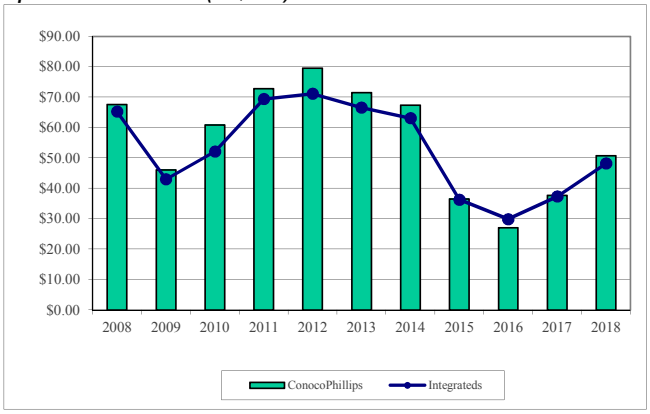
Source: BMO Capital Markets, Company Reports

ConocoPhillips (COP - NYSE)

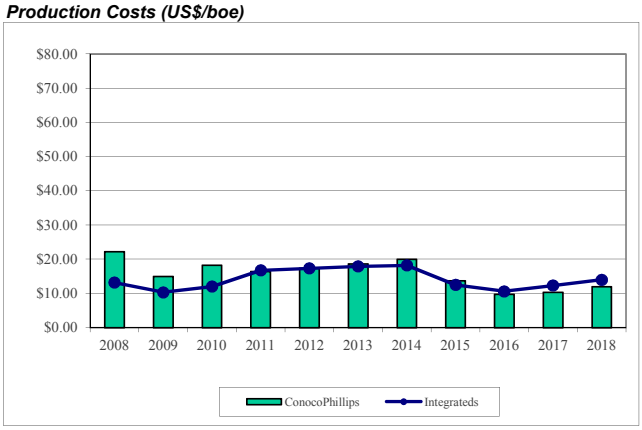
US$/boe, net

Total International

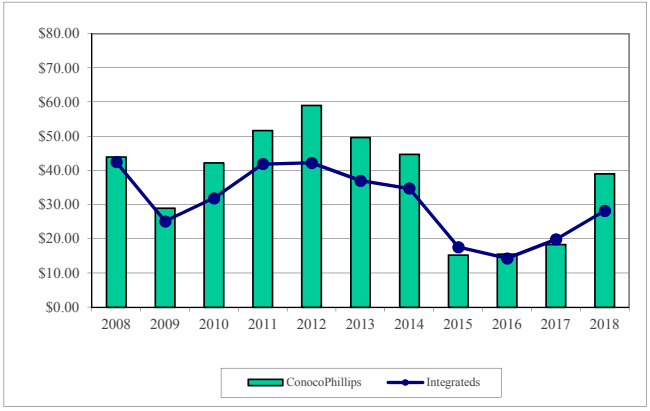
Upstream Net Revenue (US$/boe)



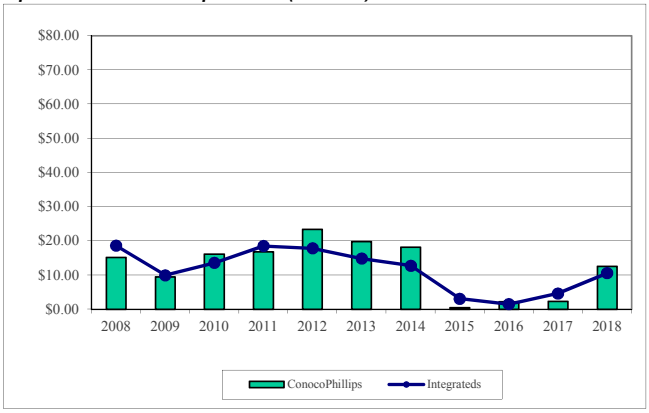
Production Costs (US$/boe)



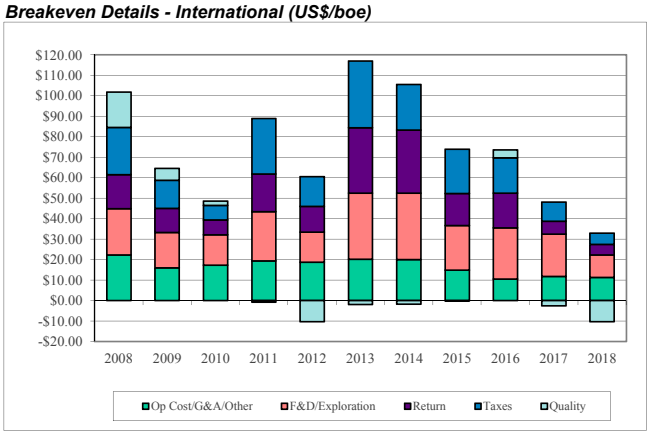
Upstream Operating Earnings (US$/boe)



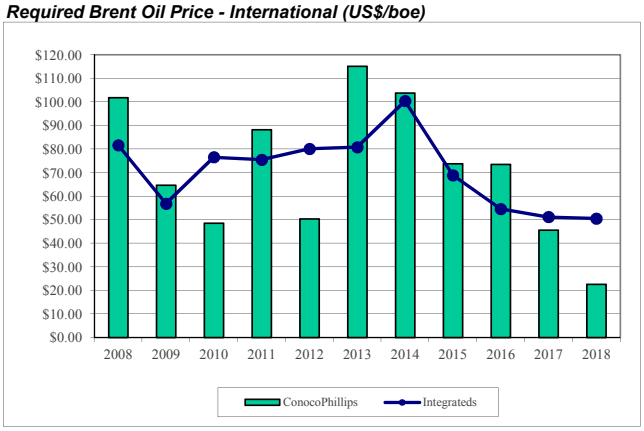
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



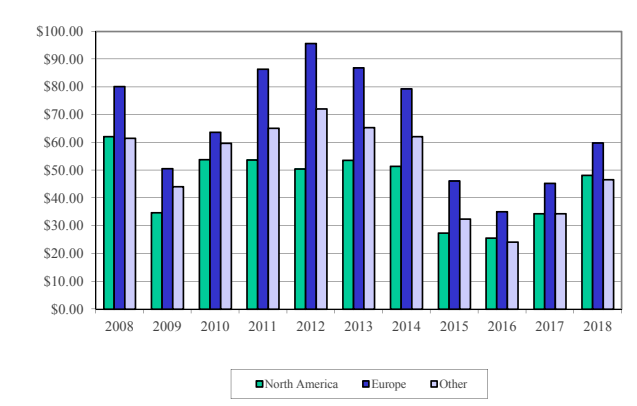
Source: BMO Capital Markets, Company Reports

ConocoPhillips (COP - NYSE)

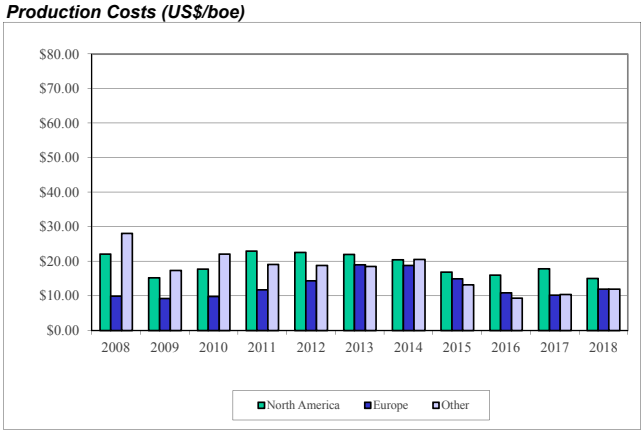
US$/boe, net

International Segments

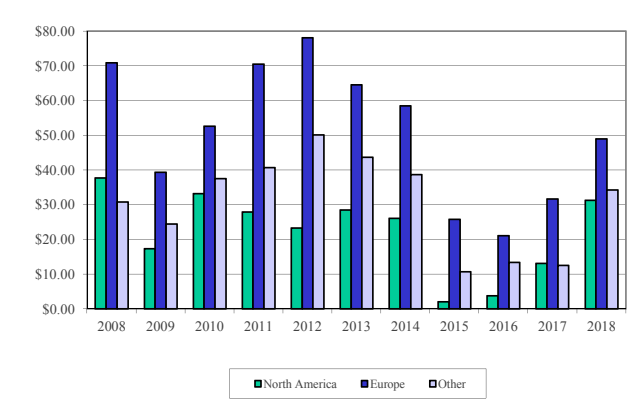
Upstream Net Revenue (US$/boe)



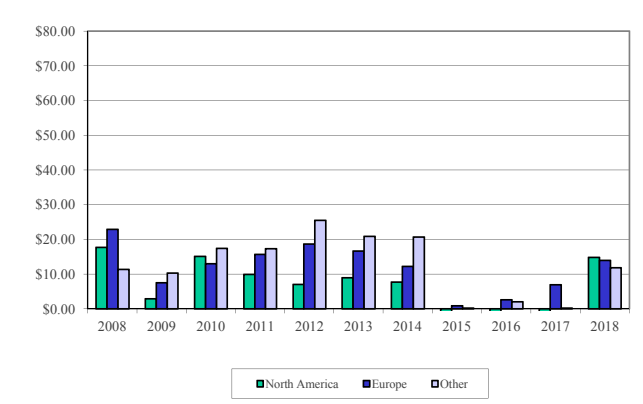
Production Costs (US$/boe)



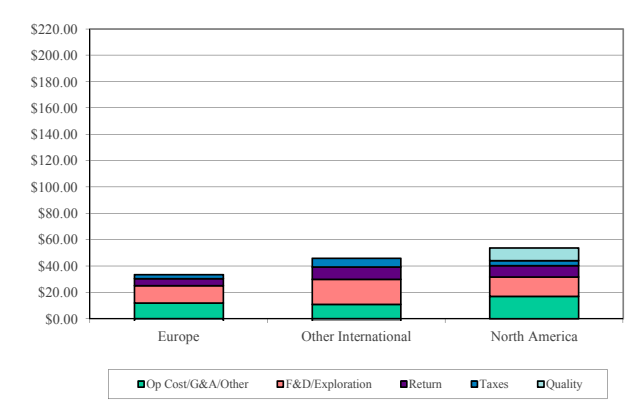
Upstream Operating Earnings (US$/boe)



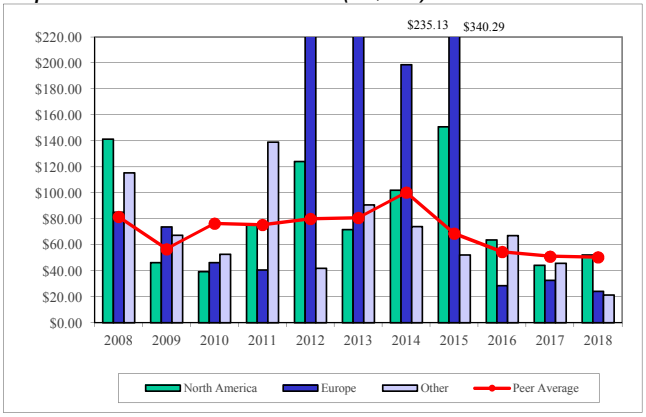
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

ConocoPhillips (COP - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	69,818	37,097	43,525	49,453	57,967	54,413	52,524	29,564	23,693	29,106	36,417
Midstream / Downstream Revenue	171,024	112,244	145,916	195,360	-	-	-	-	-	-	-
Other	5,340	3,499	9,214	6,413	4,037	3,835	2,993	1,371	667	3,478	2,310
Total Revenue and Other Income	246,182	152,840	198,655	251,226	62,004	58,248	55,517	30,935	24,360	32,584	38,727
Costs and Expenses:											
Crude Oil and Product Purchases	168,663	102,433	135,751	185,867	25,232	22,643	22,099	12,426	9,994	12,475	14,294
Production and Transportation Expenses	11,818	10,339	10,635	10,770	6,793	7,238	8,909	7,016	5,667	5,173	5,213
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,337	1,182	1,155	1,066	1,500	1,232	2,045	4,192	1,915	938	369
General and Administrative	2,229	1,830	2,005	2,078	1,106	854	735	953	723	561	401
Depreciation, Depletion and Amortization	9,012	9,295	9,060	7,934	6,580	7,434	8,329	9,113	9,062	6,845	5,956
Interest, net	935	1,289	1,187	972	709	612	648	920	1,245	1,098	735
Other	55,781	16,440	19,112	19,538	4,661	3,789	3,362	3,554	1,284	8,109	1,786
Earnings Before Income Tax	(3,593)	10,032	19,750	23,001	15,423	14,446	9,390	(7,239)	(5,530)	(2,615)	9,973
Income Taxes:											
Current Income Taxes	13,833	6,205	9,211	9,212	6,549	5,193	3,080	35	249	1,859	3,385
Future Income Taxes	(428)	(1,109)	(878)	1,287	1,393	1,216	503	(2,903)	(2,220)	(3,681)	283
Total Income Taxes	13,405	5,096	8,333	10,499	7,942	6,409	3,583	(2,868)	(1,971)	(1,822)	3,668
Minority Interest	-	(78)	(59)	(66)	(70)	(59)	(69)	(57)	(56)	(62)	(48)
Earnings From Continuing Operations	(16,998)	4,858	11,358	12,436	7,411	7,978	5,738	(4,428)	(3,615)	(855)	6,257
Discontinued Operations/Extraordinary Items	-	-	-	-	1,017	1,178	1,131	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(16,998)	4,858	11,358	12,436	8,428	9,156	6,869	(4,428)	(3,615)	(855)	6,257
Preferred Stock Dividends	-	-	-								
Net Earnings to Common Shareholders	(16,998)	4,858	11,358	12,436	8,428	9,156	6,869	(4,428)	(3,615)	(855)	6,257

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	(16,998)	4,936	11,417	12,502	8,498	9,215	6,938	(4,371)	(3,559)	(793)	6,305
Charges and Credits Not Impacting Cash	43,821	9,327	10,439	10,483	9,531	9,717	11,060	11,651	8,164	10,331	6,361
Other	(3,146)	(1,246)	(6,678)	(2,988)	(3,332)	(3,179)	(901)	314	279	(2,476)	(367)
Cash Flow From Operations	23,677	13,017	15,178	19,997	14,697	15,753	17,097	7,594	4,884	7,062	12,299
Change in Working Capital / Other	(1,019)	(538)	1,867	(351)	(775)	334	(362)	(22)	(481)	15	635
Net Cash From Operating Activities	22,658	12,479	17,045	19,646	13,922	16,087	16,735	7,572	4,403	7,077	12,934
Total Capital Expenditures	(19,099)	(10,861)	(9,761)	(13,266)	(14,172)	(15,537)	(17,085)	(10,050)	(4,869)	(4,591)	(6,750)
Acquisitions, net	1,640	1,270	15,372	4,820	2,132	10,220	1,603	1,952	1,286	13,860	1,082
Other	(157)	(344)	(946)	1,431	413	(934)	351	(557)	(276)	(1,507)	1,825
Net Cash From Investing Activities	(17,616)	(9,935)	4,665	(7,015)	(11,627)	(6,251)	(15,131)	(8,655)	(3,859)	7,762	(3,843)
Financing Activities:											
Net Change in Debt	5,760	1,229	(5,202)	(961)	(569)	(946)	980	2,395	2,343	(7,876)	(4,995)
Net Change in Common Stock	(8,051)	13	(3,733)	(11,027)	(4,960)	20	35	(82)	(189)	(3,063)	(2,878)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(2,854)	(2,832)	(3,175)	(3,632)	(3,278)	(3,324)	(3,525)	(3,664)	(1,253)	(1,305)	(1,363)
Other	(619)	(1,265)	(709)	(685)	4,326	(2,883)	(64)	(78)	(137)	(112)	(123)
Net Cash From Financing Activities	(5,764)	(2,855)	(12,819)	(16,305)	(4,481)	(7,133)	(2,574)	(1,429)	764	(12,356)	(9,359)
Effect of Exchange Rate on Cash	21	98	21	-	24	(75)	(214)	(182)	(66)	(117)	(117)
Net Increase/(Decrease) in Cash	(701)	(213)	8,912	(3,674)	(2,162)	2,628	(1,184)	(2,694)	1,242	2,366	(385)
Cash and Equivalents, Beginning of Year	1,456	755	542	9,454	5,780	3,618	6,246	5,062	2,368	3,610	6,536
Cash and Equivalents, End of Year	755	542	9,454	5,780	3,618	6,246	5,062	2,368	3,610	5,976	6,151

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

ConocoPhillips (COP - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	20,843	21,167	34,660	30,218	23,989	19,023	15,068	8,789	8,609	16,512	13,274
Net Property, Plant and Equipment	83,947	87,708	82,554	84,180	67,263	72,827	75,444	66,446	58,331	45,683	45,698
Other Assets	38,075	43,713	39,100	38,832	25,892	26,207	26,027	22,249	22,832	11,167	11,008
Total Assets	142,865	152,588	156,314	153,230	117,144	118,057	116,539	97,484	89,772	73,362	69,980
Liabilities and Stockholders' Equity											
Total Current Liabilities	21,780	23,695	27,419	28,068	17,443	15,129	11,537	9,256	6,909	9,397	7,395
Long-term Debt	27,085	26,925	22,656	21,610	20,770	21,073	22,383	23,453	26,186	17,128	14,856
Deferred Income Taxes	18,167	17,962	17,335	18,055	13,185	15,220	15,070	10,999	8,949	5,282	5,021
Other Liabilities and Deferred Credits	19,568	20,949	19,795	19,763	17,319	14,143	15,276	13,694	12,502	10,754	10,644
Total Liabilities	86,600	89,531	87,205	87,496	68,717	65,565	64,266	57,402	54,546	42,561	37,916
Minority Interests	1,100	590	547	510	440	402	362	320	252	194	125
Stockholders' Equity											
Common Shares	17	17	17	17	18	18	18	18	18	18	18
Contributed Surplus (Paid-in Capital)	43,396	43,681	44,132	44,725	45,324	45,690	46,071	46,357	46,507	46,622	46,879
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	30,642	32,658	40,397	49,194	35,338	41,160	44,504	36,414	31,548	29,391	34,010
Other / Comprehensive Income (Loss)	(18,890)	(13,889)	(15,984)	(28,712)	(32,693)	(34,778)	(38,682)	(43,027)	(43,099)	(45,424)	(48,968)
Total Shareholders' Equity	55,165	62,467	68,562	65,224	47,987	52,090	51,911	39,762	34,974	30,607	31,939
Total Liabilities and Shareholders' Equity	142,865	152,588	156,314	153,230	117,144	118,057	116,539	97,484	89,772	73,362	69,980
Return on Capital Emplyed (ROCE)	**-17.0%**	**6.3%**	**13.7%**	**15.4%**	**11.9%**	**14.4%**	**10.4%**	**-5.8%**	**-4.6%**	**-0.3%**	**16.5%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	54,869	35,447	44,785	38,639	38,390	36,303	34,746	19,120	15,717	18,648	23,928	58,293	112,159
Production Costs	18,658	13,029	14,008	12,281	12,262	12,177	12,105	9,478	7,819	7,288	6,546	21,653	43,236
Exploration	1,428	1,237	1,221	1,118	1,491	1,266	2,047	4,395	1,917	2,637	372	4,926	11,368
DD&A	8,308	9,100	9,015	7,010	6,652	7,406	8,427	9,220	9,437	7,153	6,483	23,073	40,720
G&A/Other	146	653	-66	1,188	897	584	310	544	430	583	60	1,073	1,927
Pre-tax Results Of Operations	26,329	11,428	20,607	17,042	17,088	14,870	11,857	-4,517	-3,886	987	10,467	7,568	14,908
Income Taxes	12,567	5,742	8,437	8,949	8,429	6,795	4,619	-1,365	-1,620	695	3,829	2,904	6,157
Results Of Operations	13,762	5,686	12,170	8,093	8,659	8,075	7,238	-3,152	-2,266	292	6,638	4,664	8,751

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	24,118	13,358	18,727	17,678	16,937	18,104	17,759	9,571	8,113	8,850	11,966	28,929	56,259
Production Costs	8,577	5,848	6,180	7,565	7,572	7,432	7,056	5,885	5,083	4,595	3,724	13,402	26,343
Exploration	808	701	624	581	1,010	848	1,405	2,722	1,604	689	256	2,549	6,676
DD&A	4,787	5,060	4,589	4,085	4,317	4,940	5,004	5,517	5,786	3,853	3,322	12,961	23,482
G&A/Other	76	157	374	331	526	179	294	240	227	193	209	629	1,163
Pre-tax Results Of Operations	9,870	1,592	6,960	5,116	3,512	4,705	4,000	-4,793	-4,587	-480	4,455	-612	-1,405
Income Taxes	2,998	449	1,677	1,839	1,153	1,653	1,336	-1,526	-1,699	-180	771	-1,107	-1,297
Results Of Operations	6,872	1,143	5,283	3,277	2,359	3,052	2,664	-3,267	-2,888	-300	3,684	495	-108

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	30,751	22,089	26,058	20,961	21,453	18,199	16,987	9,549	7,604	9,798	11,962	29,364	55,900
Production Costs	10,081	7,181	7,828	4,716	4,690	4,745	5,049	3,593	2,736	2,693	2,822	8,251	16,893
Exploration	620	536	597	537	481	418	642	1,673	313	1,948	116	2,377	4,692
DD&A	3,521	4,040	4,426	2,925	2,335	2,466	3,423	3,703	3,651	3,300	3,161	10,112	17,238
G&A/Other	70	496	-440	857	371	405	16	304	203	390	-149	444	764
Pre-tax Results Of Operations	16,459	9,836	13,647	11,926	13,576	10,165	7,857	276	701	1,467	6,012	8,180	16,313
Income Taxes	9,569	5,292	6,760	7,110	7,276	5,142	3,283	161	79	874	3,058	4,011	7,455
Results Of Operations	6,890	4,544	6,887	4,816	6,300	5,023	4,574	115	622	593	2,954	4,169	8,858

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

ConocoPhillips (COP - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$65.07	$41.02	$57.71	$62.62	$63.45	$61.24	$58.15	$31.30	$26.28	$36.02	$49.47	$36.44	$39.95
Production Costs	$22.13	$15.08	$18.05	$19.90	$20.27	$20.54	$20.26	$15.52	$13.07	$14.08	$13.53	$13.54	$15.40
Exploration	$1.69	$1.43	$1.57	$1.81	$2.46	$2.14	$3.43	$7.20	$3.20	$5.09	$0.77	$3.08	$4.05
DD&A	$9.85	$10.53	$11.62	$11.36	$11.00	$12.49	$14.10	$15.09	$15.78	$13.82	$13.40	$14.43	$14.50
G&A/Other	$0.17	$0.76	-$0.09	$1.93	$1.48	$0.99	$0.52	$0.89	$0.72	$1.13	$0.12	$0.67	$0.69
Pre-tax Results Of Operations	$31.23	$13.22	$26.56	$27.62	$28.24	$25.08	$19.84	-$7.39	-$6.50	$1.91	$21.64	$4.73	$5.31
Income Taxes	$14.90	$6.64	$10.87	$14.50	$13.93	$11.46	$7.73	-$2.24	-$2.71	$1.34	$7.92	$1.82	$2.19
Results Of Operations	$16.32	$6.58	$15.68	$13.12	$14.31	$13.62	$12.11	-$5.16	-$3.79	$0.56	$13.72	$2.92	$3.12

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$62.08	$34.76	$53.81	$53.68	$50.51	$53.54	$51.43	$27.40	$25.55	$34.30	$48.22	$35.12	$37.05
Production Costs	$22.08	$15.22	$17.76	$22.97	$22.58	$21.98	$20.43	$16.85	$16.01	$17.81	$15.01	$16.27	$17.35
Exploration	$2.08	$1.82	$1.79	$1.76	$3.01	$2.51	$4.07	$7.79	$5.05	$2.67	$1.03	$3.09	$4.40
DD&A	$12.32	$13.17	$13.19	$12.40	$12.87	$14.61	$14.49	$15.79	$18.22	$14.93	$13.39	$15.74	$15.47
G&A/Other	$0.20	$0.41	$1.07	$1.01	$1.57	$0.53	$0.85	$0.69	$0.71	$0.75	$0.84	$0.76	$0.77
Pre-tax Results Of Operations	$25.41	$4.14	$20.00	$15.53	$10.47	$13.91	$11.58	-$13.72	-$14.45	-$1.86	$17.95	-$0.74	-$0.93
Income Taxes	$7.72	$1.17	$4.82	$5.59	$3.44	$4.89	$3.87	-$4.37	-$5.35	-$0.70	$3.11	-$1.34	-$0.85
Results Of Operations	$17.69	$2.97	$15.18	$9.95	$7.04	$9.03	$7.71	-$9.35	-$9.10	-$1.16	$14.84	$0.60	-$0.07

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$67.63	$46.03	$60.88	$72.87	$79.55	$71.46	$67.36	$36.52	$27.09	$37.73	$50.79	$37.85	$43.35
Production Costs	$22.17	$14.97	$18.29	$16.39	$17.39	$18.63	$20.02	$13.74	$9.75	$10.37	$11.98	$10.64	$13.10
Exploration	$1.36	$1.12	$1.39	$1.87	$1.78	$1.64	$2.55	$6.40	$1.12	$7.50	$0.49	$3.06	$3.64
DD&A	$7.74	$8.42	$10.34	$10.17	$8.66	$9.68	$13.57	$14.16	$13.01	$12.71	$13.42	$13.03	$13.37
G&A/Other	$0.15	$1.03	-$1.03	$2.98	$1.38	$1.59	$0.06	$1.16	$0.72	$1.50	-$0.63	$0.57	$0.59
Pre-tax Results Of Operations	$36.20	$20.50	$31.89	$41.46	$50.34	$39.91	$31.16	$1.06	$2.50	$5.65	$25.53	$10.54	$12.65
Income Taxes	$21.05	$11.03	$15.79	$24.72	$26.98	$20.19	$13.02	$0.61	$0.28	$3.37	$12.99	$5.17	$5.78
Results Of Operations	$15.15	$9.47	$16.09	$16.74	$23.36	$19.72	$18.14	$0.44	$2.22	$2.28	$12.54	$5.37	$6.87

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$80.13	$50.53	$63.62	$86.39	$95.70	$86.87	$79.33	$46.17	$35.02	$45.32	$59.85	$46.64	$53.12
Production Costs	$9.98	$9.21	$9.79	$11.74	$14.42	$18.97	$18.80	$14.99	$10.94	$10.17	$11.96	$11.01	$13.38
Exploration	$1.58	$1.09	$1.11	$1.91	$1.19	$1.77	$1.91	$2.17	$1.19	$0.57	$0.77	$0.84	$1.33
DD&A	$12.85	$15.42	$16.41	$13.40	$11.18	$13.88	$22.98	$23.19	$18.41	$15.55	$16.79	$16.90	$19.40
G&A/Other	-$2.36	$0.85	$0.07	$2.17	$2.01	$1.61	$0.16	$3.19	$1.76	$2.89	-$1.88	$0.97	$1.26
Pre-tax Results Of Operations	$58.09	$23.97	$36.24	$57.16	$66.90	$50.65	$35.48	$2.62	$2.72	$16.13	$32.22	$16.93	$17.75
Income Taxes	$35.14	$16.42	$23.26	$41.48	$48.24	$33.99	$23.26	$1.72	$0.04	$9.18	$18.22	$9.10	$10.45
Results Of Operations	$22.95	$7.55	$12.98	$15.69	$18.66	$16.66	$12.22	$0.90	$2.68	$6.96	$14.00	$7.83	$7.31

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	$61.53	$44.12	$59.67	$65.09	$72.04	$65.33	$62.07	$32.40	$24.18	$34.40	$46.62	$34.16	$39.20
Production Costs	$28.13	$17.41	$22.07	$19.07	$18.78	$18.50	$20.56	$13.21	$9.31	$10.46	$11.99	$10.48	$12.98
Exploration	$1.26	$1.13	$1.52	$1.84	$2.06	$1.59	$2.83	$8.20	$1.09	$10.55	$0.37	$4.00	$4.62
DD&A	$5.25	$5.44	$7.64	$8.31	$7.48	$8.01	$9.41	$10.31	$11.02	$11.46	$11.87	$11.41	$10.80
G&A/Other	$1.38	$1.11	-$1.52	$3.44	$1.08	$1.58	$0.02	$0.30	$0.34	$0.89	-$0.06	$0.41	$0.31
Pre-tax Results Of Operations	$25.51	$19.02	$29.95	$32.43	$42.64	$35.64	$29.24	$0.39	$2.42	$1.04	$22.44	$7.87	$10.48
Income Taxes	$14.17	$8.74	$12.47	$15.08	$17.09	$14.70	$8.49	$0.14	$0.37	$0.81	$10.57	$3.52	$3.80
Results Of Operations	$11.35	$10.29	$17.48	$17.35	$25.55	$20.94	$20.76	$0.24	$2.05	$0.23	$11.87	$4.34	$6.68

Source: BMO Capital Markets, Company Reports

ConocoPhillips (COP - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	5,739.7	5,624.7	5,342.5	4,980.8	4,717.8	4,534.2	4,463.0	4,501.4	4,276.7	3,594.5	3,117.8	3,663.0	3,990.7
Liquids Production (b/d)	1,353,425	1,430,137	1,235,616	860,274	871,233	868,493	893,151	923,288	926,027	819,178	805,479	850,228	873,425
Total Production (boe/d)	2,310,046	2,367,580	2,126,027	1,690,411	1,657,534	1,624,201	1,636,986	1,673,516	1,638,813	1,418,265	1,325,114	1,460,731	1,538,539
% Gas Production	41%	40%	42%	49%	47%	47%	45%	45%	43%	42%	39%	42%	43%
% Oil Production	59%	60%	58%	51%	53%	53%	55%	55%	57%	58%	61%	58%	57%
Proven Reserves:													
Gas Reserves (bcf)	24,948.0	24,247.0	21,716.0	20,916.0	19,614.0	20,388.0	20,500.0	17,193.0	15,225.0	11,906.0	12,149.0	13,093.3	15,394.6
Oil Reserves (mmbbls)	5,931.0	6,285.0	4,691.0	4,901.0	5,373.0	5,523.0	5,489.0	5,314.0	3,887.0	3,054.0	3,238.0	3,393.0	4,196.4
Total Proven Reserves (mmboe)	10,089.0	10,326.2	8,310.3	8,387.0	8,642.0	8,921.0	8,905.7	8,179.5	6,424.5	5,038.3	5,262.8	5,575.2	6,762.2
% Gas Reserves	41%	39%	44%	42%	38%	38%	38%	35%	39%	39%	38%	39%	38%
% Oil Reserves	59%	61%	56%	58%	62%	62%	62%	65%	61%	61%	62%	61%	62%
Proven Reserve Life Index	12.0	11.9	10.7	13.6	14.3	15.0	14.9	13.4	10.7	9.7	10.9	10.5	11.9
Proven Reserve Additions:													
Gas Additions (bcf)	1,605.0	1,352.0	(581.0)	1,018.0	420.0	2,429.0	1,741.0	(1,664.0)	(407.0)	(2,007.0)	1,381.0	(1,033.0)	(956.0)
Oil Additions (mmbbls)	(28.0)	620.0	(1,143.0)	524.0	790.0	467.0	292.0	162.0	(1,089.0)	(534.0)	478.0	(1,145.0)	(691.0)
Total Additions (mmboe)	239.5	845.3	(1,239.8)	693.7	860.0	871.8	582.2	(115.3)	(1,156.8)	(868.5)	708.2	(1,317.2)	-850.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	268.5	637.5	379.8	704.3	771.8	716.2	444.5	307.7	241.2	559.5	476.5	1,277.2	2,029.3
Acquisitions	103.8	25.5	2.5	2.3	2.8	22.2	0.0	0.0	0.2	0.0	290.0	290.2	290.2
Dispositions	(86.0)	(7.2)	(2,163.2)	(47.2)	(85.5)	(188.0)	(159.3)	(173.8)	(28.2)	(1,903.8)	(108.3)	(2,040.3)	(2,373.5)
Revisions of Estimates	(46.8)	189.5	541.0	34.2	170.8	321.5	297.0	-249.2	-1,370.0	475.8	50.0	(844.2)	(796.3)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	112.1%	75.4%	-30.6%	101.5%	89.7%	82.1%	76.4%	-266.8%	-20.8%	-64.4%	67.3%	-97.0%	-238.7%
Acquisitions	43.4%	3.0%	-0.2%	0.3%	0.3%	2.5%	0.0%	0.0%	0.0%	0.0%	41.0%	-22.0%	-34.1%
Dispositions	-35.9%	-0.8%	174.5%	-6.8%	-9.9%	-21.6%	-27.4%	150.7%	2.4%	219.2%	-15.3%	154.9%	279.1%
Revisions of Estimates	-19.6%	22.4%	-43.6%	4.9%	19.9%	36.9%	51.0%	216.0%	118.4%	-54.8%	7.1%	64.1%	93.6%
Additions as % of Production:													
Gas	76.6%	65.9%	-29.8%	56.0%	24.4%	146.8%	106.9%	-101.3%	-26.1%	-153.0%	121.4%	-25.8%	-13.1%
Oil	-5.7%	118.8%	-253.4%	166.9%	248.4%	147.3%	89.6%	48.1%	-322.2%	-178.6%	162.6%	-123.0%	-43.4%
Total	28.4%	97.8%	-159.8%	112.4%	142.1%	147.1%	97.4%	-18.9%	-193.4%	-167.8%	146.4%	-82.3%	-30.3%
Additions as % of Reserves:													
Gas	6.4%	5.6%	-2.7%	4.9%	2.1%	11.9%	8.5%	-9.7%	-2.7%	-16.9%	11.4%	-7.9%	-6.2%
Oil	-0.5%	9.9%	-24.4%	10.7%	14.7%	8.5%	5.3%	3.0%	-28.0%	-17.5%	14.8%	-33.7%	-16.5%
Total	2.4%	8.2%	-14.9%	8.3%	10.0%	9.8%	6.5%	-1.4%	-18.0%	-17.2%	13.5%	-23.6%	-12.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,878.0	$1,676.0	$1,781.0	$2,489.0	$2,309.0	$2,546.0	$2,980.0	$2,494.0	$1,485.0	$867.0	$997.0	$3,349.0	$8,823.0
Development	$11,457.0	$8,736.0	$8,042.0	$10,090.0	$14,552.0	$17,500.0	$17,265.0	$9,314.0	$2,845.0	$4,132.0	$5,432.0	$12,409.0	$38,988.0
Acquisitions	$6,082.0	$524.0	$1,131.0	$1,253.0	$961.0	$773.0	$328.0	$226.0	$212.0	$411.0	$2,620.0	$3,243.0	$3,797.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$19,417.0	$10,936.0	$10,954.0	$13,832.0	$17,822.0	$20,819.0	$20,573.0	$12,034.0	$4,542.0	$5,410.0	$9,049.0	$19,001.0	$51,608.0
Expenditures as % of Total:													
Exploration	9.7%	15.3%	16.3%	18.0%	13.0%	12.2%	14.5%	20.7%	32.7%	16.0%	11.0%	17.6%	17.1%
Development	59.0%	79.9%	73.4%	72.9%	81.7%	84.1%	83.9%	77.4%	62.6%	76.4%	60.0%	65.3%	75.5%
Acquisitions	31.3%	4.8%	10.3%	9.1%	5.4%	3.7%	1.6%	1.9%	4.7%	7.6%	29.0%	17.1%	7.4%
Cashflow (US$million)	$23,498.0	$16,023.3	$22,406.1	$16,220.6	$16,802.2	$16,747.2	$17,712.1	$10,463.3	$9,087.8	$10,082.4	$13,493.0	$32,663.2	$60,838.6
Cashflow (US$/boe)	$27.87	$18.54	$28.87	$26.29	$27.77	$28.25	$29.64	$17.13	$15.19	$19.48	$27.90	$20.42	$21.67
Recycle Ratio	0.5x	1.4x	2.4x	1.4x	1.5x	1.4x	1.1x	0.1x	-3.8x	3.7x	2.5x	0.8x	0.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$60.16	$12.59	$10.67	$17.03	$17.89	$19.32	$27.30	$201.85	-$3.84	$4.83	$12.21	$36.39	$38.78
Acquisition Costs	$58.57	$20.55	$452.40	$537.00	$339.18	$34.87	na	na	$1,272.00	na	$9.03	$11.18	$13.09
All Sources (incl. revisions)	$59.65	$12.83	$11.86	$18.67	$18.85	$19.64	$27.75	$205.71	-$4.02	$5.23	$11.08	$26.27	$33.88
Exploration & Development (excl. revisions)	$49.66	$16.33	$25.86	$17.86	$21.85	$27.99	$45.55	$38.38	$17.95	$8.93	$13.49	$12.34	$23.56
Acquisition Costs	$58.57	$20.55	$452.40	$537.00	$339.18	$34.87	na	na	$1,272.00	na	$9.03	$11.18	$13.09
All Sources (excl. revisions)	$52.15	$16.49	$28.65	$19.57	$23.01	$28.20	$46.28	$39.11	$18.82	$9.67	$11.81	$12.12	$22.25
Geographically Segmented Costs													
North America	-$26.90	$10.02	$10.01	$15.89	$35.90	$13.32	$25.93	-$25.06	-$5.62	$3.79	$11.28	$13.72	$27.80
Europe	$114.84	$30.05	$20.01	$11.81	$70.75	$98.20	-$359.18	-$69.77	$11.21	$12.32	$12.66	$12.38	$73.59
Other International	$17.85	$14.45	$12.30	$38.13	$8.30	$22.17	$17.73	$9.12	-$2.36	$13.63	$9.26	-$9.65	$42.26

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

ConocoPhillips (COP - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	22.13	15.08	18.05	19.90	20.27	20.54	20.26	15.52	13.07	14.08	14.08	13.54	15.40
Exploration Expense	1.69	1.43	1.57	1.81	2.46	2.14	3.43	7.20	3.20	5.09	5.09	3.08	4.05
G&A/Other	0.17	0.76	(0.09)	1.93	1.48	0.99	0.52	0.89	0.72	1.13	1.13	0.67	0.69
F&D Costs	17.61	12.83	11.86	18.67	18.85	19.64	27.75	39.11	18.82	9.67	9.67	13.19	21.29
Return on Capital	13.33	9.71	8.01	16.28	17.35	19.20	26.69	34.60	12.72	5.90	5.90	8.61	15.97
Income Taxes	12.17	9.81	5.55	18.01	16.89	16.15	17.03	14.99	9.09	3.04	3.04	5.15	9.09
Breakeven Oil Price	67.11	49.61	44.96	76.60	77.31	78.66	95.67	112.30	57.62	38.91	38.91	44.24	66.48
Quality Differential	14.61	6.71	0.02	5.70	3.31	7.32	7.70	5.32	5.89	3.28	3.28	3.46	4.68
Required WTI Price	81.72	56.32	44.98	82.31	80.62	85.98	103.37	117.62	63.51	42.19	42.19	47.70	71.16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	22.08	15.22	17.76	22.97	22.58	21.98	20.43	16.85	16.01	17.81	17.81	16.27	17.35
Exploration Expense	2.08	1.82	1.79	1.76	3.01	2.51	4.07	7.79	5.05	2.67	2.67	3.09	4.40
G&A/Other	0.20	0.41	1.07	1.01	1.57	0.53	0.85	0.69	0.71	0.75	0.75	0.76	0.77
F&D Costs	49.79	10.02	10.01	15.89	35.90	13.32	25.93	55.49	16.92	6.37	6.37	11.52	23.20
Return on Capital	38.78	8.01	8.46	14.52	31.43	12.33	24.11	41.46	10.91	4.75	4.75	8.65	18.16
Income Taxes	16.92	3.15	2.69	8.15	15.35	6.68	12.09	19.36	6.41	2.84	2.84	3.81	8.31
Breakeven Oil Price	129.84	38.63	41.79	64.30	109.84	57.35	87.49	141.64	56.02	35.18	35.18	44.12	72.19
Quality Differential	11.52	7.67	(2.48)	11.33	14.20	14.30	14.55	9.36	7.70	9.12	9.12	9.65	10.57
Required WTI Price	141.36	46.30	39.30	75.62	124.04	71.65	102.04	150.99	63.72	44.30	44.30	53.77	82.76

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	22.17	14.97	18.29	16.39	17.39	18.63	20.02	13.74	9.75	10.37	10.37	10.64	13.10
Exploration Expense	1.36	1.12	1.39	1.87	1.78	1.64	2.55	6.40	1.12	7.50	7.50	3.06	3.64
G&A/Other	0.15	1.03	(1.03)	2.98	1.38	1.59	0.06	1.16	0.72	1.50	1.50	0.57	0.59
F&D Costs	21.22	16.18	13.48	22.22	12.85	30.67	29.87	15.38	23.89	13.08	13.08	15.78	18.52
Return on Capital	16.61	11.72	7.27	18.35	12.60	31.88	30.83	15.54	17.04	6.30	6.30	8.98	13.67
Income Taxes	23.07	13.65	7.13	27.09	14.55	32.63	22.13	21.67	17.18	9.30	9.30	10.35	14.89
Breakeven Oil Price	84.59	58.67	46.54	88.89	60.56	117.05	105.45	73.89	69.70	48.06	48.06	49.39	64.40
Quality Differential	17.24	5.94	2.05	(0.74)	(10.24)	(1.95)	(1.69)	(0.08)	3.84	(2.52)	(2.52)	(2.99)	(2.15)
Required WTI Price	101.84	64.61	48.59	88.16	50.31	115.10	103.77	73.80	73.54	45.54	45.54	46.40	62.26

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	9.98	9.21	9.79	11.74	14.42	18.97	18.80	14.99	10.94	10.17	11.96	11.01	13.38
Exploration Expense	1.58	1.09	1.11	1.91	1.19	1.77	1.91	2.17	1.19	0.57	0.77	0.84	1.33
G&A/Other	(2.36)	0.85	0.07	2.17	2.01	1.61	0.16	3.19	1.76	2.89	(1.88)	0.97	1.26
F&D Costs	38.85	30.05	20.01	11.81	70.75	98.20	70.75	79.90	11.21	12.32	12.66	12.38	37.37
Return on Capital	15.27	11.09	7.42	6.12	46.48	74.89	39.97	44.46	4.90	5.05	4.99	5.13	17.03
Income Taxes	23.37	24.12	13.30	16.19	120.13	152.76	76.06	84.60	0.07	6.67	6.49	3.18	16.49
Breakeven Oil Price	86.68	76.40	51.70	49.95	254.97	348.20	207.65	229.31	30.08	37.67	34.98	33.51	86.85
Quality Differential	(1.47)	(2.66)	(5.32)	(9.33)	(22.33)	(12.08)	(8.90)	(7.68)	(1.54)	(5.01)	(10.72)	(5.75)	(6.77)
Required WTI Price	85.21	73.73	46.38	40.62	232.64	336.12	198.75	221.63	28.53	32.67	24.27	27.75	80.08

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Operating Costs	28.13	17.41	22.07	19.07	18.78	18.50	20.56	13.21	9.31	10.46	11.99	10.48	12.98
Exploration Expense	1.26	1.13	1.52	1.84	2.06	1.59	2.83	8.20	1.09	10.55	0.37	4.00	4.62
G&A/Other	1.38	1.11	(1.52)	3.44	1.08	1.58	0.02	0.30	0.34	0.89	(0.06)	0.41	0.31
F&D Costs	17.85	14.45	12.30	38.13	8.30	22.17	17.73	9.12	21.96	13.63	9.26	14.95	14.34
Return on Capital	17.95	12.83	7.57	38.75	9.70	26.31	22.26	11.49	18.02	6.99	5.19	9.43	12.45
Income Taxes	22.41	10.90	5.40	33.69	6.48	18.47	9.11	6.78	10.63	4.66	4.62	6.67	7.65
Breakeven Oil Price	88.98	57.83	47.35	134.91	46.40	88.62	72.52	49.10	61.35	47.19	31.37	45.93	52.35
Quality Differential	26.38	9.60	5.33	4.20	(4.62)	2.09	1.50	3.16	5.82	(1.43)	(10.07)	(1.89)	(0.20)
Required WTI Price	115.36	67.43	52.68	139.11	41.78	90.70	74.02	52.25	67.16	45.76	21.30	44.04	52.14

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

ConocoPhillips (COP - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	19.04	23.78	28.77	28.92	27.97	26.09	18.68	16.15	16.15	17.35	16.30	16.58	18.99
Exploration Expense	1.81	2.07	2.62	3.52	2.91	4.41	8.66	3.96	3.96	6.28	0.93	3.77	4.99
G&A/Other	0.95	(0.11)	2.78	2.12	1.34	0.67	1.07	0.89	0.89	1.39	0.15	0.82	0.85
F&D Costs (1-Year)	14.91	15.46	22.66	20.19	25.35	38.03	42.88	21.85	21.85	10.81	13.55	15.40	25.42
Return on Capital	11.32	10.29	21.23	20.37	26.51	39.78	38.53	14.97	14.97	6.69	9.33	10.28	20.34
Income Taxes	11.43	7.13	23.48	19.83	22.30	25.38	16.69	10.70	10.70	3.60	5.38	6.40	14.31
Breakeven Oil Price	**59.45**	**58.62**	**101.54**	**94.94**	**106.38**	**134.36**	**126.51**	**68.51**	**68.51**	**46.12**	**45.65**	**53.26**	**84.89**
Quality Differential	8.47	0.02	8.24	4.72	9.97	9.91	6.40	7.27	7.27	4.04	1.47	4.26	5.82
Required WTI Price	**67.92**	**58.64**	**109.78**	**99.66**	**116.36**	**144.27**	**132.91**	**75.78**	**75.78**	**50.16**	**47.12**	**57.52**	**90.71**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	19.04	23.78	28.77	28.92	27.97	26.09	18.68	16.15	16.15	17.35	16.30	16.58	18.99
Exploration Expense	1.81	2.07	2.62	3.52	2.91	4.41	8.66	3.96	3.96	6.28	0.93	3.77	4.99
G&A/Other	0.95	(0.11)	2.78	2.12	1.34	0.67	1.07	0.89	0.89	1.39	0.15	0.82	0.85
F&D Costs (1-Year)	13.45	13.88	40.93	49.62	40.90	37.26	26.90	18.13	18.13	7.98	12.88	11.65	20.63
Return on Capital	10.21	9.24	38.37	49.99	42.78	37.76	24.14	12.52	12.52	4.94	8.79	7.75	15.95
Income Taxes	10.31	6.41	42.44	48.66	35.99	24.09	10.46	8.95	8.95	2.66	5.07	4.83	11.23
Breakeven Oil Price	**55.77**	**55.27**	**155.91**	**182.82**	**151.90**	**130.29**	**89.90**	**60.59**	**60.59**	**40.59**	**44.11**	**45.40**	**72.63**
Quality Differential	8.47	0.02	8.24	4.72	9.97	9.91	6.40	7.27	7.27	4.04	1.47	4.26	5.82
Required WTI Price	**64.25**	**55.30**	**164.15**	**187.54**	**161.87**	**140.20**	**96.30**	**67.86**	**67.86**	**44.64**	**45.58**	**49.66**	**78.45**

Source: BMO Capital Markets, Company Reports

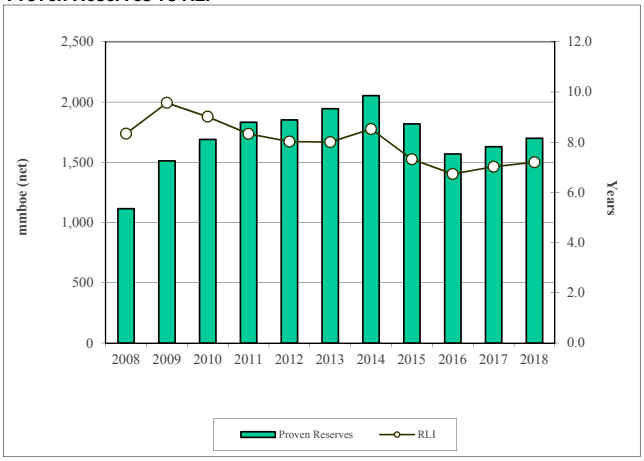
See pages F1 to F4 for analyst coverage.

Ecopetrol (EC - NYSE)

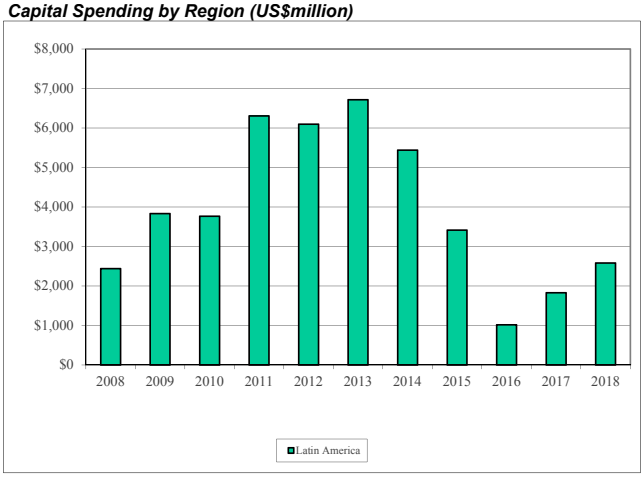
US$, net

- Ecopetrol's results of upstream operations improved to $14.12/boe versus $6.48/boe in 2017.
- F&D costs increased to $8.43/boe in 2018 from $6.23/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $8.48/boe from $6.85/boe, while the costs for PD reserves also rose to $15.79/boe from $12.95/boe the previous year.
- Based on 2018 results, we estimate that Ecopetrol requires a Brent breakeven oil price of $143.64/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a breakeven oil price of $155.96/boe.
- The company reported ROCE of 17.5% in 2018 versus 11.7% in 2017.

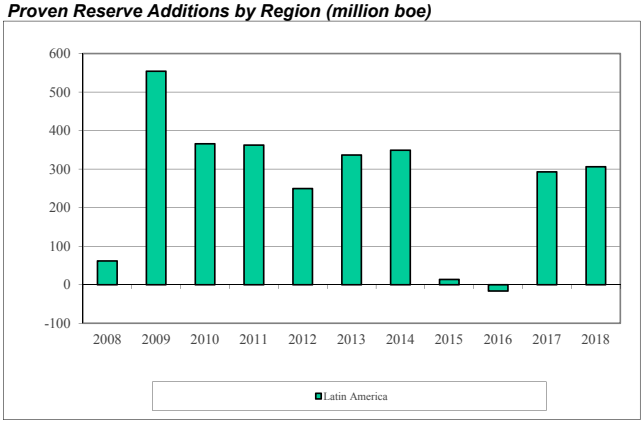
Proven Reserves vs RLI



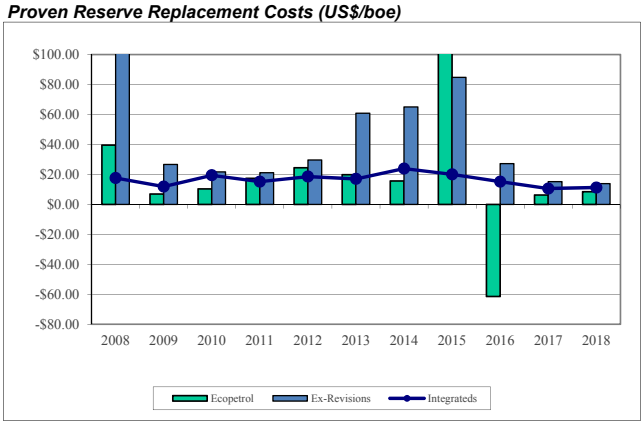
Capital Spending by Region (US$million)



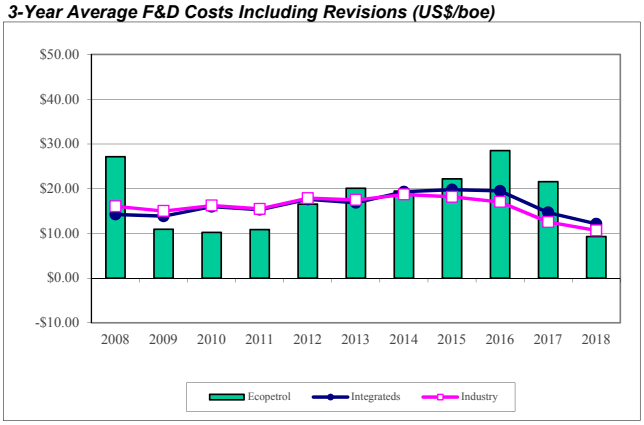
Proven Reserve Additions by Region (million boe)



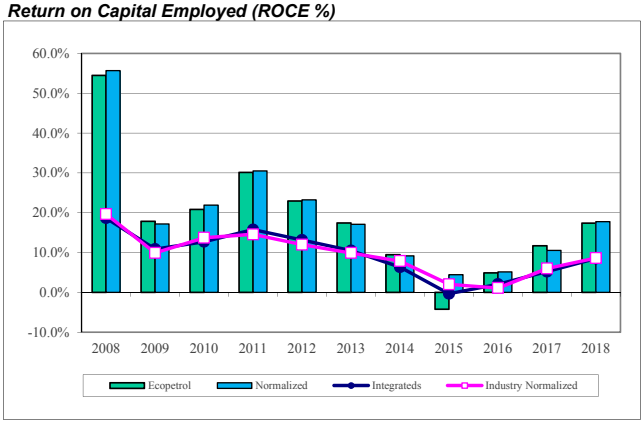
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

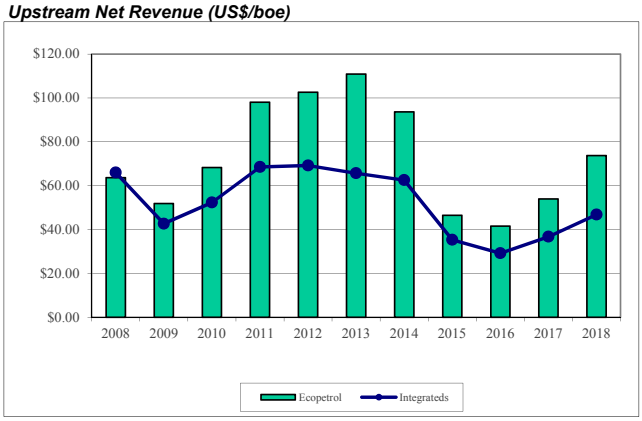
See pages F1 to F4 for analyst coverage.

Ecopetrol (EC - NYSE)

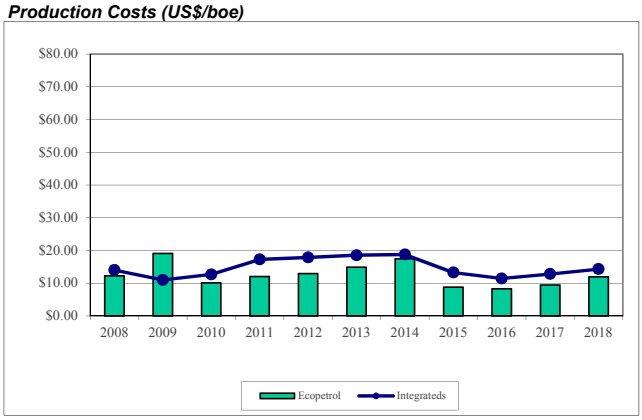
US$/boe, net

Worldwide

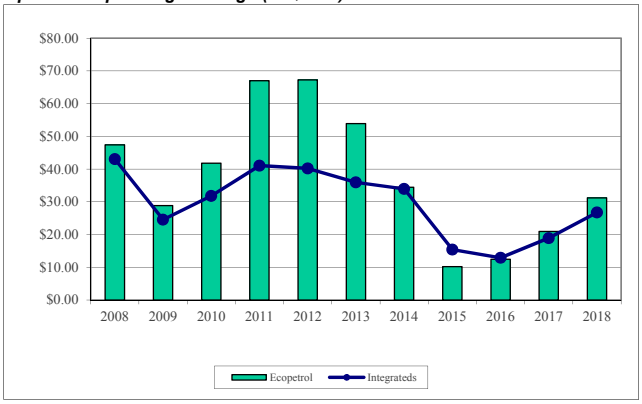
Upstream Net Revenue (US$/boe)



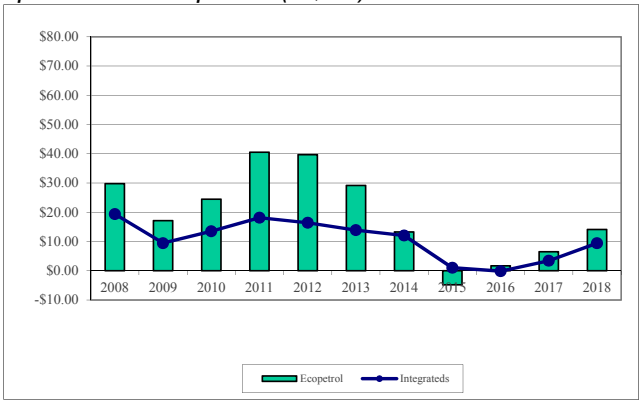
Production Costs (US$/boe)



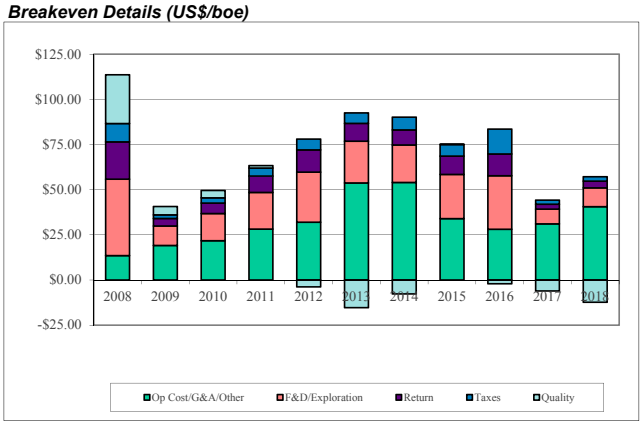
Upstream Operating Earnings (US$/boe)



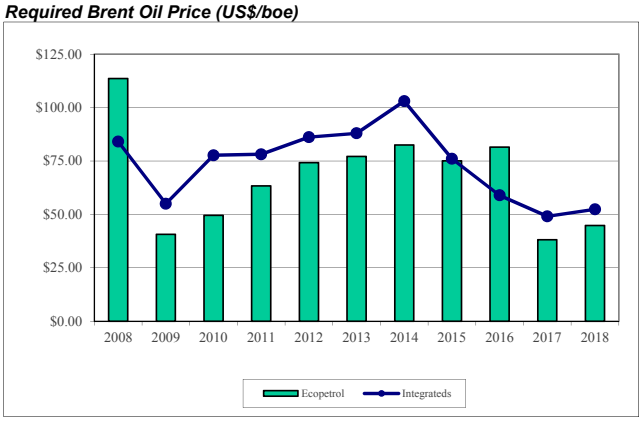
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



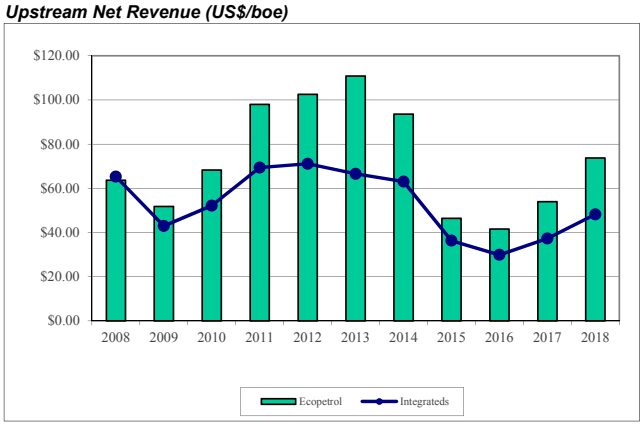
Source: BMO Capital Markets, Company Reports

Ecopetrol (EC - NYSE)

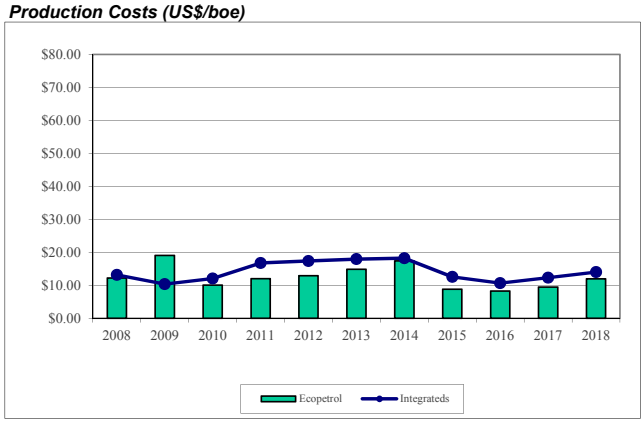
US$/boe, net

Total International

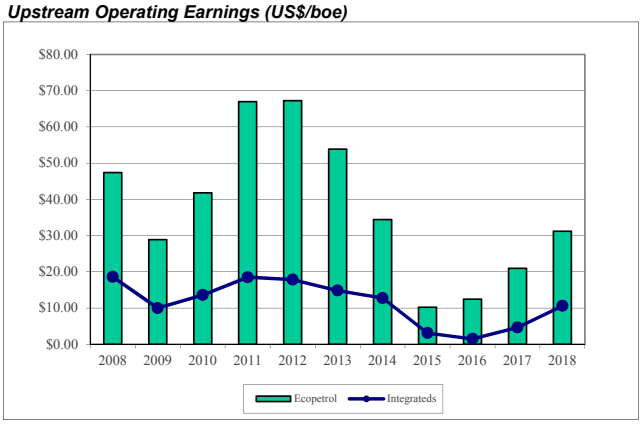
Upstream Net Revenue (US$/boe)



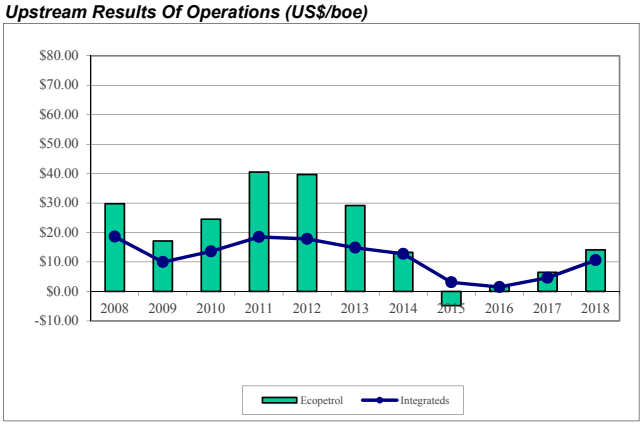
Production Costs (US$/boe)



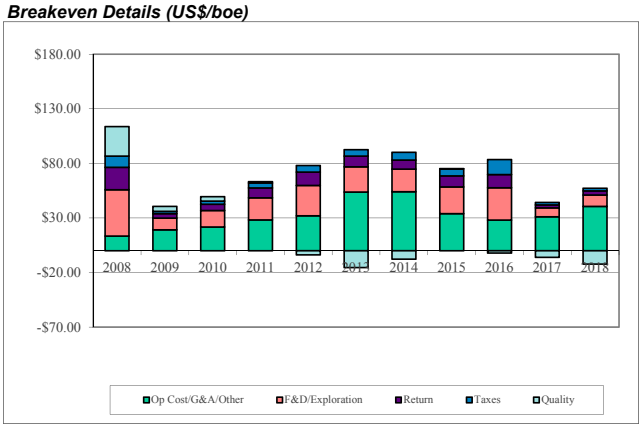
Upstream Operating Earnings (US$/boe)



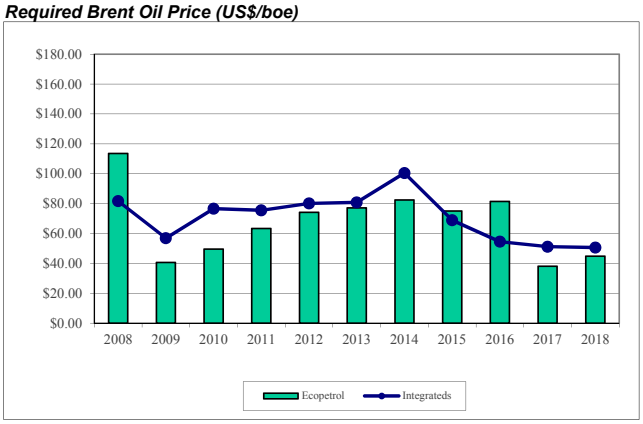
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

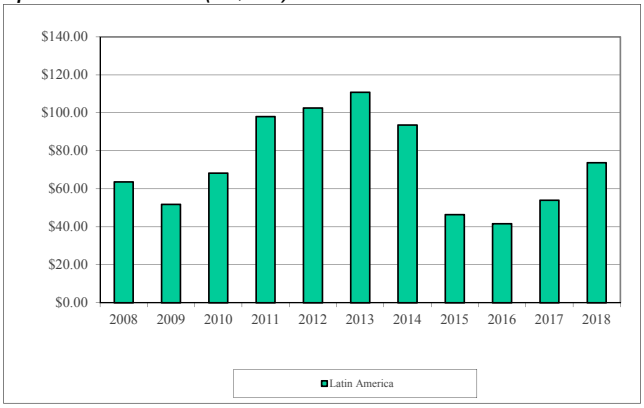
See pages F1 to F4 for analyst coverage.

Ecopetrol (EC - NYSE)

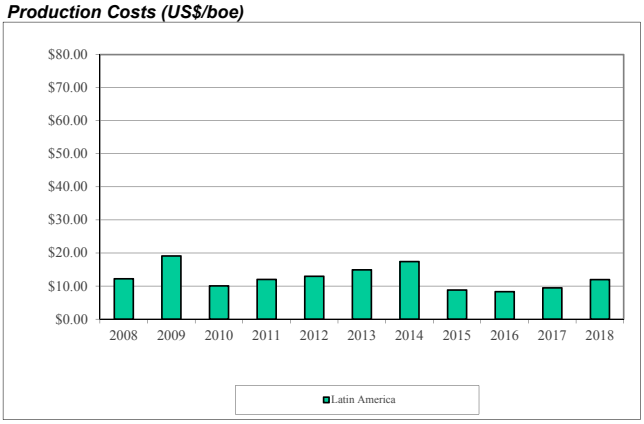
US$/boe, net

International Segments

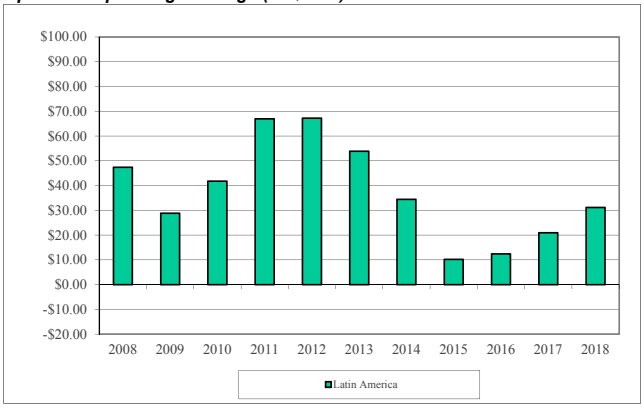
Upstream Net Revenue (US$/boe)



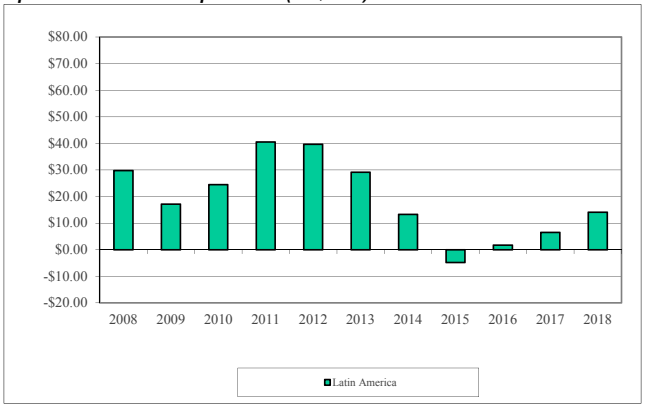
Production Costs (US$/boe)



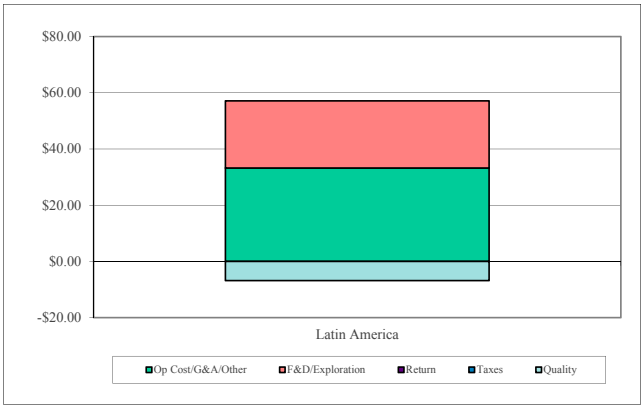
Upstream Operating Earnings (US$/boe)



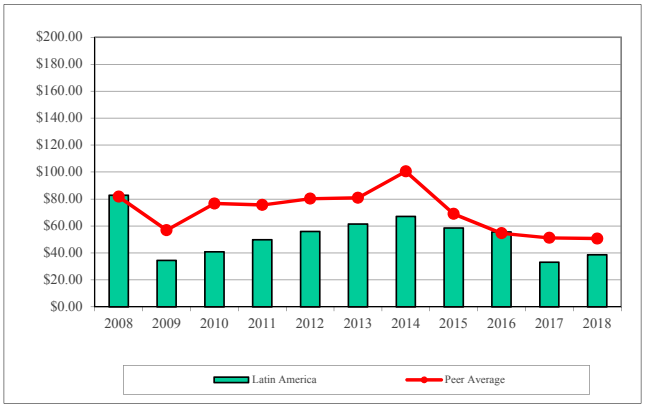
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Ecopetrol (EC - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	8,507	8,186	12,796	21,550	23,661	26,934	22,532	11,530	9,686	12,514	17,397
Midstream / Downstream Revenue	11,902	11,379	15,639	23,704	23,454	14,391	17,348	12,387	11,546	12,867	16,004
Other	(3,203)	(5,452)	(6,315)	(9,634)	(8,779)	(3,635)	(5,448)	(4,896)	(5,069)	(6,630)	(10,194)
Total Revenue and Other Income	17,205	14,113	22,120	35,620	38,336	37,690	34,432	19,021	16,162	18,751	23,207
Costs and Expenses:											
Crude Oil and Product Purchases	7,091	4,861	9,701	14,663	16,638	16,468	15,252	8,800	6,953	7,403	8,505
Production and Transportation Expenses	1,632	3,014	1,886	2,644	2,985	3,614	4,194	2,183	1,929	2,190	2,820
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	373	614	894	623	776	788	1,241	577	243	450	469
General and Administrative	808	605	756	1,217	1,513	2,444	2,390	1,507	1,315	1,122	1,072
Depreciation, Depletion and Amortization	933	1,365	2,096	2,556	2,947	2,692	3,061	2,460	2,536	2,775	2,606
Interest, net	10	64	77	225	324	317	408	762	717	838	806
Other	(1,769)	225	654	885	720	(343)	182	4,760	(128)	(642)	(45)
Earnings Before Income Tax	8,127	3,366	6,057	12,807	12,434	11,710	7,703	(2,027)	2,597	4,614	6,973
Income Taxes:											
Current Income Taxes	1,833	905	1,687	4,096	3,951	4,437	3,363	1,276	1,506	1,701	2,509
Future Income Taxes	391	77	20	213	21	(108)	202	(1,017)	9	242	285
Total Income Taxes	2,224	981	1,707	4,310	3,972	4,329	3,564	258	1,514	1,944	2,794
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	5,903	2,384	4,350	8,497	8,462	7,382	4,139	(2,285)	1,082	2,671	4,180
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	5,903	2,384	4,350	8,497	8,462	7,382	4,139	(2,285)	1,082	2,671	4,180
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	5,903	2,384	4,350	8,497	8,462	7,382	4,139	(2,285)	1,082	2,671	4,180

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	5,903	2,384	4,350	8,497	8,462	7,382	4,139	(2,285)	1,082	2,671	4,180
Charges and Credits Not Impacting Cash	1,324	1,442	2,115	2,770	2,968	3,049	3,845	4,297	2,879	2,578	2,891
Other	794	468	450	484	817	684	614	4,139	2,369	1,330	1,557
Cash Flow From Operations	8,021	4,294	6,915	11,751	12,246	11,115	8,598	6,151	6,330	6,579	8,628
Change in Working Capital / Other	(1,939)	188	735	791	(653)	(1,825)	(32)	(2,368)	(1,586)	(890)	(1,027)
Net Cash From Operating Activities	6,082	4,482	7,651	12,543	11,593	9,290	8,567	3,783	4,744	5,688	7,601
Total Capital Expenditures	(3,403)	(5,965)	(5,439)	(7,855)	(8,612)	(7,612)	(7,834)	(5,138)	(1,923)	(1,940)	(2,826)
Acquisitions, net	-	(502)	(613)	(471)	-	52	40	20	14	84	(312)
Other	(1,617)	3,703	(646)	(1,093)	(310)	2,389	751	923	(1,219)	387	189
Net Cash From Investing Activities	(5,020)	(2,765)	(6,699)	(9,419)	(8,922)	(5,171)	(7,044)	(4,195)	(3,128)	(1,469)	(2,949)
Financing Activities:											
Net Change in Debt	144	2,860	1,455	(59)	2,845	4,010	3,573	2,210	482	(2,869)	(2,961)
Net Change in Common Stock	423	19	0	1,207	-	0	0	0	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(2,362)	(4,132)	(1,998)	(3,195)	(4,670)	(7,797)	(6,274)	(1,996)	(571)	(504)	(1,498)
Other	-	324	(240)	557	(39)	-	-	(720)	(832)	(904)	(883)
Net Cash From Financing Activities	(1,796)	(929)	(782)	(1,490)	(1,863)	(3,788)	(2,700)	(506)	(921)	(4,278)	(5,342)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	554	530	(75)	(97)	137
Net Increase/(Decrease) in Cash	(734)	789	170	1,634	808	332	(623)	(388)	620	(156)	(553)
Cash and Equivalents, Beginning of Year	2,129	1,395	2,184	2,354	3,988	4,795	5,127	4,504	4,116	4,736	4,580
Cash and Equivalents, End of Year	1,395	2,184	2,354	3,988	4,795	5,127	4,504	4,116	4,736	4,580	4,027

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Ecopetrol (EC - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	7,972	5,625	6,657	10,313	12,741	15,373	12,365	7,308	8,043	7,783	9,144
Net Property, Plant and Equipment	8,188	12,968	17,942	24,635	31,015	35,564	41,121	32,392	28,223	27,719	29,050
Other Assets	8,561	7,196	11,648	15,042	19,650	19,932	17,541	5,206	3,880	3,992	3,971
Total Assets	24,721	25,789	36,247	49,989	63,407	70,870	71,027	44,906	40,146	39,493	42,165
Liabilities and Stockholders' Equity											
Total Current Liabilities	3,079	3,467	5,293	8,534	12,881	11,935	10,185	6,338	5,462	5,646	6,030
Long-term Debt	3	2,652	4,129	4,318	6,385	11,465	16,915	17,677	16,032	12,870	11,516
Deferred Income Taxes	-	-	-	561	309	-	-	2,190	5,462	447	453
Other Liabilities and Deferred Credits	3,943	4,114	4,785	5,730	6,337	6,962	7,589	3,040	(1,331)	4,373	4,848
Total Liabilities	7,025	10,234	14,207	19,142	25,911	30,362	34,689	29,245	25,626	23,335	22,846
Minority Interests	123	437	256	1,220	1,449	2,448	2,096	681	511	597	666
Stockholders' Equity											
Common Shares	5,136	4,696	5,333	5,569	5,723	5,501	5,135	9,098	8,347	8,391	8,471
Contributed Surplus (Paid-in Capital)	2,375	2,191	2,488	3,677	3,872	3,722	3,474	2,401	2,203	2,214	2,235
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	5,903	2,382	4,294	8,371	8,049	6,738	3,371	(2,821)	(134)	1,746	1,738
Other / Comprehensive Income (Loss)	4,159	5,848	9,668	12,010	18,402	22,100	22,263	6,301	3,594	3,209	6,208
Total Shareholders' Equity	17,572	15,118	21,783	29,627	36,047	38,060	34,242	14,980	14,009	15,561	18,652
Total Liabilities and Shareholders' Equity	24,721	25,789	36,247	49,989	63,407	70,870	71,027	44,906	40,146	39,493	42,165

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	8,507	8,186	12,796	21,550	23,661	26,934	22,532	11,530	9,686	12,514	17,397	39,597	73,659
Production Costs	1,632	3,014	1,886	2,644	2,985	3,614	4,194	2,183	1,929	2,190	2,820	6,939	13,316
Exploration	373	614	894	623	776	788	1,241	577	243	450	469	1,163	2,981
DD&A	394	522	978	1,421	1,874	1,841	2,366	3,593	2,041	2,128	1,892	6,061	12,020
Other	168	0	2,186	3,557	4,383	9,443	8,807	6,238	4,620	5,010	6,751	16,380	31,426
Pre-tax Earnings	5,941	4,037	6,852	13,306	13,644	11,249	5,923	-1,060	853	2,736	5,465	9,054	13,917
Income Taxes	1,960	1,332	2,261	4,391	4,490	4,162	2,725	135	456	1,233	2,132	3,821	6,681
Net Earnings	3,980	2,705	4,591	8,915	9,154	7,087	3,199	-1,195	397	1,503	3,333	5,233	7,237

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Net Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	8,507	8,186	12,796	21,550	23,661	26,934	22,532	11,530	9,686	12,514	17,397	39,597	73,659
Production Costs	1,632	3,014	1,886	2,644	2,985	3,614	4,194	2,183	1,929	2,190	2,820	6,939	13,316
Exploration	373	614	894	623	776	788	1,241	577	243	450	469	1,163	2,981
DD&A	394	522	978	1,421	1,874	1,841	2,366	3,593	2,041	2,128	1,892	6,061	12,020
Other	168	0	2,186	3,557	4,383	9,443	8,807	6,238	4,620	5,010	6,751	16,380	31,426
Pre-tax Earnings	5,941	4,037	6,852	13,306	13,644	11,249	5,923	-1,060	853	2,736	5,465	9,054	13,917
Income Taxes	1,960	1,332	2,261	4,391	4,490	4,162	2,725	135	456	1,233	2,132	3,821	6,681
Net Earnings	3,980	2,705	4,591	8,915	9,154	7,087	3,199	-1,195	397	1,503	3,333	5,233	7,237

Notes: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Ecopetrol (EC - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$63.64	$51.82	$68.27	$97.99	$102.54	$110.86	$93.58	$46.44	$41.57	$53.94	$73.72	$56.49	$61.89
Production Costs	$12.21	$19.08	$10.06	$12.02	$12.94	$14.87	$17.42	$8.79	$8.28	$9.44	$11.95	$9.90	$11.19
Exploration	$2.79	$3.88	$4.77	$2.83	$3.36	$3.25	$5.16	$2.32	$1.04	$1.94	$1.99	$1.66	$2.50
DD&A	$2.95	$3.30	$5.22	$6.46	$8.12	$7.58	$9.83	$14.47	$8.76	$9.17	$8.02	$8.65	$10.10
Other	$1.25	$0.00	$11.66	$16.17	$18.99	$38.87	$36.58	$25.12	$19.83	$21.59	$28.60	$23.37	$26.41
Pre-tax Earnings	$44.44	$25.56	$36.55	$60.51	$59.13	$46.30	$24.60	-$4.27	$3.66	$11.79	$23.16	$12.92	$11.69
Income Taxes	$14.67	$8.43	$12.06	$19.97	$19.46	$17.13	$11.32	$0.54	$1.96	$5.31	$9.04	$5.45	$5.61
Net Earnings	$29.78	$17.12	$24.49	$40.54	$39.67	$29.17	$13.29	-$4.81	$1.70	$6.48	$14.12	$7.47	$6.08

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Net Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$63.64	$51.82	$68.27	$97.99	$102.54	$110.86	$93.58	$46.44	$41.57	$53.94	$73.72	$56.49	$61.89
Production Costs	$12.21	$19.08	$10.06	$12.02	$12.94	$14.87	$17.42	$8.79	$8.28	$9.44	$11.95	$9.90	$11.19
Exploration	$2.79	$3.88	$4.77	$2.83	$3.36	$3.25	$5.16	$2.32	$1.04	$1.94	$1.99	$1.66	$2.50
DD&A	$2.95	$3.30	$5.22	$6.46	$8.12	$7.58	$9.83	$14.47	$8.76	$9.17	$8.02	$8.65	$10.10
Other	$1.25	$0.00	$11.66	$16.17	$18.99	$38.87	$36.58	$25.12	$19.83	$21.59	$28.60	$23.37	$26.41
Pre-tax Earnings	$44.44	$25.56	$36.55	$60.51	$59.13	$46.30	$24.60	-$4.27	$3.66	$11.79	$23.16	$12.92	$11.69
Income Taxes	$14.67	$8.43	$12.06	$19.97	$19.46	$17.13	$11.32	$0.54	$1.96	$5.31	$9.04	$5.45	$5.61
Net Earnings	$29.78	$17.12	$24.49	$40.54	$39.67	$29.17	$13.29	-$4.81	$1.70	$6.48	$14.12	$7.47	$6.08
Operating Net Earnings	$47	$29	$42	$67	$67	$54	$34	$10	$12	$21	$31	$22	$22

Regional Breakdown:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Net Revenue	$63.64	$51.82	$68.27	$97.99	$102.54	$110.86	$93.58	$46.44	$41.57	$53.94	$73.72	$56.49	$61.89
Production Costs	$12.21	$19.08	$10.06	$12.02	$12.94	$14.87	$17.42	$8.79	$8.28	$9.44	$11.95	$9.90	$11.19
Exploration	$2.79	$3.88	$4.77	$2.83	$3.36	$3.25	$5.16	$2.32	$1.04	$1.94	$1.99	$1.66	$2.50
DD&A	$2.95	$3.30	$5.22	$6.46	$8.12	$7.58	$9.83	$14.47	$8.76	$9.17	$8.02	$8.65	$10.10
Other	$1.25	$0.00	$11.66	$16.17	$18.99	$38.87	$36.58	$25.12	$19.83	$21.59	$28.60	$23.37	$26.41
Pre-tax Earnings	$44.44	$25.56	$36.55	$60.51	$59.13	$46.30	$24.60	-$4.27	$3.66	$11.79	$23.16	$12.92	$11.69
Income Taxes	$14.67	$8.43	$12.06	$19.97	$19.46	$17.13	$11.32	$0.54	$1.96	$5.31	$9.04	$5.45	$5.61
Net Earnings	$29.78	$17.12	$24.49	$40.54	$39.67	$29.17	$13.29	-$4.81	$1.70	$6.48	$14.12	$7.47	$6.08

Source: BMO Capital Markets, Company Reports

Ecopetrol (EC - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	372.6	429.1	454.5	483.6	518.6	612.3	722.7	761.1	723.3	723.3	739.7	728.8	734.0
Liquids Production (b/d)	304,110	361,233	437,808	521,918	545,753	563,562	539,178	553,425	517,808	515,068	523,288	518,721	529,753
Total Production (boe/d)	366,210	432,753	513,562	602,511	632,192	665,616	659,635	680,274	638,356	635,616	646,575	640,183	652,091
% Gas Production	17%	17%	15%	13%	14%	15%	18%	19%	19%	19%	19%	19%	19%
% Oil Production	83%	83%	85%	87%	86%	85%	82%	81%	81%	81%	81%	81%	81%
Proven Reserves:													
Gas Reserves (bcf)	1,899.0	2,329.5	2,722.6	2,768.4	2,886.5	3,068.4	3,529.0	3,479.3	3,218.3	3,254.3	3,002.3	3,158.3	3,296.7
Oil Reserves (mmbbls)	798.7	1,123.1	1,236.1	1,370.8	1,370.0	1,433.3	1,464.8	1,238.3	1,032.3	1,087.3	1,199.3	1,106.3	1,204.4
Total Proven Reserves (mmboe)	1,115.2	1,511.4	1,689.9	1,832.2	1,851.1	1,944.7	2,053.0	1,818.2	1,568.7	1,629.7	1,699.7	1,632.7	1,753.9
% Gas Reserves	28%	26%	27%	25%	26%	26%	29%	32%	34%	33%	29%	32%	31%
% Oil Reserves	72%	74%	73%	75%	74%	74%	71%	68%	66%	67%	71%	68%	69%
Proven Reserve Life Index	8.3	9.6	9.0	8.3	8.0	8.0	8.5	7.3	6.7	7.0	7.2	7.0	7.4
Proven Reserve Additions:													
Gas Additions (bcf)	55.3	587.2	559.0	222.3	307.4	405.4	724.4	228.1	3.0	300.0	18.0	321.0	1,273.5
Oil Additions (mmbbls)	52.4	456.3	272.8	325.2	198.4	269.0	228.3	(24.5)	(17.0)	243.0	303.0	529.0	732.8
Total Additions (mmboe)	61.6	554.1	366.0	362.3	249.6	336.6	349.0	13.5	(16.5)	293.0	306.0	582.5	945.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	8.4	143.7	173.8	264.3	205.5	100.9	83.7	40.3	37.3	116.7	185.7	339.7	463.6
Acquisitions	0.0	0.0	0.0	33.9	0.0	9.3	0.0	0.0	0.0	3.3	0.0	3.3	3.3
Dispositions	-	-	-	-	-	(2.7)	-	-	-	-	-	-	-
Revisions of Estimates	53.2	410.4	192.2	64.1	44.2	229.0	265.4	-26.7	-53.8	173.0	120.3	239.5	478.1
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	13.7%	25.9%	47.5%	73.0%	82.3%	30.0%	24.0%	297.8%	-226.3%	39.8%	60.7%	58.3%	49.1%
Acquisitions	0.0%	0.0%	0.0%	9.3%	0.0%	2.8%	0.0%	0.0%	0.0%	1.1%	0.0%	0.6%	0.4%
Dispositions	0.0%	0.0%	0.0%	0.0%	0.0%	-0.8%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	86.3%	74.1%	52.5%	17.7%	17.7%	68.0%	76.0%	-197.8%	326.3%	59.0%	39.3%	41.1%	50.6%
Additions as % of Production:													
Gas	40.7%	374.9%	336.9%	125.9%	162.4%	181.4%	274.6%	82.1%	1.1%	113.6%	6.7%	40.2%	95.1%
Oil	47.2%	346.1%	170.7%	170.7%	99.6%	130.8%	116.0%	-12.1%	-9.0%	129.3%	158.6%	93.1%	75.8%
Total	46.1%	350.8%	195.2%	164.7%	108.2%	138.5%	145.0%	5.4%	-7.1%	126.3%	129.7%	83.1%	79.4%
Additions as % of Reserves:													
Gas	2.9%	25.2%	20.5%	8.0%	10.6%	13.2%	20.5%	6.6%	0.1%	9.2%	0.6%	10.2%	38.6%
Oil	6.6%	40.6%	22.1%	23.7%	14.5%	18.8%	15.6%	-2.0%	-1.6%	22.3%	25.3%	47.8%	60.8%
Total	5.5%	36.7%	21.7%	19.8%	13.5%	17.3%	17.0%	0.7%	-1.1%	18.0%	18.0%	35.7%	53.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$477.8	$591.1	$689.1	$510.1	$933.6	$1,330.5	$1,399.7	$367.8	$284.0	$367.2	$405.2	$1,056.4	$2,824.0
Development	$1,425.8	$1,902.5	$3,075.6	$4,808.3	$5,125.1	$5,204.0	$4,030.9	$2,913.4	$730.1	$1,206.2	$2,146.8	$4,083.2	$11,027.5
Acquisitions	$532.7	$1,336.4	$0.0	$986.3	$37.3	$180.3	$8.4	$130.0	$0.0	$253.4	$27.5	$280.9	$419.2
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	na	na
Total Expenditures	$2,436.2	$3,830.1	$3,764.6	$6,304.7	$6,096.0	$6,714.9	$5,439.0	$3,411.2	$1,014.2	$1,826.8	$2,579.6	$5,420.5	$14,270.7
Expenditures as % of Total (US$million):													
Exploration	19.6%	15.4%	18.3%	8.1%	15.3%	19.8%	25.7%	10.8%	28.0%	20.1%	15.7%	19.5%	19.8%
Development	58.5%	49.7%	81.7%	76.3%	84.1%	77.5%	74.1%	85.4%	72.0%	66.0%	83.2%	75.3%	77.3%
Acquisitions	21.9%	34.9%	0.0%	15.6%	0.6%	2.7%	0.2%	3.8%	0.0%	13.9%	1.1%	5.2%	2.9%
Cashflow (US$million)	$4,374.0	$3,226.1	$5,569.2	$10,336.1	$11,027.7	$8,927.3	$5,565.0	$2,397.6	$2,438.2	$3,630.9	$5,224.6	$11,293.7	$19,256.4
Cashflow (US$/boe)	$32.72	$20.42	$29.71	$47.00	$47.79	$36.75	$23.11	$9.66	$10.46	$15.65	$22.14	$16.11	$16.18
Recycle Ratio	0.8x	3.0x	2.9x	2.7x	2.0x	1.9x	1.5x	0.0x	-0.2x	2.5x	2.6x	1.7x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$30.89	$4.50	$10.29	$16.19	$24.27	$19.81	$15.56	$242.75	-$61.47	$5.43	$8.34	$8.87	$14.71
Acquisition Costs	na	na	na	$29.14	na	$19.32	na	na	na	$76.01	na	$84.26	$125.77
All Sources (incl. Revisions)	$39.54	$6.91	$10.29	$17.40	$24.42	$19.80	$15.58	$252.37	-$61.47	$6.23	$8.43	$9.31	$15.10
Exploration & Development (excl. revisions)	$225.72	$17.35	$21.67	$20.13	$29.49	$64.74	$64.91	$81.52	$27.17	$13.49	$13.75	$15.13	$29.88
Acquisition Costs	na	na	na	$29.14	na	$19.32	na	na	na	$76.01	na	$84.26	$125.77
All Sources (excl. revisions)	$288.88	$26.65	$21.67	$21.15	$29.67	$60.90	$65.01	$84.75	$27.17	$15.22	$13.89	$15.80	$30.56
Geographically Segmented Costs													
Spain	na	na	na	na	na	na	na	na	na	na	na	na	na
Latin America	$39.54	$6.91	$10.29	$17.40	$24.42	$19.80	$15.58	$252.37	-$61.47	$6.23	$8.43	$9.31	$15.10
Africa	na	na	na	na	na	na	na	na	na	na	na	na	na
Other International													

Note: Reserve estimates reported after royalties; Dollar amounts have been converted from COP to U.S. Dollars at average annual exchange rates
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Ecopetrol (EC - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	12.21	19.08	10.06	12.02	12.94	14.87	17.42	8.79	8.28	9.44	9.44	9.90	11.19
Exploration Expense	2.79	3.88	4.77	2.83	3.36	3.25	5.16	2.32	1.04	1.94	1.94	1.66	2.50
G&A/Other	1.25	-	11.66	16.17	18.99	38.87	36.58	25.12	19.83	21.59	21.59	23.37	26.41
F&D Costs	39.54	6.91	10.29	17.40	24.42	19.80	15.58	22.18	28.51	6.23	6.23	22.18	21.29
Return on Capital	20.64	4.15	5.81	9.08	12.29	9.90	8.32	10.18	12.05	2.76	2.76	9.69	9.82
Income Taxes	10.17	2.04	2.86	4.47	6.03	5.82	7.09	6.41	13.84	2.26	2.26	7.08	9.07
Breakeven Oil Price	86.60	36.07	45.45	61.97	78.03	92.50	90.15	75.00	83.55	44.24	44.24	73.87	80.28
Quality Differential	27.02	4.58	4.11	1.35	(3.80)	(15.37)	(7.68)	0.07	(2.07)	(6.10)	(6.10)	(6.84)	(5.62)
Required WTI Price	113.62	40.66	49.57	63.32	74.23	77.13	82.47	75.08	81.47	38.13	38.13	67.04	74.66

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Operating Costs	12.21	19.08	10.06	12.02	12.94	14.87	17.42	8.79	8.28	9.44	9.44	9.90	11.19
Exploration Expense	2.79	3.88	4.77	2.83	3.36	3.25	5.16	2.32	1.04	1.94	1.94	1.66	2.50
G&A/Other	2.95	3.30	5.22	6.46	8.12	7.58	9.83	14.47	8.76	9.17	9.17	8.65	10.10
F&D Costs	39.54	6.91	10.29	17.40	24.42	19.80	15.58	22.18	28.51	6.23	6.23	22.18	21.29
Return on Capital	20.64	4.15	5.81	9.08	12.29	9.90	8.32	10.18	12.05	2.76	2.76	9.69	9.82
Income Taxes	10.17	2.04	2.86	4.47	6.03	5.82	7.09	6.41	13.84	2.26	2.26	7.08	9.07
Breakeven Oil Price	88.29	39.37	39.01	52.26	67.16	61.21	63.40	64.35	72.48	31.81	31.81	59.15	63.97
Quality Differential	27.02	4.58	4.11	1.35	(3.80)	(15.37)	(7.68)	0.07	(2.07)	(6.10)	(6.10)	(6.84)	(5.62)
Required WTI Price	115.31	43.96	43.12	53.61	63.36	45.84	55.72	64.42	70.41	25.71	25.71	52.32	58.35

Source: BMO Capital Markets, Company Reports

Ecopetrol (EC - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	46.58	21.34	24.56	25.61	31.28	40.22	28.00	28.80	28.80	31.29	40.29	33.50	33.71
Exploration Expense	9.48	10.12	5.79	6.65	6.82	11.90	7.40	3.64	3.64	6.43	6.70	5.61	7.24
G&A/Other	-	24.74	33.04	37.60	81.74	84.47	80.03	68.98	68.98	71.56	96.43	79.06	80.35
F&D Costs (1-Year)	7.90	12.58	18.79	28.38	23.27	20.84	85.60	29.68	29.68	6.85	8.48	9.79	17.82
Return on Capital	4.38	6.40	8.89	12.94	10.62	10.14	42.24	10.99	10.99	2.78	3.53	3.87	7.41
Income Taxes	2.16	3.15	4.38	6.35	6.24	8.64	26.60	12.62	12.62	2.28	2.26	2.83	6.82
Breakeven Oil Price	**70.50**	**78.33**	**95.43**	**117.53**	**159.97**	**176.22**	**269.87**	**154.70**	**154.70**	**121.18**	**157.69**	**134.65**	**153.36**
Quality Differential	5.19	4.60	1.49	(4.19)	(17.30)	(8.86)	0.09	(2.41)	(2.41)	(6.78)	(14.06)	(7.75)	(6.40)
Required WTI Price	**75.70**	**82.94**	**96.93**	**113.35**	**142.67**	**167.37**	**269.95**	**152.29**	**152.29**	**114.41**	**143.64**	**126.90**	**146.95**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	46.58	21.34	24.56	25.61	31.28	40.22	28.00	28.80	28.80	31.29	40.29	33.50	33.71
Exploration Expense	9.48	10.12	5.79	6.65	6.82	11.90	7.40	3.64	3.64	6.43	6.70	5.61	7.24
G&A/Other	-	24.74	33.04	37.60	81.74	84.47	80.03	68.98	68.98	71.56	96.43	79.06	80.35
F&D Costs (1-Year)	12.75	10.38	24.99	20.11	30.22	15.72	42.50	15.58	15.58	12.95	15.79	14.77	20.51
Return on Capital	7.04	5.28	11.81	9.17	13.76	7.60	17.41	5.77	5.77	5.25	6.60	5.88	8.58
Income Taxes	3.47	2.60	5.82	4.50	8.08	6.47	10.96	6.63	6.63	4.31	4.22	4.30	7.90
Breakeven Oil Price	**79.31**	**74.46**	**106.00**	**103.66**	**171.91**	**166.39**	**186.29**	**129.39**	**129.39**	**131.79**	**170.02**	**143.12**	**158.28**
Quality Differential	5.19	4.60	1.49	(4.19)	(17.30)	(8.86)	0.09	(2.41)	(2.41)	(6.78)	(14.06)	(7.75)	(6.40)
Required WTI Price	**84.50**	**79.06**	**107.49**	**99.47**	**154.61**	**157.53**	**186.38**	**126.98**	**126.98**	**125.01**	**155.96**	**135.37**	**151.88**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

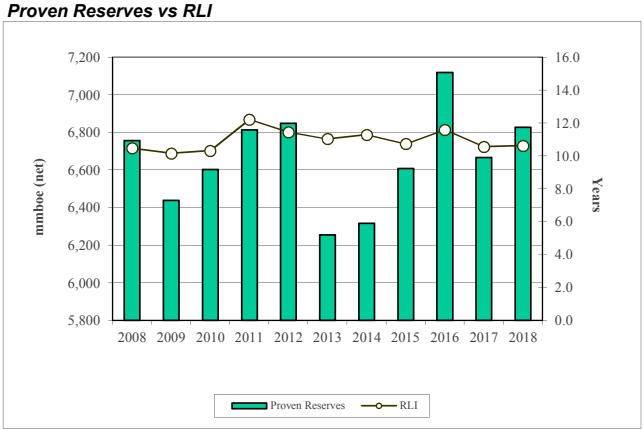
Eni S.P.A. (ENI - XMIL)

US$, net

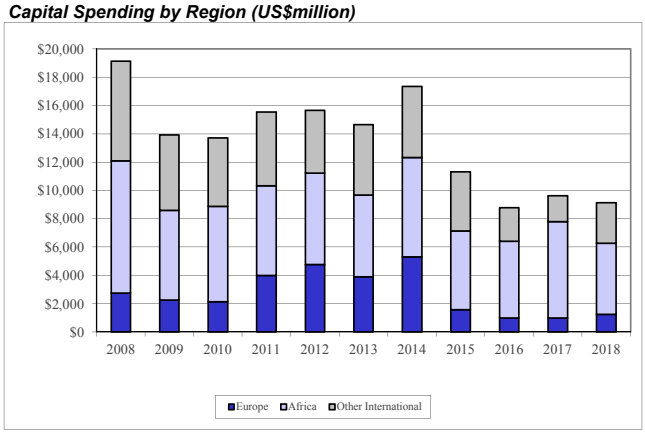
- Eni yielded results from operations of $8.63/boe in 2018 versus results of $4.98/boe in 2017.
- The company's F&D cost decreased to $10.61/boe from $20.33/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $8.12/boe versus $19.99/boe, likewise the costs for PD reserves decreased to $8.52/boe in 2018 from $18.91/boe.
- Eni's 2018 operations imply a required Brent breakeven oil price of $36.28/boe on total proved reserves, while its PD costs imply a Brent breakeven oil price of $37.26/boe.
- The company reported ROCE of 7.7% 2018.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Euros to U.S. Dollars using average annual exchange rates.

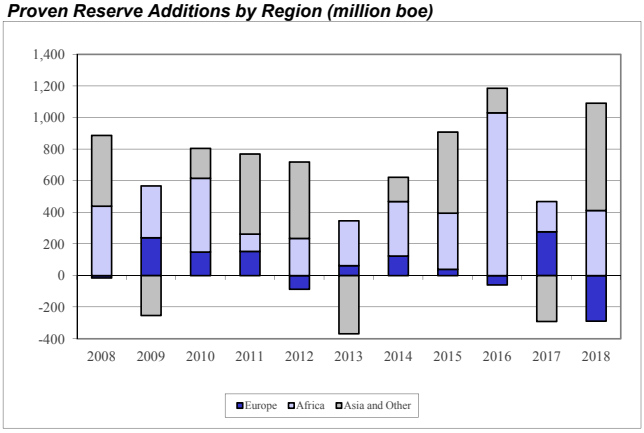
Proven Reserves vs RLI



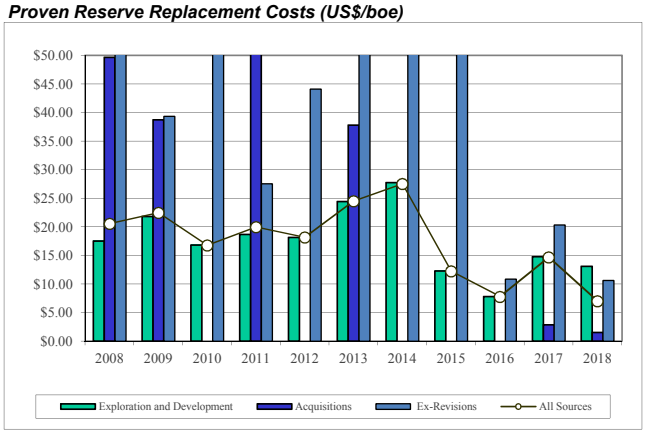
Capital Spending by Region (US$million)



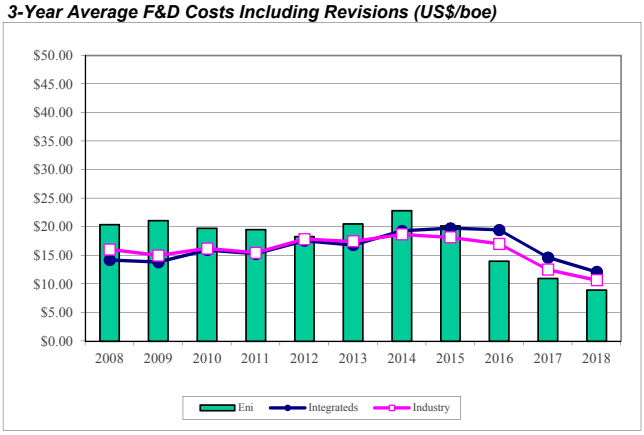
Proven Reserve Additions by Region (million boe)



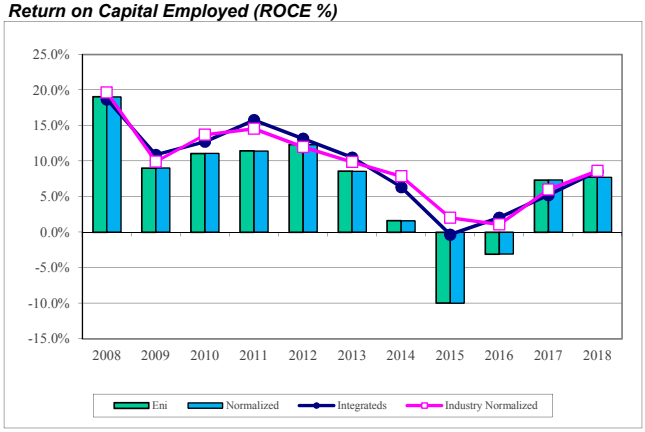
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

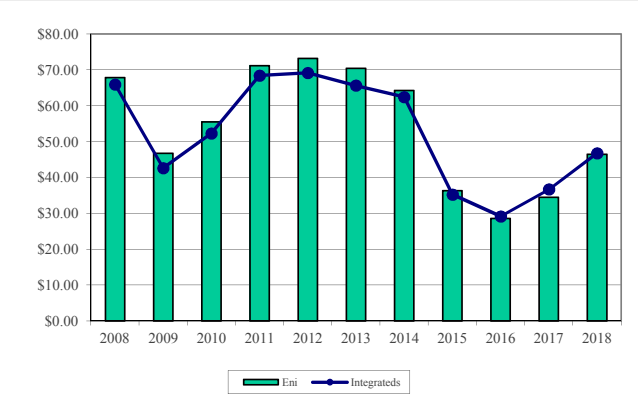
See pages F1 to F4 for analyst coverage.

Eni S.P.A. (ENI - XMIL)

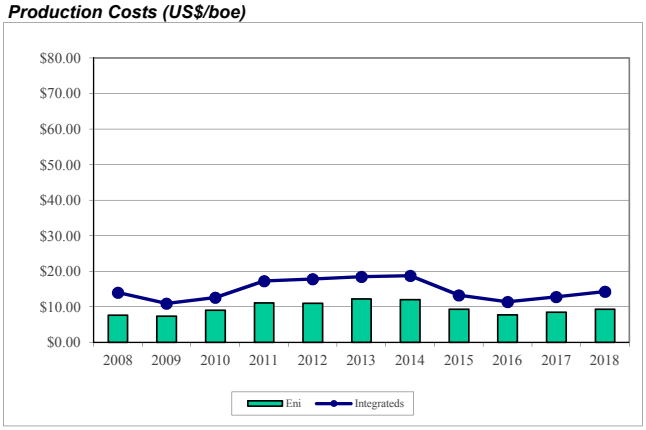
US$/boe, net

Worldwide

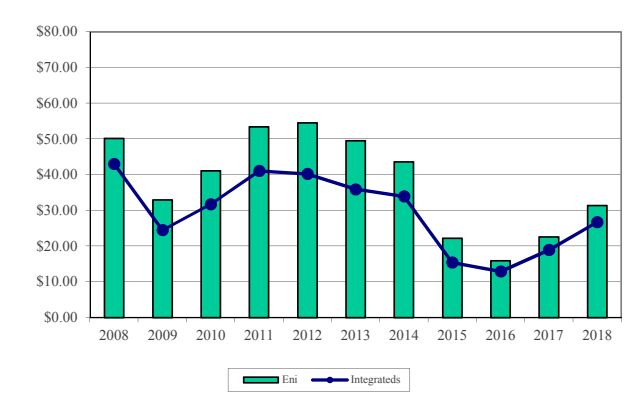
Upstream Net Revenue (US$/boe)



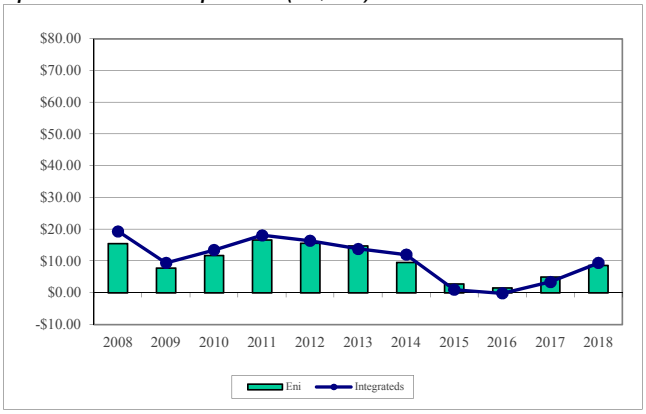
Production Costs (US$/boe)



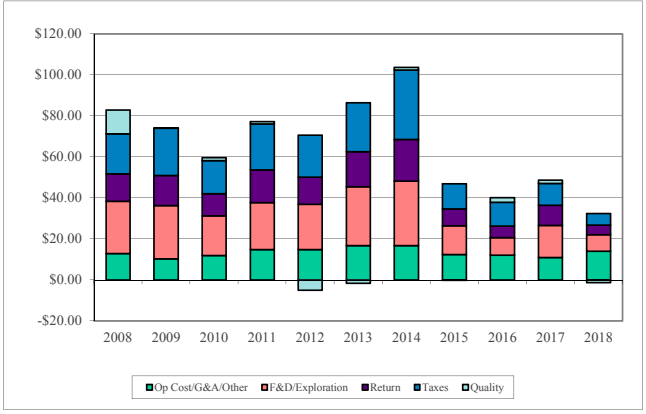
Upstream Operating Earnings (US$/boe)



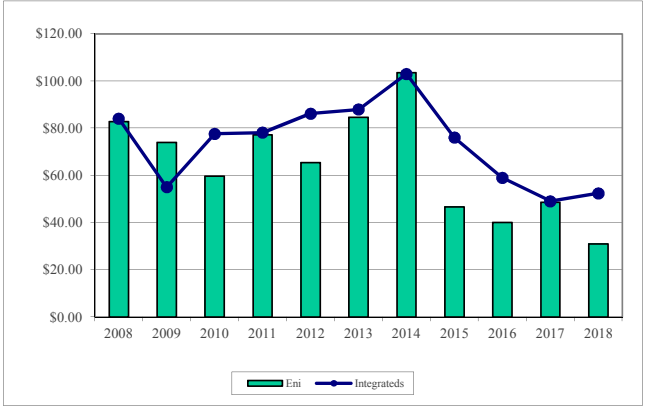
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



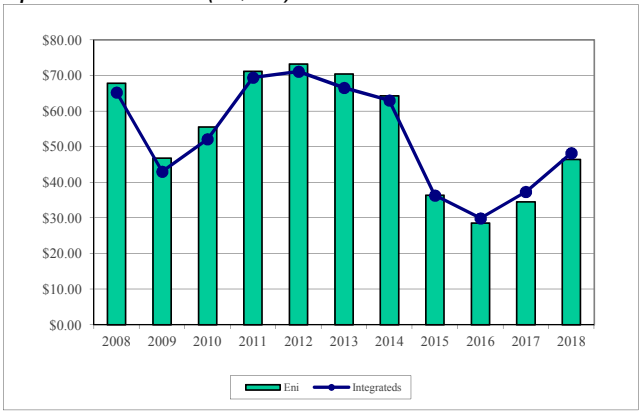
Source: BMO Capital Markets, Company Reports

Eni S.P.A. (ENI - XMIL)

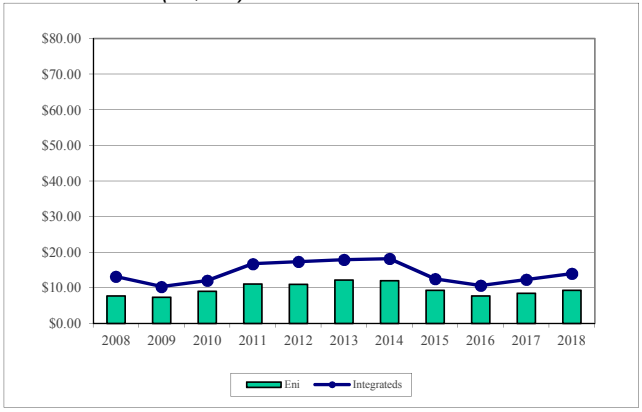
US$/boe, net

Total International

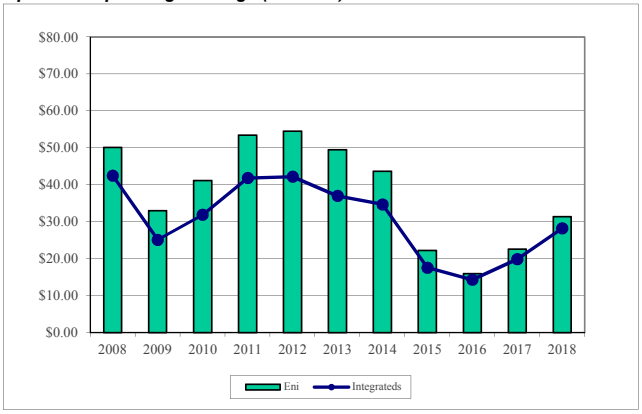
Upstream Net Revenue (US$/boe)



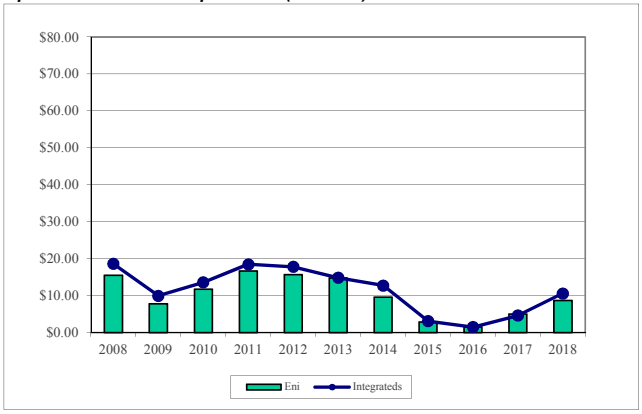
Production Costs (US$/boe)



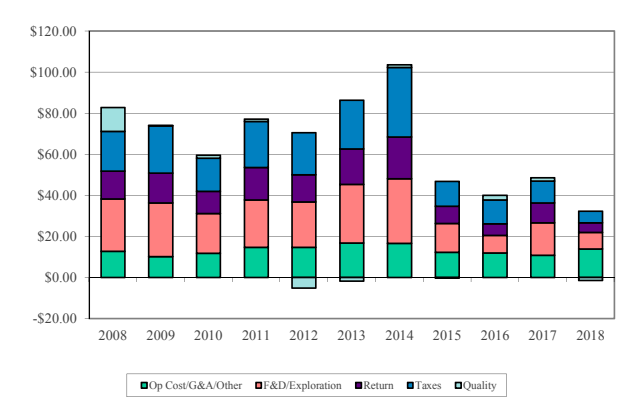
Upstream Operating Earnings (US$/boe)



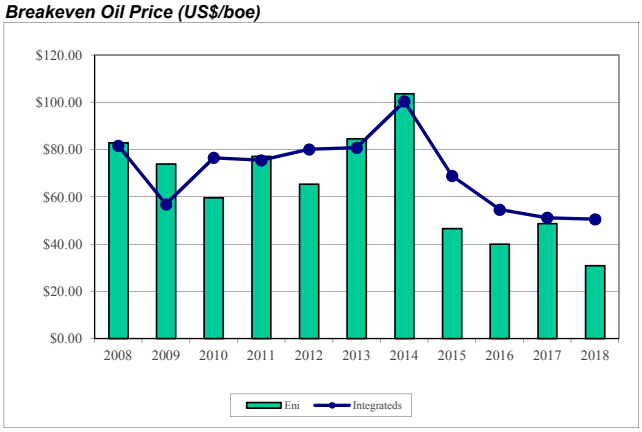
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Breakeven Oil Price (US$/boe)



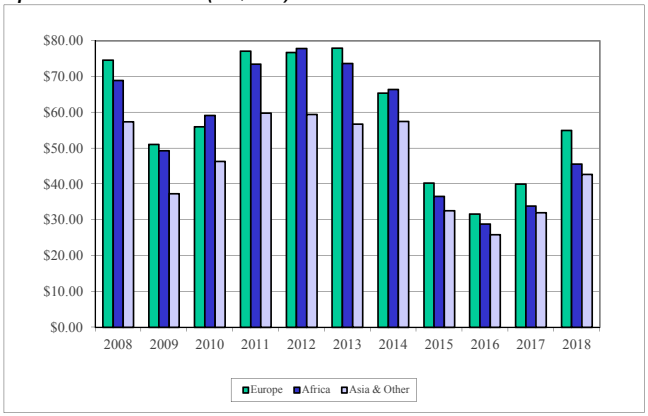
Source: BMO Capital Markets, Company Reports

Eni S.P.A. (ENI - XMIL)

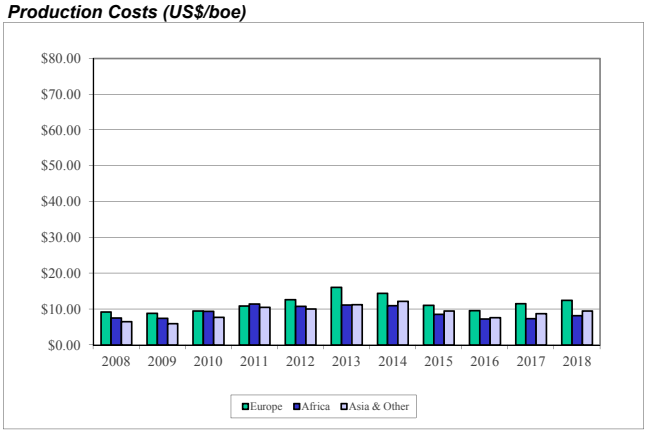
US$/boe, net

International Segments

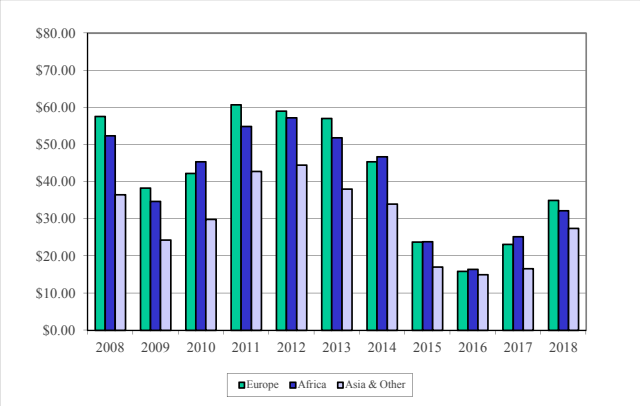
Upstream Net Revenue (US$/boe)



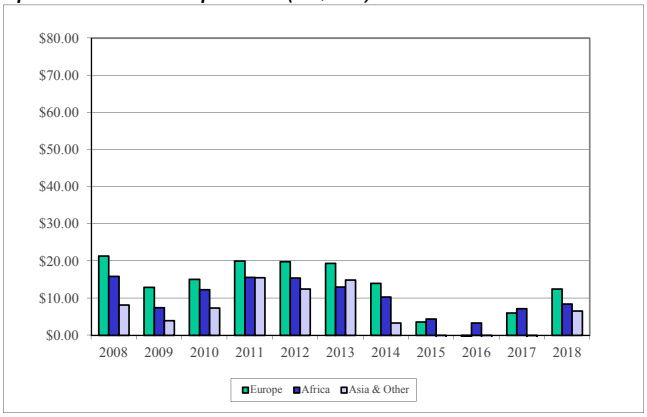
Production Costs (US$/boe)



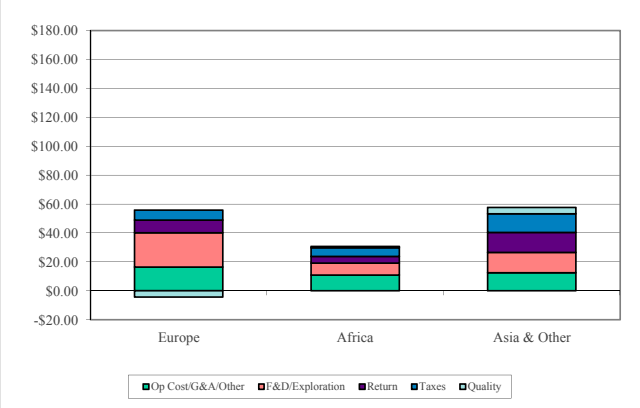
Upstream Operating Earnings (US$/boe)



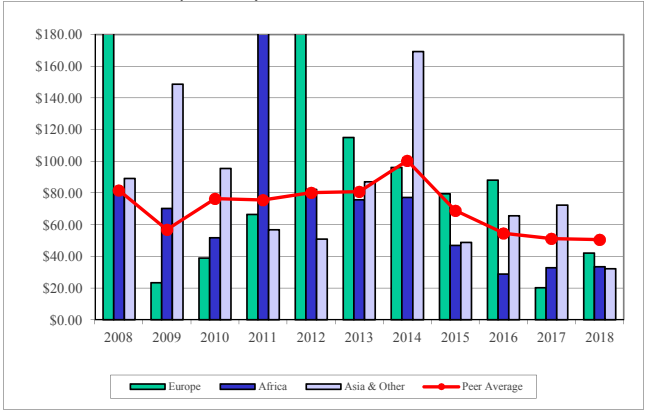
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Breakeven Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Eni S.P.A. (ENI - XMIL)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	49,017	33,199	39,132	40,553	46,143	41,533	37,848	23,799	17,809	22,063	30,409
Midstream / Downstream Revenue	145,778	107,940	120,829	147,155	153,622	143,955	138,087	79,960	67,563	83,836	97,442
Other	(34,630)	(23,414)	(27,814)	(33,560)	(34,376)	(33,118)	(29,997)	(28,553)	(23,648)	(30,281)	(38,291)
Total Revenue and Other Income	160,164	117,725	132,147	154,149	165,389	152,369	145,937	75,206	61,724	75,617	89,560
Crude Oil and Product Purchases	86,376	58,952	67,219	86,401	96,087	95,162	84,546	42,652	32,475	42,966	50,551
Production and Transportation Expenses	23,411	22,439	24,498	23,879	24,161	22,047	27,978	16,185	15,938	15,720	14,700
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	2,388	2,355	2,183	1,096	428	593	449
General and Administrative	5,891	5,832	6,348	6,613	5,990	7,042	7,090	3,084	3,314	3,335	3,653
Depreciation, Depletion and Amortization	12,390	12,222	11,782	11,554	12,266	12,515	13,246	10,718	8,367	8,456	8,254
Interest, net	313	763	791	1,416	1,358	1,224	1,662	1,650	423	2,217	822
Other	3,463	678	(434)	(1,445)	1,791	(6,527)	(522)	4,240	(209)	(5,404)	(808)
Earnings Before Income Tax	28,320	16,840	21,943	25,731	21,348	18,550	9,754	(4,419)	987	7,734	11,938
Current Income Taxes	17,781	11,432	12,907	14,384	14,691	11,584	8,349	4,767	3,320	4,544	6,343
Future Income Taxes	(3,522)	(2,009)	(759)	480	302	379	276	(1,273)	(1,177)	(626)	709
Total Income Taxes	14,259	9,424	12,148	14,864	14,993	11,963	8,625	3,494	2,143	3,918	7,052
Minority Interest	-	-	-	-	4,799	-	-	-	(8)	(3)	(13)
Earnings From Continuing Operations	14,062	7,416	9,795	10,866	11,153	6,588	1,129	(7,913)	(1,163)	3,813	4,874
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	(2,499)	(457)	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	14,062	7,416	9,795	10,866	11,153	6,588	1,129	(10,412)	(1,621)	3,813	4,874
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	14,062	7,416	9,795	10,866	11,153	6,588	1,129	(10,412)	(1,621)	3,813	4,874

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	14,062	7,416	9,795	10,866	6,354	6,588	1,129	(10,412)	(1,621)	3,813	4,874
Charges and Credits Not Impacting Cash	12,836	10,129	12,738	13,880	17,171	15,310	14,680	14,803	6,729	8,235	10,104
Other	1,921	(364)	(1,217)	(1,958)	(3,625)	(7,579)	918	3,959	1,474	(2,118)	(752)
Cash Flow From Operations	28,819	17,182	21,316	22,788	19,899	14,319	16,728	8,350	6,583	9,930	14,225
Change in Working Capital / Other	3,254	(1,649)	(1,823)	(2,760)	(3,990)	328	3,347	4,865	1,911	1,502	1,895
Net Cash From Operating Activities	32,073	15,533	19,494	20,028	15,909	14,647	20,074	13,215	8,493	11,432	16,120
Total Capital Expenditures	(21,423)	(19,102)	(18,400)	(18,713)	(17,383)	(17,004)	(16,261)	(12,830)	(10,161)	(9,809)	(10,771)
Acquisitions, net	(4,472)	4,659	647	760	4,299	5,189	92	591	(380)	6,112	1,237
Other	947	141	553	2,331	2,422	(2,772)	4,289	(170)	5,623	(560)	633
Net Cash From Investing Activities	(24,948)	(14,303)	(17,200)	(15,622)	(10,662)	(14,588)	(11,881)	(12,409)	(4,918)	(4,258)	(8,901)
Net Change in Debt	1,442	5,358	3,014	1,537	7,648	2,278	(834)	2,360	(848)	(1,935)	133
Net Change in Common Stock	(1,174)	13	49	24	37	-	(505)	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(7,223)	(5,811)	(4,805)	(5,146)	(4,938)	(5,246)	(5,322)	(3,838)	(3,189)	(3,254)	(3,493)
Other	(437)	(1,209)	(682)	(914)	78	(364)	(61)	(884)	974	(3)	245
Net Cash From Financing Activities	(7,393)	(1,650)	(2,424)	(4,498)	2,825	(3,332)	(6,722)	(2,361)	(3,063)	(5,192)	(3,115)
Effect of Exchange Rate on Cash	10	(42)	52	24	(15)	(56)	101	(14)	2	(81)	21
Net Increase/(Decrease) in Cash	(257)	(462)	(78)	(68)	8,057	(3,328)	1,572	(1,570)	515	1,901	4,125
Cash and Equivalents, Beginning of Year	2,444	2,186	1,725	1,646	1,578	9,635	6,307	7,879	6,309	6,824	8,724
Cash and Equivalents, End of Year	2,186	1,725	1,646	1,578	9,635	6,307	7,879	6,309	6,824	8,724	12,849

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

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Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	54,622	43,420	46,314	53,190	62,682	67,035	72,282	44,389	42,031	41,169	46,590
Net Property, Plant and Equipment	87,028	88,122	89,421	102,463	81,617	84,706	95,605	70,826	78,362	79,995	83,620
Other Assets	29,875	32,393	39,196	43,409	35,279	32,038	26,356	34,433	17,468	8,703	9,611
Total Assets	171,525	163,935	174,931	199,062	179,578	183,779	194,243	149,649	137,861	129,866	139,821
Total Current Liabilities	52,008	42,526	46,229	49,620	43,706	43,665	49,387	32,824	30,657	27,950	33,514
Long-term Debt	20,492	25,196	26,937	32,171	24,793	27,731	25,662	21,530	22,763	22,802	23,721
Deferred Income Taxes	8,448	6,845	6,532	9,915	8,668	8,967	10,425	7,684	7,380	6,667	4,643
Other Liabilities and Deferred Credits	19,211	19,554	21,301	23,253	21,763	22,315	26,121	28,026	18,300	18,119	17,616
Total Liabilities	100,158	94,121	101,000	114,960	98,929	102,679	111,595	90,064	79,099	75,538	79,494
Minority Interests	5,994	5,549	5,999	6,853	4,519	3,771	3,262	2,127	54	55	67
Common Shares	5,892	5,586	5,313	5,577	5,150	5,320	5,321	4,446	4,433	4,526	4,731
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	69,422	68,103	65,602	66,157	60,277	63,491	60,234	43,020	41,467	42,825	48,356
Other / Comprehensive Income (Loss)	(9,941)	(9,425)	(2,984)	5,515	10,702	8,518	13,832	9,991	12,807	6,922	7,173
Total Shareholders' Equity	65,373	64,265	67,932	77,249	76,130	77,329	79,386	57,457	58,707	54,273	60,260
Total Liabilities and Shareholders' Equity	171,525	163,935	174,931	199,062	179,578	183,779	194,243	149,649	137,861	129,866	139,821
Return on Capital Employed (ROCE)	**19.0%**	**9.0%**	**11.1%**	**11.4%**	**12.3%**	**8.6%**	**1.6%**	**-10.0%**	**-3.1%**	**7.3%**	**7.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	43,776	29,663	35,546	39,658	43,764	39,915	35,956	22,400	17,583	21,338	27,994	66,915	125,271
Production Costs	4,967	4,687	5,780	6,175	6,573	6,920	6,745	5,719	4,777	5,221	5,592	15,591	28,055
Exploration	3,098	2,221	1,650	1,661	2,388	2,355	2,183	1,096	428	597	687	1,712	4,991
DD&A	8,052	8,125	7,756	7,324	8,684	8,105	10,096	9,377	6,920	7,572	7,530	22,023	41,496
G&A/Other	3,338	1,838	1,784	2,058	2,229	2,580	2,609	1,897	2,594	1,544	2,800	6,938	11,445
Pre-tax Results Of Operations	24,322	12,792	18,576	22,440	23,890	19,955	14,323	4,311	2,864	6,404	11,384	20,651	39,285
Income Taxes	14,323	7,836	11,068	13,154	14,541	11,584	8,950	2,570	1,916	3,324	6,182	11,422	22,942
Results Of Operations	9,998	4,956	7,507	9,286	9,349	8,371	5,373	1,741	948	3,079	5,201	9,228	16,343

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Consolidated													
Net Revenue	43,776	29,663	35,546	39,658	43,764	39,915	35,956	22,400	17,583	21,338	27,994	66,915	125,271
Production Costs	4,967	4,687	5,780	6,175	6,573	6,920	6,745	5,719	4,777	5,221	5,592	15,591	28,055
Exploration	3,098	2,221	1,650	1,661	2,388	2,355	2,183	1,096	428	597	687	1,712	4,991
DD&A	8,052	8,125	7,756	7,324	8,684	8,105	10,096	9,377	6,920	7,572	7,530	22,023	41,496
G&A/Other	3,338	1,838	1,784	2,058	2,229	2,580	2,609	1,897	2,594	1,544	2,800	6,938	11,445
Pre-tax Results Of Operations	24,322	12,792	18,576	22,440	23,890	19,955	14,323	4,311	2,864	6,404	11,384	20,651	39,285
Income Taxes	14,323	7,836	11,068	13,154	14,541	11,584	8,950	2,570	1,916	3,324	6,182	11,422	22,942
Results Of Operations	9,998	4,956	7,507	9,286	9,349	8,371	5,373	1,741	948	3,079	5,201	9,228	16,343

Notes: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

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Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$67.82	$46.79	$55.53	$71.14	$73.20	$70.44	$64.25	$36.37	$28.61	$34.52	$46.46	$36.66	$41.64
Production Costs	$7.69	$7.39	$9.03	$11.08	$10.99	$12.21	$12.05	$9.29	$7.77	$8.45	$9.28	$8.51	$9.31
Exploration	$4.80	$3.50	$2.58	$2.98	$3.99	$4.16	$3.90	$1.78	$0.70	$0.97	$1.14	$0.94	$1.65
DD&A	$12.47	$12.82	$12.11	$13.14	$14.53	$14.30	$18.04	$15.23	$11.26	$12.25	$12.50	$12.01	$13.76
G&A/Other	$5.17	$2.90	$2.79	$3.69	$3.73	$4.55	$4.66	$3.08	$4.22	$2.50	$4.65	$3.79	$3.81
Pre-tax Results Of Operations	$37.68	$20.18	$29.02	$40.25	$39.96	$35.21	$25.59	$7.00	$4.66	$10.36	$18.89	$11.41	$13.11
Income Taxes	$22.19	$12.36	$17.29	$23.60	$24.32	$20.44	$15.99	$4.17	$3.12	$5.38	$10.26	$6.30	$7.65
Results Of Operations	$15.49	$7.82	$11.73	$16.66	$15.64	$14.77	$9.60	$2.83	$1.54	$4.98	$8.63	$5.11	$5.47

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$67.82	$46.79	$55.53	$71.14	$73.20	$70.44	$64.25	$36.37	$28.61	$34.52	$46.46	$36.66	$41.64
Production Costs	$7.69	$7.39	$9.03	$11.08	$10.99	$12.21	$12.05	$9.29	$7.77	$8.45	$9.28	$8.51	$9.31
Exploration	$4.80	$3.50	$2.58	$2.98	$3.99	$4.16	$3.90	$1.78	$0.70	$0.97	$1.14	$0.94	$1.65
DD&A	$12.47	$12.82	$12.11	$13.14	$14.53	$14.30	$18.04	$15.23	$11.26	$12.25	$12.50	$12.01	$13.76
G&A/Other	$5.17	$2.90	$2.79	$3.69	$3.73	$4.55	$4.66	$3.08	$4.22	$2.50	$4.65	$3.79	$3.81
Pre-tax Results Of Operations	$37.68	$20.18	$29.02	$40.25	$39.96	$35.21	$25.59	$7.00	$4.66	$10.36	$18.89	$11.41	$13.11
Income Taxes	$22.19	$12.36	$17.29	$23.60	$24.32	$20.44	$15.99	$4.17	$3.12	$5.38	$10.26	$6.30	$7.65
Results Of Operations	$15.49	$7.82	$11.73	$16.66	$15.64	$14.77	$9.60	$2.83	$1.54	$4.98	$8.63	$5.11	$5.47

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$74.60	$51.04	$56.00	$77.14	$76.70	$77.98	$65.35	$40.25	$31.61	$40.03	$54.99	$42.18	$46.80
Production Costs	$9.17	$8.85	$9.50	$10.84	$12.67	$16.08	$14.45	$11.11	$9.57	$11.56	$12.44	$11.18	$11.87
Exploration	$3.31	$1.46	$1.41	$1.49	$1.86	$3.59	$2.64	$2.19	$0.71	$1.48	$1.13	$1.10	$1.66
DD&A	$12.60	$13.09	$11.55	$12.97	$14.65	$16.59	$19.58	$18.03	$17.76	$13.05	$9.71	$13.52	$15.76
G&A/Other	$4.56	$2.45	$2.86	$4.16	$3.23	$1.30	$2.88	$3.19	$5.46	$3.89	$6.52	$5.30	$4.34
Pre-tax Results Of Operations	$44.97	$25.19	$30.68	$47.68	$44.29	$40.43	$25.80	$5.73	-$1.89	$10.05	$25.20	$11.08	$13.16
Income Taxes	$23.67	$12.29	$15.68	$27.76	$24.47	$21.05	$11.88	$2.16	-$1.50	$4.04	$12.74	$5.07	$5.95
Results Of Operations	$21.29	$12.90	$15.00	$19.92	$19.82	$19.37	$13.91	$3.58	-$0.39	$6.02	$12.46	$6.00	$7.22

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$68.97	$49.28	$59.15	$73.50	$77.87	$73.67	$66.40	$36.57	$28.84	$33.89	$45.54	$36.18	$41.72
Production Costs	$7.51	$7.41	$9.39	$11.48	$10.75	$11.18	$10.99	$8.55	$7.22	$7.33	$8.15	$7.57	$8.39
Exploration	$4.01	$3.23	$2.07	$3.14	$4.52	$4.13	$3.91	$1.66	$0.74	$0.86	$0.38	$0.66	$1.45
DD&A	$9.40	$10.31	$10.55	$11.22	$11.38	$13.18	$14.12	$12.58	$7.95	$11.01	$12.80	$10.63	$11.65
G&A/Other	$5.11	$3.93	$2.30	$4.05	$5.46	$6.55	$4.84	$2.53	$4.47	$0.59	$4.85	$3.28	$3.41
Pre-tax Results Of Operations	$42.93	$24.39	$34.83	$43.62	$45.76	$38.63	$32.54	$11.24	$8.45	$14.11	$19.36	$14.05	$16.82
Income Taxes	$27.06	$17.00	$22.59	$28.03	$30.37	$25.65	$22.27	$6.86	$5.21	$7.00	$10.92	$7.74	$10.18
Results Of Operations	$15.87	$7.39	$12.24	$15.59	$15.39	$12.97	$10.27	$4.39	$3.24	$7.12	$8.43	$6.31	$6.63

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia & Other													
Net Revenue	$57.41	$37.33	$46.32	$59.84	$59.46	$56.73	$57.51	$32.58	$25.88	$32.02	$42.65	$33.79	$37.37
Production Costs	$6.52	$5.95	$7.69	$10.48	$10.05	$11.21	$12.21	$9.52	$7.64	$8.78	$9.52	$8.68	$9.41
Exploration	$8.42	$6.05	$4.94	$4.21	$4.71	$4.70	$5.23	$1.73	$0.59	$0.84	$2.74	$1.43	$2.10
DD&A	$19.99	$17.96	$16.45	$17.37	$21.57	$14.86	$26.50	$19.26	$13.67	$14.51	$13.74	$13.97	$17.00
G&A/Other	$5.99	$1.10	$3.89	$2.45	$0.24	$2.86	$6.11	$4.32	$2.74	$5.86	$2.96	$3.83	$4.29
Pre-tax Results Of Operations	$16.49	$6.28	$13.35	$25.34	$22.89	$23.11	$7.46	-$2.25	$1.23	$2.02	$13.68	$5.88	$4.58
Income Taxes	$8.39	$2.41	$6.06	$9.86	$10.43	$8.25	$4.21	-$0.63	$1.98	$2.65	$7.21	$4.04	$3.17
Results Of Operations	$8.10	$3.87	$7.30	$15.47	$12.45	$14.86	$3.25	-$1.62	-$0.74	-$0.62	$6.47	$1.84	$1.41

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

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Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	4,430.1	4,372.6	4,539.7	4,084.9	4,517.8	4,317.8	4,219.2	4,682.2	4,824.7	5,260.3	5,260.3	5,115.1	4,849.3
Liquids Production (b/d)	1,030,137	1,008,219	997,260	846,575	884,932	832,877	830,137	906,849	879,452	852,055	884,932	872,146	870,685
Total Production (boe/d)	1,768,493	1,736,986	1,753,881	1,527,397	1,637,900	1,552,511	1,533,333	1,687,215	1,683,562	1,728,767	1,761,644	1,724,658	1,678,904
% Gas Production	42%	42%	43%	45%	46%	46%	46%	46%	48%	51%	50%	49%	48%
% Oil Production	58%	58%	57%	55%	54%	54%	54%	54%	52%	49%	50%	51%	52%
Proven Reserves:													
Gas Reserves (bcf)	20,229.0	17,850.0	17,882.0	20,282.0	20,957.0	18,168.0	18,545.0	18,295.0	22,333.0	19,471.0	19,723.0	20,509.0	19,673.4
Oil Reserves (mmbbls)	3,385.0	3,463.0	3,623.0	3,434.0	3,356.0	3,227.0	3,226.0	3,559.0	3,398.0	3,422.0	3,540.0	3,453.3	3,429.0
Total Proven Reserves (mmboe)	6,756.5	6,438.0	6,603.3	6,814.3	6,848.8	6,255.0	6,316.8	6,608.2	7,120.2	6,667.2	6,827.2	6,871.5	6,707.9
% Gas Reserves	50%	46%	45%	50%	51%	48%	49%	46%	52%	49%	48%	50%	49%
% Oil Reserves	50%	54%	55%	50%	49%	52%	51%	54%	48%	51%	52%	50%	51%
Proven Reserve Life Index	10.5	10.2	10.3	12.2	11.5	11.0	11.3	10.7	11.6	10.6	10.6	10.9	11.0
Proven Reserve Additions:													
Gas Additions (bcf)	2,275.0	-783.0	1,689.0	3,891.0	2,324.0	-1,213.0	1,917.0	1,459.0	5,799.0	-942.0	2,172.0	7,029.0	10,405.0
Oil Additions (mmbbls)	492.0	446.0	524.0	120.0	245.0	181.0	302.0	664.0	160.0	335.0	441.0	936.0	1,902.0
Total Additions (mmboe)	871.2	315.5	805.5	768.5	632.3	-21.2	621.5	907.2	1,126.5	178.0	803.0	2,107.5	3,636.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	104.3	329.0	260.7	562.8	355.0	109.3	122.5	64.3	810.0	471.5	175.3	1,456.8	1,643.7
Acquisitions	89.3	24.8	0.0	1.8	0.0	3.8	4.5	0.0	0.0	2.0	687.5	689.5	694.0
Dispositions	(58.7)	(303.5)	(11.3)	(9.0)	(229.0)	(619.0)	(8.2)	(17.3)	-	(476.7)	(505.8)	(982.5)	(1,008.0)
Revisions of Estimates	736.2	265.2	556.2	212.8	506.3	484.7	502.7	860.2	316.5	181.2	446.0	943.7	2,306.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	12.0%	104.3%	32.4%	73.2%	56.1%	-516.5%	19.7%	7.1%	71.9%	264.9%	21.8%	69.1%	45.2%
Acquisitions	10.3%	7.9%	0.0%	0.2%	0.0%	-18.1%	0.7%	0.0%	0.0%	1.1%	85.6%	32.7%	19.1%
Dispositions	-6.7%	-96.2%	-1.4%	-1.2%	-36.2%	2924.4%	-1.3%	-1.9%	0.0%	-267.8%	-63.0%	-46.6%	-27.7%
Revisions of Estimates	84.5%	84.0%	69.0%	27.7%	80.1%	-2289.8%	80.9%	94.8%	28.1%	101.8%	55.5%	44.8%	63.4%
Additions as % of Production:													
Gas	140.7%	-49.1%	101.9%	261.0%	140.9%	-77.0%	124.5%	85.4%	329.3%	-49.1%	113.1%	125.5%	117.6%
Oil	130.9%	121.2%	144.0%	38.8%	75.9%	59.5%	99.7%	200.6%	49.8%	107.7%	136.5%	98.0%	119.7%
Total	135.0%	49.8%	125.8%	137.8%	105.8%	-3.7%	111.0%	147.3%	183.3%	28.2%	124.9%	111.6%	118.7%
Additions as % of Reserves:													
Gas	11.2%	-4.4%	9.4%	19.2%	11.1%	-6.7%	10.3%	8.0%	26.0%	-4.8%	11.0%	34.3%	52.9%
Oil	14.5%	12.9%	14.5%	3.5%	7.3%	5.6%	9.4%	18.7%	4.7%	9.8%	12.5%	27.1%	55.5%
Total	12.9%	4.9%	12.2%	11.3%	9.2%	-0.3%	9.8%	13.7%	15.8%	2.7%	11.8%	30.7%	54.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$3,327.8	$1,770.1	$1,402.3	$1,722.6	$2,417.7	$2,336.7	$1,905.1	$928.1	$702.9	$910.8	$1,009.9	$2,623.6	$5,456.9
Development	$11,372.2	$11,195.0	$12,308.6	$12,767.2	$13,185.3	$12,177.9	$15,448.4	$10,392.8	$8,084.9	$8,711.0	$7,114.3	$23,910.3	$49,751.4
Acquisitions	$4,434.1	$961.0	$0.0	$1,050.0	$55.3	$144.8	$0.0	$0.0	$2.2	$5.6	$1,026.5	$1,034.3	$1,034.3
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$19,134.2	$13,926.1	$13,710.8	$15,539.8	$15,658.3	$14,659.5	$17,353.5	$11,320.9	$8,790.0	$9,627.4	$9,150.7	$27,568.2	$56,242.5
Expenditures as % of Total:													
Exploration	17.4%	12.7%	10.2%	11.1%	15.4%	15.9%	11.0%	8.2%	8.0%	9.5%	11.0%	9.5%	9.7%
Development	59.4%	80.4%	89.8%	82.2%	84.2%	83.1%	89.0%	91.8%	92.0%	90.5%	77.7%	86.7%	88.5%
Acquisitions	23.2%	6.9%	0.0%	6.8%	0.4%	1.0%	0.0%	0.0%	0.0%	0.1%	11.2%	3.8%	1.8%
Cashflow (US$million)	$21,148.2	$15,301.5	$16,913.3	$18,270.6	$20,421.6	$18,830.8	$17,651.7	$12,213.8	$8,296.6	$11,482.6	$14,319.6	$34,098.7	$63,964.3
Cashflow (US$/boe)	$32.76	$24.13	$26.42	$32.77	$34.16	$33.23	$31.54	$19.83	$13.50	$18.20	$22.27	$18.06	$20.88
Recycle Ratio	1.6x	1.1x	1.6x	1.6x	1.9x	1.4x	1.1x	1.6x	1.7x	1.2x	3.2x	2.0x	1.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$17.49	$21.82	$16.79	$18.68	$18.11	$24.44	$27.76	$12.25	$7.80	$14.74	$13.08	$11.05	$13.98
Acquisition Costs	$49.64	$38.70	na	$572.73	na	$37.77	$0.00	na	na	$2.82	$1.49	$1.50	$1.49
All Sources (incl. revisions)	$20.58	$22.50	$16.79	$19.99	$18.18	$24.52	$27.56	$12.25	$7.80	$14.71	$6.99	$8.92	$12.11
Exploration & Development (excl. revisions)	$140.89	$39.41	$52.60	$25.74	$43.95	$132.76	$141.66	$175.97	$10.85	$20.41	$46.34	$18.21	$33.59
Acquisition Costs	$49.64	$38.70	na	$572.73	na	$37.77	$0.00	na	na	$2.82	$1.49	$1.50	$1.49
All Sources (excl. revisions)	$98.80	$39.36	$52.60	$27.52	$44.11	$129.54	$136.64	$175.97	$10.85	$20.33	$10.61	$12.84	$24.06
Geographically Segmented Costs													
Europe	-$186.06	$9.49	$13.71	$25.79	$106.90	$52.21	$42.51	$40.00	-$16.97	$3.63	$18.98	$11.49	$22.62
Africa	$21.25	$19.26	$14.29	$54.45	$25.91	$20.28	$20.05	$14.97	$5.27	$10.19	$8.99	$7.64	$10.02
Other	$13.92	$104.05	$25.52	$10.28	$7.80	$20.89	$32.58	$8.14	$15.27	-$6.28	$4.19	$12.84	$13.36

Notes: Reserve estimates reported after royalties; Dollar amounts have been converted from Euros to U.S. Dollars at average annual exchange rates
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Eni S.P.A. (ENI - XMIL)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	7.69	7.39	9.03	11.08	10.99	12.21	12.05	9.29	7.77	8.45	8.45	8.51	9.31
Exploration Expense	4.80	3.50	2.58	2.98	3.99	4.16	3.90	1.78	0.70	0.97	0.97	0.94	1.65
G&A/Other	5.17	2.90	2.79	3.69	3.73	4.55	4.66	3.08	4.22	2.50	2.50	3.79	3.81
F&D Costs	20.58	22.50	16.79	19.99	18.18	24.52	27.56	12.25	7.80	14.71	14.71	8.92	12.11
Return on Capital	13.52	14.57	10.88	15.86	13.15	17.14	20.31	8.28	5.72	9.78	9.78	6.13	8.36
Income Taxes	19.37	23.04	16.04	22.47	20.45	23.73	33.83	12.22	11.56	10.56	10.56	8.37	12.06
Breakeven Oil Price	71.14	73.91	58.10	76.07	70.50	86.31	102.31	46.90	37.77	46.96	46.96	36.66	47.30
Quality Differential	11.71	0.05	1.53	1.13	(5.05)	(1.73)	1.29	(0.29)	2.27	1.68	1.68	0.86	0.72
Required WTI Price	82.85	73.96	59.63	77.20	65.45	84.59	103.60	46.60	40.04	48.64	48.64	37.53	48.02

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	7.69	7.39	9.03	11.08	10.99	12.21	12.05	9.29	7.77	8.45	8.45	8.51	9.31
Exploration Expense	4.80	3.50	2.58	2.98	3.99	4.16	3.90	1.78	0.70	0.97	0.97	0.94	1.65
G&A/Other	5.17	2.90	2.79	3.69	3.73	4.55	4.66	3.08	4.22	2.50	2.50	3.79	3.81
F&D Costs	20.58	22.50	16.79	19.99	18.18	24.52	27.56	12.25	7.80	14.71	14.71	8.92	12.11
Return on Capital	13.52	14.57	10.88	15.86	13.15	17.14	20.31	8.28	5.72	9.78	9.78	6.13	8.36
Income Taxes	19.37	23.04	16.04	22.47	20.45	23.73	33.83	12.22	11.56	10.56	10.56	8.37	12.06
Breakeven Oil Price	71.14	73.91	58.10	76.07	70.50	86.31	102.31	46.90	37.77	46.96	46.96	36.66	47.30
Quality Differential	11.71	0.05	1.53	1.13	(5.05)	(1.73)	1.29	(0.29)	2.27	1.68	1.68	0.86	0.72
Required WTI Price	82.85	73.96	59.63	77.20	65.45	84.59	103.60	46.60	40.04	48.64	48.64	37.53	48.02

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	9.17	8.85	9.50	10.84	12.67	16.08	14.45	11.11	9.57	11.56	12.44	11.18	11.87
Exploration Expense	3.31	1.46	1.41	1.49	1.86	3.59	2.64	2.19	0.71	1.48	1.13	1.10	1.66
G&A/Other	4.56	2.45	2.86	4.16	3.23	1.30	2.88	3.19	5.46	3.89	6.52	5.30	4.34
F&D Costs	118.28	9.49	13.71	25.79	106.90	52.21	42.51	40.00	44.90	3.63	18.98	22.50	30.00
Return on Capital	61.99	5.09	7.60	14.95	59.66	27.85	20.76	18.86	18.22	1.82	5.48	8.96	12.89
Income Taxes	68.93	4.85	7.94	20.84	73.66	30.26	17.74	11.38	11.00	1.22	5.60	6.70	9.49
Breakeven Oil Price	266.24	32.18	43.02	78.08	257.98	131.28	100.98	86.72	89.86	23.59	50.15	55.75	70.26
Quality Differential	0.69	(8.69)	(4.17)	(11.64)	(16.92)	(16.24)	(4.86)	(7.25)	(1.69)	(3.38)	(7.95)	(4.34)	(5.03)
Required WTI Price	266.94	23.49	38.85	66.43	241.06	115.04	96.11	79.47	88.18	20.21	42.20	51.41	65.24

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	7.51	7.41	9.39	11.48	10.75	11.18	10.99	8.55	7.22	7.33	8.15	7.57	8.39
Exploration Expense	4.01	3.23	2.07	3.14	4.52	4.13	3.91	1.66	0.74	0.86	0.38	0.66	1.45
G&A/Other	5.11	3.93	2.30	4.05	5.46	6.55	4.84	2.53	4.47	0.59	4.85	3.28	3.41
F&D Costs	21.25	19.26	14.29	54.45	25.91	20.28	20.05	14.97	5.27	10.19	8.99	7.64	10.02
Return on Capital	11.43	10.92	7.83	37.75	14.11	11.76	11.54	7.60	3.42	5.99	5.43	4.70	5.87
Income Taxes	19.49	25.11	14.45	67.86	27.84	23.25	25.01	11.86	5.49	5.89	7.03	5.95	8.59
Breakeven Oil Price	68.81	69.86	50.33	178.72	88.59	77.16	76.33	47.17	26.62	30.84	34.82	29.80	37.72
Quality Differential	13.56	0.39	1.53	4.36	(6.30)	(1.40)	0.80	(0.15)	2.15	1.95	(1.37)	0.91	0.68
Required WTI Price	82.37	70.25	51.87	183.08	82.29	75.76	77.14	47.02	28.77	32.78	33.45	30.71	38.40

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia and Other													
Operating Costs	6.52	5.95	7.69	10.48	10.05	11.21	12.21	9.52	7.64	8.78	9.52	8.68	9.41
Exploration Expense	8.42	6.05	4.94	4.21	4.71	4.70	5.23	1.73	0.59	0.84	2.74	1.43	2.10
G&A/Other	5.99	1.10	3.89	2.45	0.24	2.86	6.11	4.32	2.74	5.86	2.96	3.83	4.29
F&D Costs	13.92	51.61	25.52	10.28	7.80	20.89	32.58	8.14	15.27	18.66	4.19	12.71	15.77
Return on Capital	17.15	47.06	25.36	13.26	10.76	24.11	45.35	10.76	18.40	18.21	4.64	13.82	18.84
Income Taxes	17.75	29.32	21.06	8.45	9.01	13.39	58.75	9.13	15.62	15.45	5.17	12.85	18.37
Breakeven Oil Price	69.76	141.09	88.46	49.13	42.57	77.16	160.23	43.60	60.25	67.81	29.21	53.32	68.77
Quality Differential	19.35	7.70	7.06	7.71	8.40	9.98	9.16	5.31	5.49	4.67	3.07	4.41	5.54
Required WTI Price	89.10	148.78	95.51	56.84	50.97	87.14	169.39	48.91	65.74	72.48	32.29	57.73	74.31

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Eni S.P.A. (ENI - XMIL)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	8.92	11.59	15.29	15.01	16.42	15.99	11.43	10.28	10.28	11.77	10.97	11.00	11.97
Exploration Expense	4.23	3.31	4.11	5.45	5.59	5.18	2.19	0.92	0.92	1.35	1.35	1.21	2.12
G&A/Other	3.50	3.58	5.10	5.09	6.12	6.19	3.79	5.58	5.58	3.48	5.49	4.90	4.89
F&D Costs (1-Year)	24.47	20.52	41.30	29.29	33.75	37.90	13.72	13.86	13.86	19.99	8.12	12.30	15.95
Return on Capital	15.12	13.43	30.30	20.29	23.09	26.45	9.28	9.83	9.83	13.48	5.46	8.43	10.94
Income Taxes	23.91	19.81	42.92	31.56	31.96	44.06	13.69	19.88	19.88	14.56	6.49	10.42	15.29
Breakeven Oil Price	**80.14**	**72.23**	**139.02**	**106.69**	**116.92**	**135.77**	**54.10**	**60.35**	**60.35**	**64.64**	**37.89**	**48.26**	**61.16**
Quality Differential	0.06	1.96	1.56	(6.90)	(2.32)	1.72	(0.36)	3.01	3.01	2.34	(1.61)	1.24	1.02
Required WTI Price	**80.20**	**74.19**	**140.57**	**99.79**	**114.60**	**137.48**	**53.74**	**63.36**	**63.36**	**66.97**	**36.28**	**49.50**	**62.18**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	8.92	11.59	15.29	15.01	16.42	15.99	11.43	10.28	10.28	11.77	10.97	11.00	11.97
Exploration Expense	4.23	3.31	4.11	5.45	5.59	5.18	2.19	0.92	0.92	1.35	1.35	1.21	2.12
G&A/Other	3.50	3.58	5.10	5.09	6.12	6.19	3.79	5.58	5.58	3.48	5.49	4.90	4.89
F&D Costs (1-Year)	20.96	32.26	52.06	45.15	32.49	31.14	13.98	14.19	14.19	18.91	8.52	12.52	17.35
Return on Capital	13.05	20.63	38.57	31.31	22.23	21.66	9.46	10.07	10.07	12.77	5.73	8.59	11.89
Income Taxes	20.64	30.41	54.64	48.69	30.77	36.07	13.96	20.35	20.35	13.78	6.81	10.60	16.62
Breakeven Oil Price	**71.30**	**101.78**	**169.77**	**150.70**	**113.61**	**116.22**	**54.81**	**61.39**	**61.39**	**62.06**	**38.87**	**48.82**	**64.84**
Quality Differential	0.06	1.96	1.56	(6.90)	(2.32)	1.72	(0.36)	3.01	3.01	2.34	(1.61)	1.24	1.02
Required WTI Price	**71.37**	**103.74**	**171.33**	**143.80**	**111.29**	**117.93**	**54.45**	**64.39**	**64.39**	**64.40**	**37.26**	**50.06**	**65.85**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

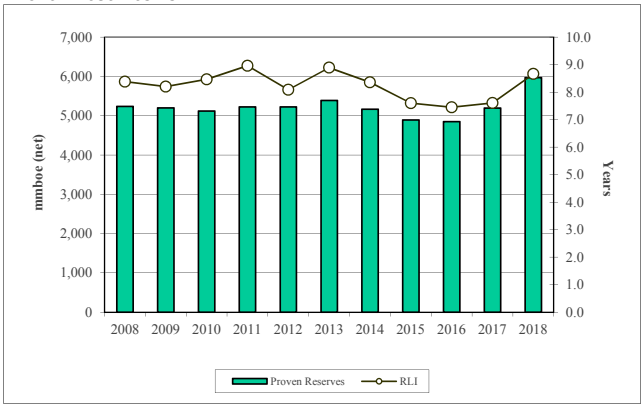
Equinor (EQNR - OSE, NYSE)

US$, net

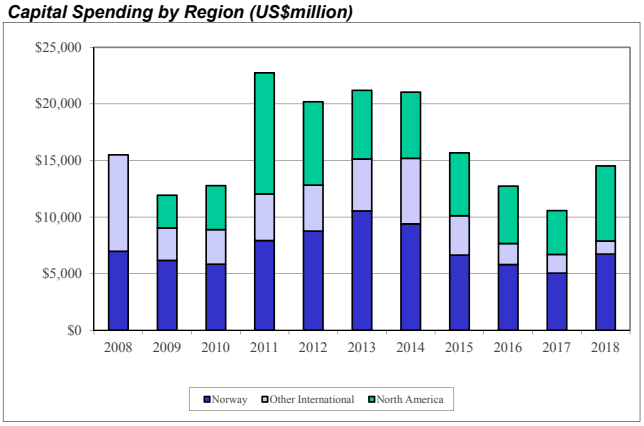
- Equinor reported results from operations of $10.27/boe compared to $4.59/boe in 2017.
- F&D costs were flat at $9.90/boe compared to $9.88/boe last year. On a realized oil:gas price ratio basis, F&D costs increased to $12.82/boe from $11.38/boe, while costs for PD reserves also rose to $17.56/boe from $16.29/boe the previous year.
- Equinor's 2018 operations imply a required Brent breakeven oil price of $42.90/boe on a realized ratio basis on total proved reserves, while PD costs implied a breakeven of $55.59/boe.
- The company posted ROCE of 14.1% in 2018 versus 8.4% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Norwegian Krones to U.S. Dollars using average annual exchange rates.

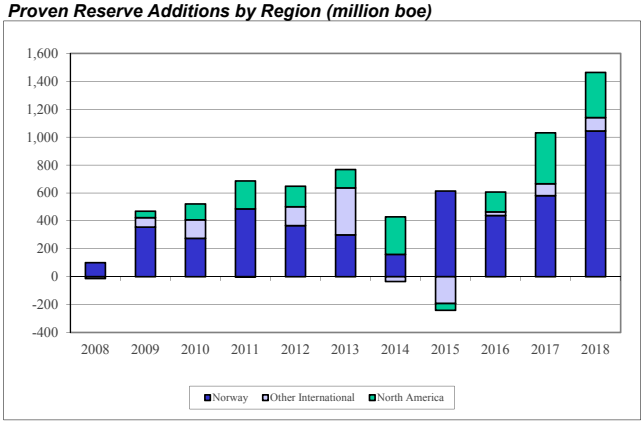
Proven Reserves vs RLI



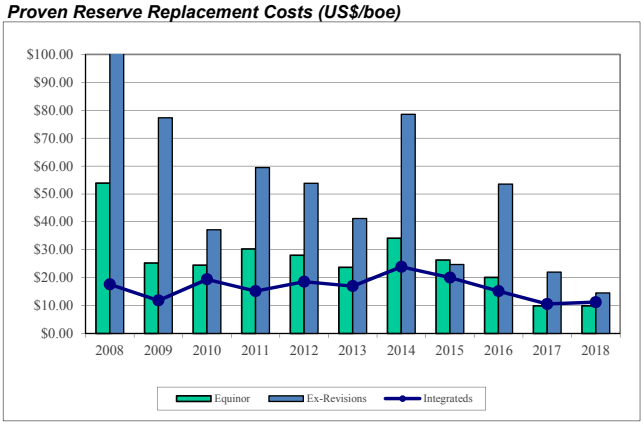
Capital Spending by Region (US$million)



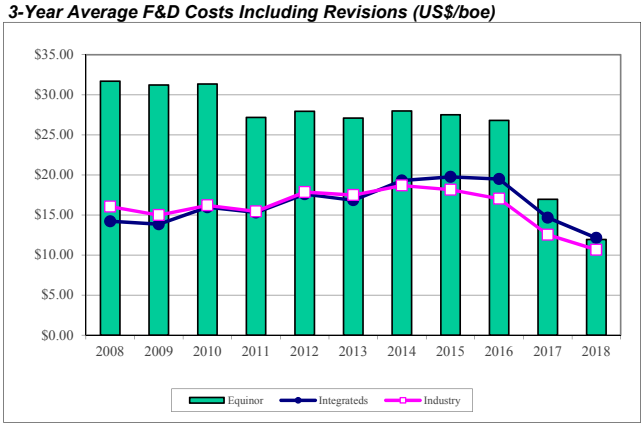
Proven Reserve Additions by Region (million boe)



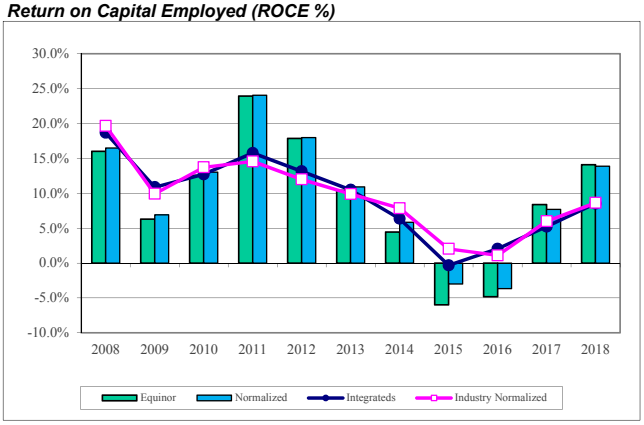
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

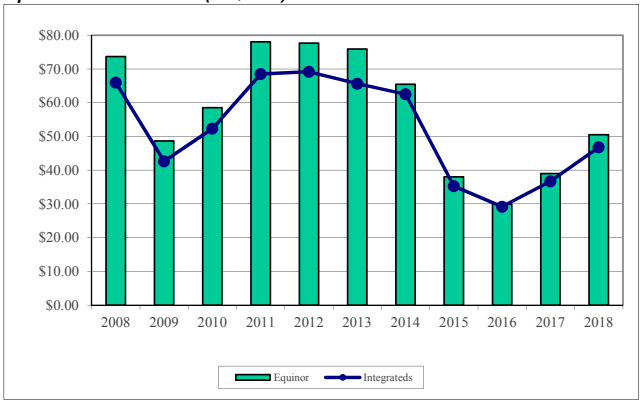
See pages F1 to F4 for analyst coverage.

Equinor (EQNR - OSE, NYSE)

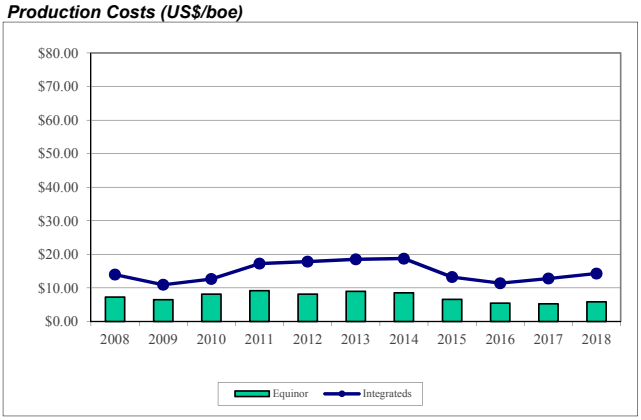
US$/boe, net

Worldwide

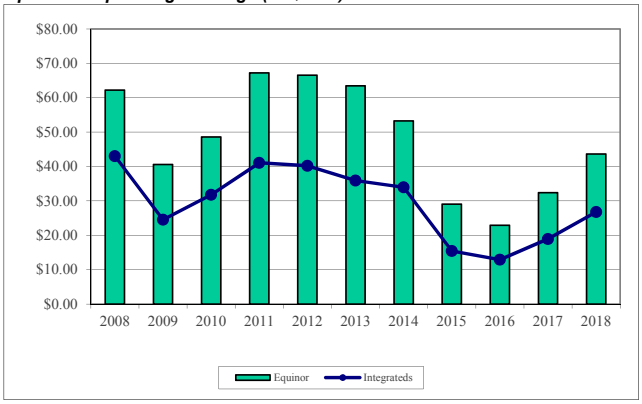
Upstream Net Revenue (US$/boe)



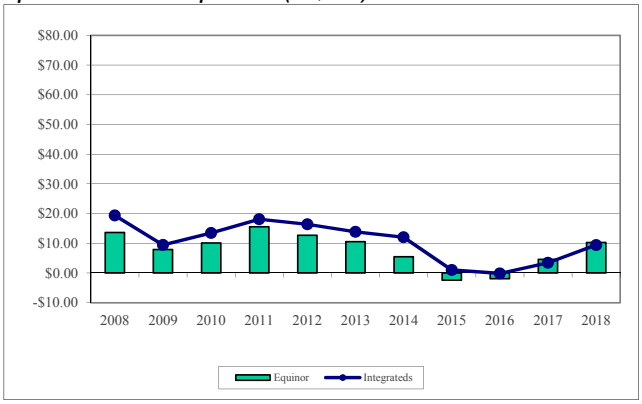
Production Costs (US$/boe)



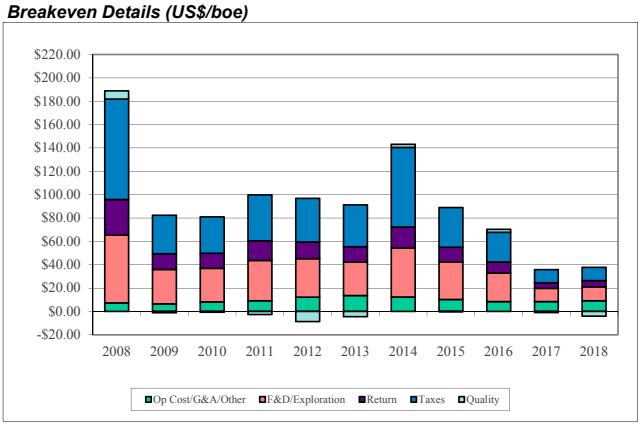
Upstream Operating Earnings (US$/boe)



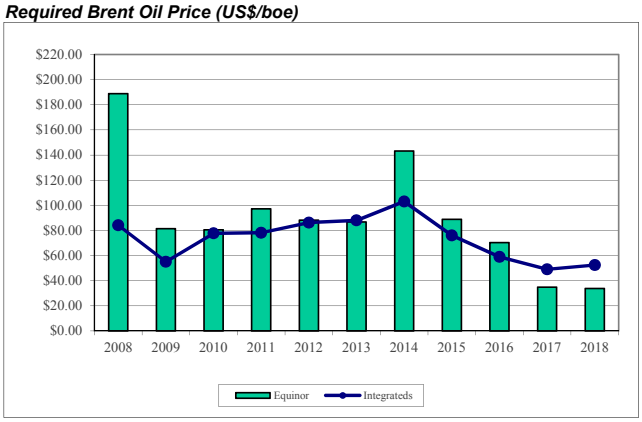
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



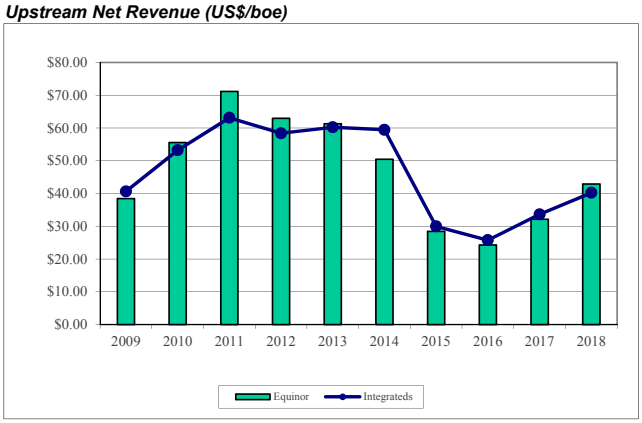
Source: BMO Capital Markets, Company Reports

Equinor (EQNR - OSE, NYSE)

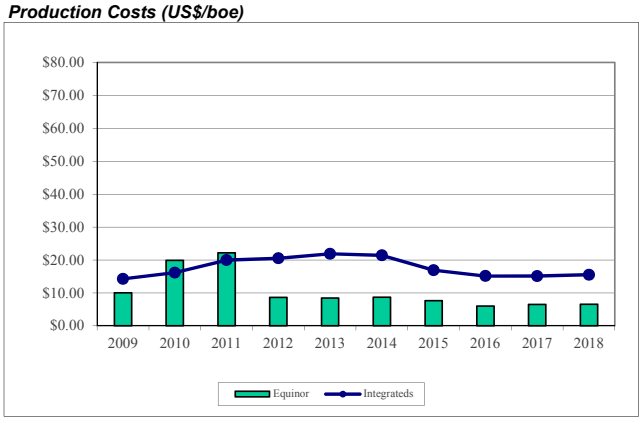
US$/boe, net

North America

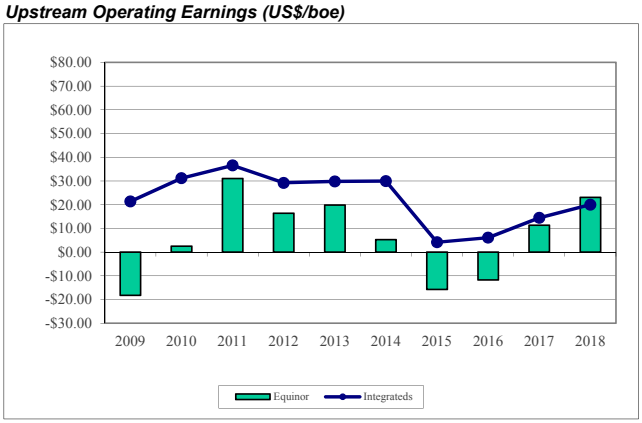
Upstream Net Revenue (US$/boe)



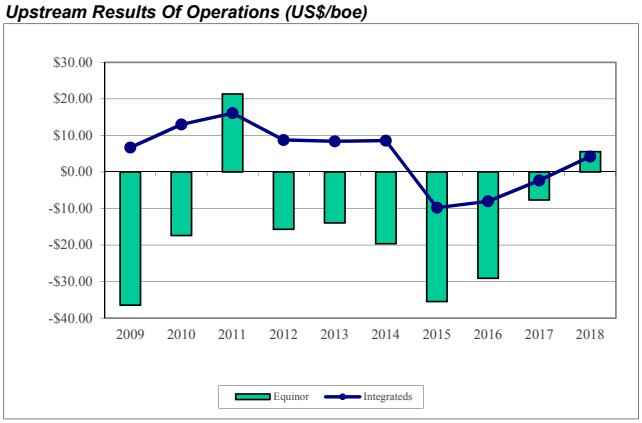
Production Costs (US$/boe)



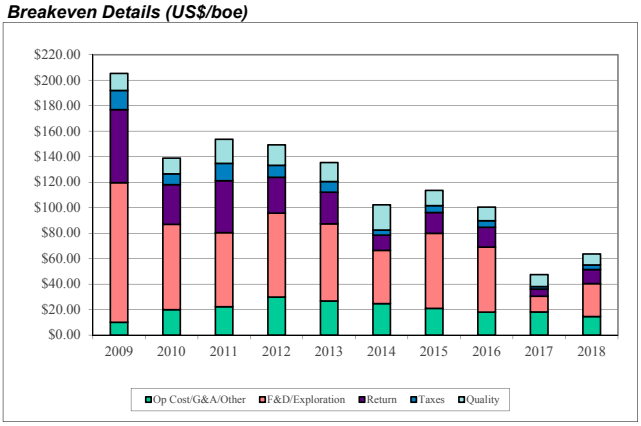
Upstream Operating Earnings (US$/boe)



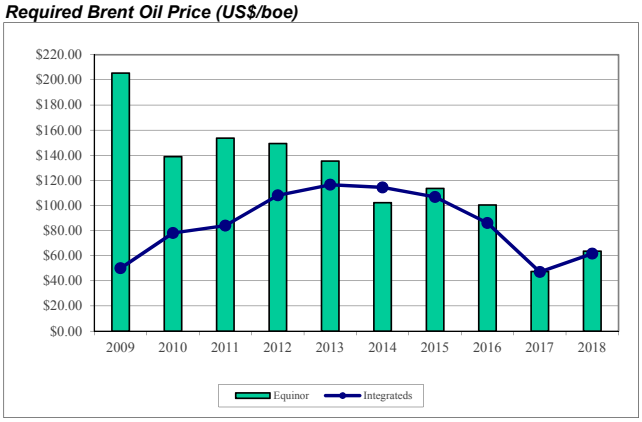
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



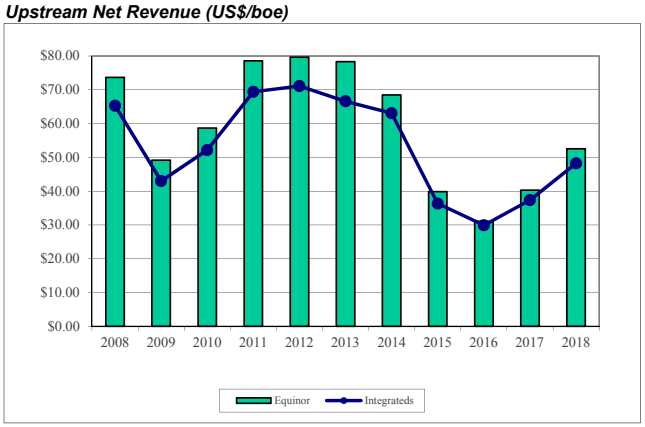
Source: BMO Capital Markets, Company Reports

Equinor (EQNR - OSE, NYSE)

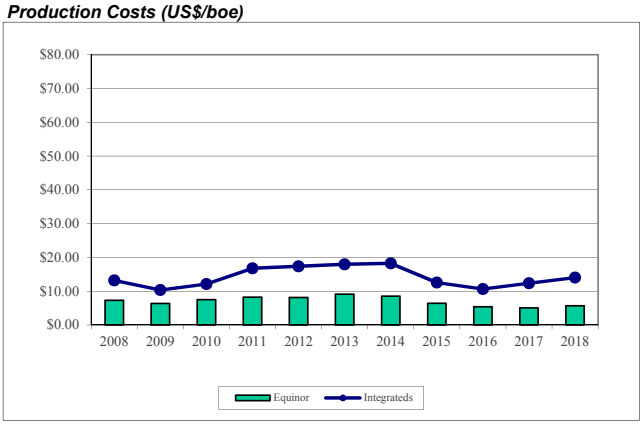
US$/boe, net

Total International

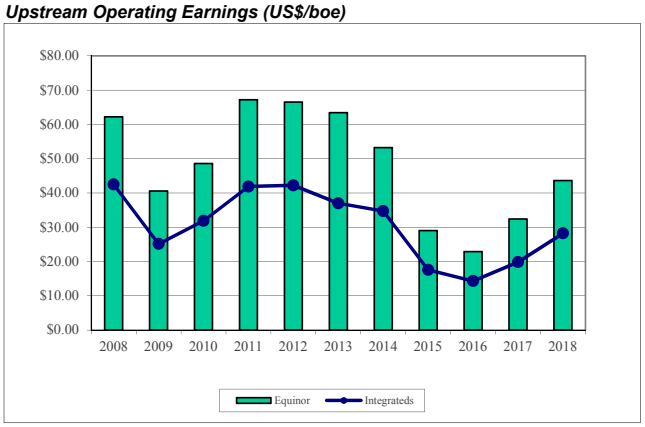
Upstream Net Revenue (US$/boe)



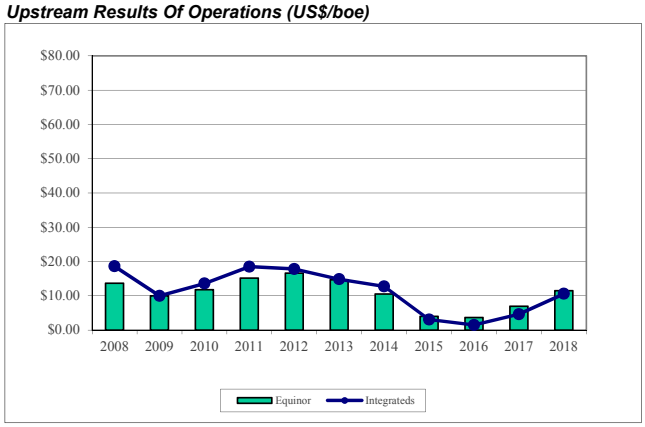
Production Costs (US$/boe)



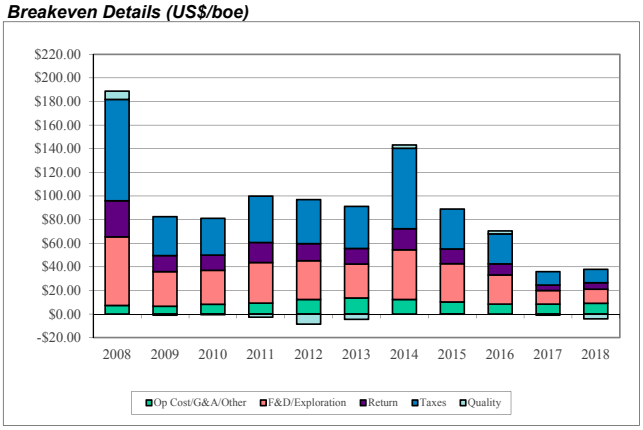
Upstream Operating Earnings (US$/boe)



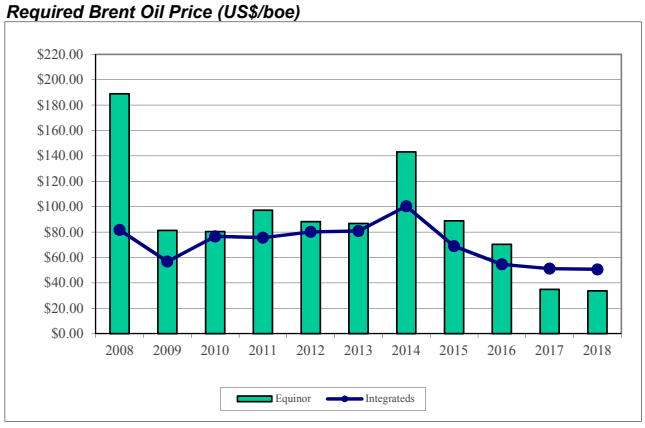
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



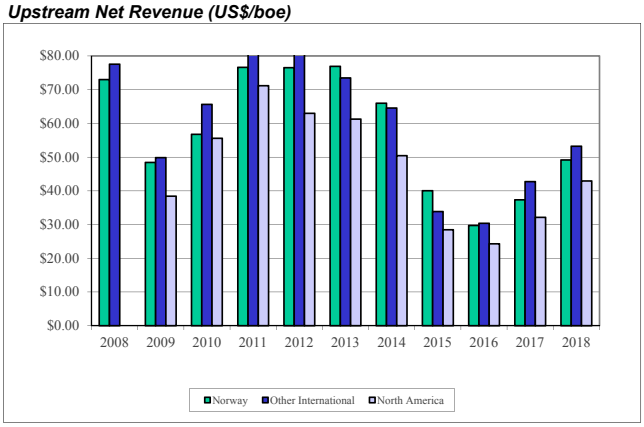
Source: BMO Capital Markets, Company Reports

Equinor (EQNR - OSE, NYSE)

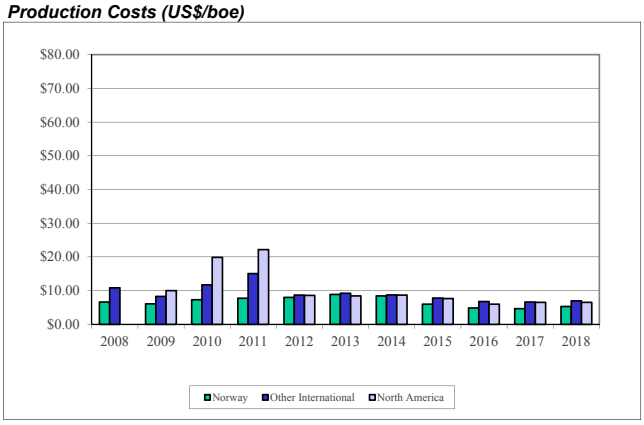
US$/boe, net

International Segments

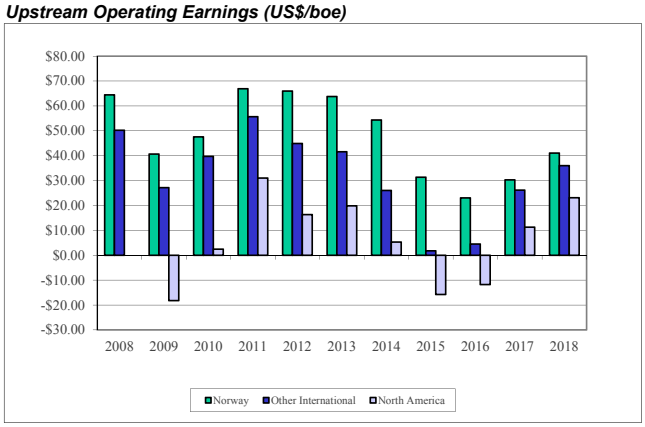
Upstream Net Revenue (US$/boe)



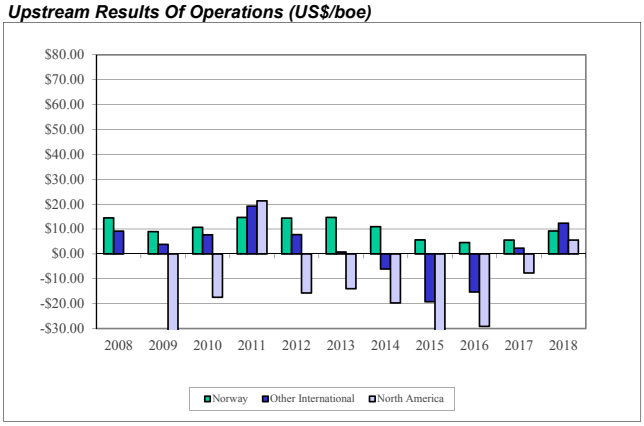
Production Costs (US$/boe)



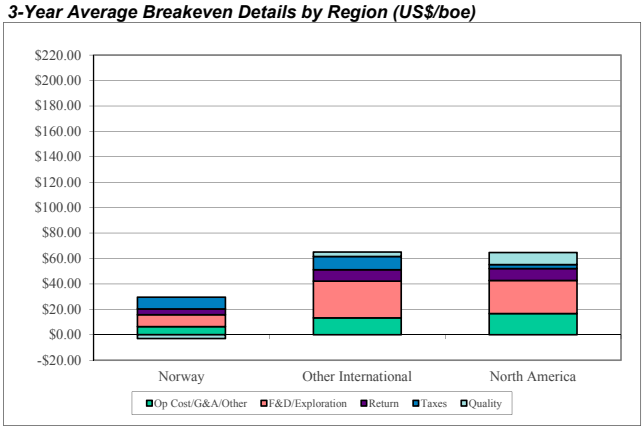
Upstream Operating Earnings (US$/boe)



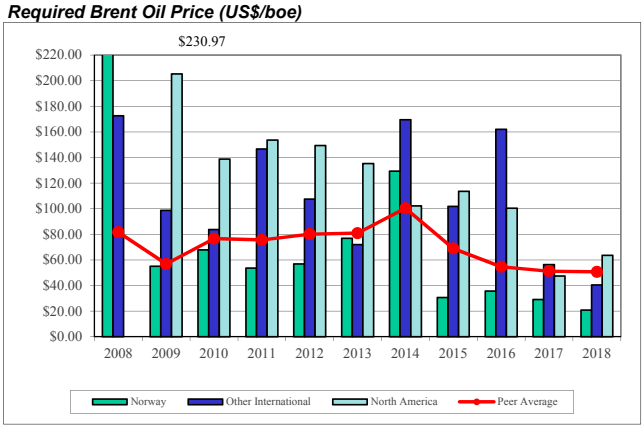
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Equinor (EQNR - OSE, NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	46,034	47,248	50,954	49,364	52,215	48,353	42,446	25,802	19,734	26,948	34,874
Midstream / Downstream Revenue	69,422	26,157	36,125	63,644	69,116	57,084	53,891	31,946	25,701	34,075	43,973
Other	716	499	484	4,307	3,043	3,047	2,508	2,172	438	164	746
Total Revenue and Other Income	116,172	73,904	87,563	117,315	124,374	108,483	98,845	59,920	45,873	61,187	79,593
Crude Oil and Product Purchases	58,293	32,689	42,559	55,945	62,428	52,335	47,827	26,212	21,505	28,212	38,516
Production and Transportation Expenses	10,510	9,029	9,511	10,576	11,003	12,765	11,572	10,487	9,025	8,763	9,528
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	2,603	2,649	2,608	2,422	3,112	3,064	4,810	3,847	2,952	1,059	1,405
General and Administrative	1,942	1,639	1,832	2,312	1,908	1,566	1,159	931	762	738	758
Depreciation, Depletion and Amortization	7,205	6,646	7,573	8,831	10,178	11,029	9,953	8,750	9,257	9,781	9,564
Interest, net	(2,514)	1,388	(235)	(296)	(17)	2,893	-	1,316	258	351	1,263
Other	6,175	1,621	1,097	94	224	1,293	6,143	7,856	2,292	(1,137)	(315)
Earnings Before Income Tax	31,959	18,243	22,619	37,431	35,538	23,538	17,382	521	(178)	13,420	18,874
Current Income Taxes	24,722	15,954	15,254	19,707	20,614	16,886	13,905	6,541	1,422	7,805	11,335
Future Income Taxes	(426)	(524)	1,141	3,993	2,974	(2)	(32)	(1,378)	1,302	1,017	-
Total Income Taxes	24,296	15,430	16,395	23,701	23,589	16,884	13,874	5,163	2,724	8,822	11,335
Minority Interest	(1)	-	(72)	70	(103)	102	(16)	(25)	(20)	(8)	(3)
Earnings From Continuing Operations	7,662	2,813	6,152	13,801	11,846	6,757	3,492	(4,666)	(2,922)	4,590	7,536
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	7,662	2,813	6,152	13,801	11,846	6,757	3,492	(4,666)	(2,922)	4,590	7,536
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	7,662	2,813	6,152	13,801	11,846	6,757	3,492	(4,666)	(2,922)	4,590	7,536

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	7,662	2,813	6,152	13,801	11,846	6,757	3,492	(4,666)	(2,922)	4,590	7,536
Charges and Credits Not Impacting Cash	7,464	7,234	9,196	13,092	13,686	11,554	12,096	9,494	12,479	17,578	21,256
Other	2,220	1,045	134	(3,944)	(4,642)	851	(2,492)	1,316	1,868	(1,385)	(864)
Cash Flow From Operations	17,347	11,092	15,483	22,950	20,889	19,162	13,096	6,143	11,425	20,783	27,928
Change in Working Capital / Other	401	(1,343)	(2,916)	(3,466)	894	(1,921)	6,984	7,384	(2,391)	(6,420)	(8,234)
Net Cash From Operating Activities	17,748	9,749	12,567	19,484	21,783	17,241	20,080	13,528	9,034	14,363	19,694
Total Capital Expenditures	(11,573)	(11,807)	(11,680)	(20,522)	(19,325)	(19,283)	(19,461)	(15,476)	(14,125)	(10,795)	(11,367)
Acquisitions, net	951	227	316	5,224	5,123	664	3,587	4,120	761	406	(1,784)
Other	(4,579)	(386)	(1,236)	(223)	(2,407)	(187)	(1,889)	(2,929)	2,918	711	1,939
Net Cash From Investing Activities	(15,200)	(11,965)	(12,601)	(15,521)	(16,608)	(18,807)	(17,763)	(14,285)	(10,446)	(9,678)	(11,212)
Net Change in Debt	(47)	6,576	2,036	465	155	8,203	1,683	1,899	(83)	(4,775)	(1,877)
Net Change in Common Stock	(55)	(54)	(49)	(71)	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(4,764)	(3,599)	(3,157)	(3,482)	(3,559)	(3,659)	(5,349)	(2,842)	(1,876)	(1,491)	(2,672)
Other	1,851	(1,130)	1,264	855	275	(17)	-	12	-	444	(475)
Net Cash From Financing Activities	(3,016)	1,793	94	(2,233)	(3,129)	4,527	(3,667)	(931)	(1,959)	(5,822)	(5,024)
Effect of Exchange Rate on Cash	125	(453)	74	(55)	(327)	494	905	881	(152)	436	(292)
Net Increase/(Decrease) in Cash	(343)	(876)	135	1,674	1,719	3,455	(444)	(807)	(3,523)	(701)	3,166
Cash and Equivalents, Beginning of Year	2,571	2,228	1,352	1,487	3,161	4,881	8,336	7,891	7,085	3,562	2,861
Cash and Equivalents, End of Year	2,228	1,352	1,487	3,161	4,881	8,336	7,891	7,085	3,562	2,861	6,027

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Equinor (EQNR - OSE, NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	25,644	18,480	24,594	34,674	31,463	40,643	40,446	30,779	24,859	25,820	26,055
Net Property, Plant and Equipment	58,410	54,120	57,566	71,345	75,494	82,954	89,225	48,676	59,556	63,636	65,259
Other Assets	18,376	16,771	24,144	28,521	27,904	27,129	26,906	40,522	20,115	21,644	21,189
Total Assets	102,430	89,371	106,304	134,540	134,861	150,726	156,577	119,976	104,530	111,101	112,503
Total Current Liabilities	28,284	17,753	22,506	29,955	28,110	28,406	28,414	16,792	16,744	19,017	16,604
Long-term Debt	9,670	15,237	16,499	19,537	17,365	28,168	32,557	32,765	27,999	24,183	23,263
Deferred Income Taxes	12,067	12,119	12,904	14,445	13,961	12,084	11,350	8,117	6,427	7,654	8,671
Other Liabilities and Deferred Credits	14,149	12,486	16,967	20,689	20,425	21,479	23,747	18,232	18,261	20,361	20,978
Total Liabilities	64,170	57,595	68,876	84,625	79,861	90,136	96,067	75,905	69,431	71,216	69,516
Minority Interests	350	286	1,133	1,092	120	85	63	37	27	24	19
Common Shares	1,412	1,266	1,318	1,395	1,375	1,362	1,270	993	1,156	1,180	1,185
Contributed Surplus (Paid-in Capital)	7,340	6,626	6,909	7,321	6,980	6,859	6,381	4,977	6,607	7,933	8,247
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	26,208	23,168	27,268	38,250	46,558	48,421	42,605	26,696	32,573	34,406	38,787
Other / Comprehensive Income (Loss)	2,950	430	801	1,856	(34)	3,863	10,207	11,368	(5,264)	(3,658)	(5,251)
Total Shareholders' Equity	37,910	31,490	36,295	48,822	54,880	60,505	60,462	44,034	35,072	39,861	42,968
Total Liabilities and Shareholders' Equity	102,430	89,371	106,304	134,540	134,861	150,726	156,577	119,976	104,530	111,101	112,503
Return on Capital Employed (ROCE)	**16.0%**	**6.3%**	**12.6%**	**23.9%**	**17.9%**	**10.4%**	**4.4%**	**-6.0%**	**-4.8%**	**8.4%**	**14.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	46,034	30,857	35,367	45,495	50,169	45,987	40,462	24,474	19,474	26,633	34,833	80,940	145,876
Production Costs	4,560	4,134	4,944	5,365	5,278	5,446	5,270	4,245	3,569	3,609	4,039	11,217	20,732
Exploration	2,602	2,650	2,608	2,422	3,112	3,064	4,826	3,835	2,952	1,060	1,420	5,432	14,093
DD&A	6,316	6,773	7,004	7,596	9,628	10,910	11,604	11,207	9,536	9,190	8,963	27,689	50,500
G&A/Other	0	0	0	0	2,682	2,808	2,381	2,358	1,908	2,157	2,243	6,308	11,047
Pre-tax Results Of Operations	32,555	17,301	20,811	30,111	29,469	23,759	16,382	2,830	1,509	10,617	18,168	30,294	49,505
Income Taxes	24,029	12,273	14,694	21,029	21,266	17,360	12,978	4,363	2,760	7,483	11,087	21,330	38,672
Results Of Operations	8,526	5,028	6,117	9,081	8,202	6,399	3,403	-1,534	-1,251	3,134	7,081	8,964	10,834

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	1,076	1,880	2,905	4,900	5,310	5,159	2,954	2,692	3,536	6,127	12,355	20,468
Production Costs	na	281	673	904	671	732	889	794	663	716	935	2,314	3,997
Exploration	na	1,305	1,123	734	1,307	1,276	2,095	2,420	2,011	302	754	3,067	7,582
DD&A	na	778	832	788	2,149	2,757	2,616	2,069	1,898	2,074	2,781	6,753	11,438
G&A/Other	na	0	0	0	1,651	1,583	1,635	1,378	1,321	1,274	1,139	3,734	6,747
Pre-tax Results Of Operations	na	-1,288	-749	478	-877	-1,038	-2,076	-3,707	-3,201	-830	518	-3,513	-9,296
Income Taxes	na	-267	-160	-393	346	170	-63	-25	25	14	-276	-237	-325
Results Of Operations	na	-1,021	-589	871	-1,223	-1,208	-2,013	-3,682	-3,226	-844	794	-3,276	-8,971

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	46,034	29,782	33,487	42,589	45,269	40,677	35,303	21,520	16,782	23,097	28,706	68,585	125,408
Production Costs	4,560	3,853	4,271	4,461	4,608	4,714	4,381	3,450	2,906	2,893	3,104	8,903	16,734
Exploration	2,602	1,345	1,484	1,688	1,805	1,787	2,730	1,415	941	758	666	2,365	6,510
DD&A	6,316	5,994	6,172	6,808	7,479	8,152	8,988	9,138	7,638	7,116	6,182	20,936	39,062
G&A/Other	0	0	0	0	1,032	1,225	746	980	587	883	1,104	2,574	4,301
Pre-tax Results Of Operations	32,555	18,589	21,560	29,633	30,346	24,798	18,458	6,537	4,710	11,447	17,650	33,807	58,802
Income Taxes	24,029	12,540	14,854	21,422	20,920	17,190	13,042	4,388	2,735	7,469	11,363	21,567	38,997
Results Of Operations	8,526	6,049	6,706	8,211	9,426	7,608	5,416	2,149	1,975	3,978	6,287	12,240	19,805

Notes: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Equinor (EQNR - OSE, NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	73.67	48.67	58.51	78.04	77.64	75.89	65.49	38.02	29.93	38.99	50.53	40.01	44.41
Production Costs	7.30	6.52	8.18	9.20	8.17	8.99	8.53	6.59	5.49	5.28	5.86	5.54	6.31
Exploration	4.16	4.18	4.31	4.15	4.82	5.06	7.81	5.96	4.54	1.55	2.06	2.69	4.29
DD&A	10.11	10.68	11.59	13.03	14.90	18.00	18.78	17.41	14.66	13.46	13.00	13.69	15.38
G&A/Other	0.00	0.00	0.00	0.00	4.15	4.63	3.85	3.66	2.93	3.16	3.25	3.12	3.36
Pre-tax Results Of Operations	52.10	27.29	34.43	51.65	45.61	39.21	26.51	4.40	2.32	15.54	26.36	14.97	15.07
Income Taxes	38.46	19.36	24.31	36.07	32.91	28.65	21.01	6.78	4.24	10.96	16.08	10.54	11.77
Results Of Operations	13.65	7.93	10.12	15.58	12.69	10.56	5.51	-2.38	-1.92	4.59	10.27	4.43	3.30

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	38.41	55.55	71.15	62.95	61.27	50.41	28.45	24.29	32.15	42.90	33.97	35.92
Production Costs	na	$10.03	$19.89	$22.15	$8.61	$8.44	$8.69	$7.65	$5.98	$6.51	$6.55	$6.36	$7.01
Exploration	na	$46.60	$33.20	$17.99	$16.79	$14.73	$20.48	$23.31	$18.14	$2.75	$5.28	$8.43	$13.31
DD&A	na	$27.80	$24.60	$19.31	$27.61	$31.81	$25.56	$19.93	$17.12	$18.85	$19.47	$18.57	$20.07
G&A/Other	na	$0.00	$0.00	$0.00	$21.21	$18.26	$15.98	$13.27	$11.92	$11.58	$7.97	$10.27	$11.84
Pre-tax Results Of Operations	na	-$46.01	-$22.14	$11.70	-$11.27	-$11.98	-$20.29	-$35.70	-$28.88	-$7.55	$3.63	-$9.66	-$16.31
Income Taxes	na	-$9.55	-$4.73	-$9.62	$4.45	$1.96	-$0.62	-$0.24	$0.23	$0.13	-$1.93	-$0.65	-$0.57
Results Of Operations	na	-$36.46	-$17.41	$21.32	-$15.72	-$13.94	-$19.67	-$35.46	-$29.11	-$7.67	$5.56	-$9.01	-$15.74

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	73.67	49.14	58.68	78.55	79.65	78.33	68.48	39.87	31.09	40.31	52.53	41.33	46.20
Production Costs	$7.30	$6.36	$7.48	$8.23	$8.11	$9.08	$8.50	$6.39	$5.38	$5.05	$5.68	$5.37	$6.16
Exploration	$4.16	$2.22	$2.60	$3.11	$3.18	$3.44	$5.30	$2.62	$1.74	$1.32	$1.22	$1.43	$2.40
DD&A	$10.11	$9.89	$10.82	$12.56	$13.16	$15.70	$17.43	$16.93	$14.15	$12.42	$11.31	$12.62	$14.39
G&A/Other	$0.00	$0.00	$0.00	$0.00	$1.82	$2.36	$1.45	$1.82	$1.09	$1.54	$2.02	$1.55	$1.58
Pre-tax Results Of Operations	$52.10	$30.67	$37.78	$54.66	$53.39	$47.75	$35.81	$12.11	$8.72	$19.98	$32.30	$20.37	$21.66
Income Taxes	$38.46	$20.69	$26.03	$39.51	$36.81	$33.10	$25.30	$8.13	$5.07	$13.03	$20.79	$13.00	$14.37
Results Of Operations	$13.65	$9.98	$11.75	$15.14	$16.58	$14.65	$10.51	$3.98	$3.66	$6.94	$11.50	$7.38	$7.30

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Norway													
Net Revenue	$72.95	$48.39	$56.74	$76.59	$76.51	$76.91	$65.94	$40.02	$29.71	$37.33	$49.16	$38.84	$44.19
Production Costs	$6.64	$6.08	$7.30	$7.74	$7.98	$8.90	$8.43	$6.01	$4.86	$4.69	$5.29	$4.94	$5.81
Exploration	$1.86	$1.63	$1.88	$1.92	$1.26	$2.19	$2.04	$1.31	$0.87	$0.80	$0.94	$0.87	$1.18
DD&A	$8.08	$8.01	$8.78	$11.10	$10.71	$12.84	$15.12	$14.64	$12.16	$10.12	$9.56	$10.59	$12.24
G&A/Other	$0.00	$0.00	$0.00	$0.00	$1.29	$2.03	$1.10	$1.34	$0.95	$1.57	$1.86	$1.47	$1.37
Pre-tax Results Of Operations	$56.37	$32.68	$38.78	$55.83	$55.26	$50.94	$39.25	$16.72	$10.87	$20.14	$31.50	$20.97	$23.59
Income Taxes	$41.88	$23.71	$28.07	$41.15	$40.83	$36.26	$28.28	$11.05	$6.30	$14.55	$22.29	$14.49	$16.42
Results Of Operations	$14.48	$8.96	$10.72	$14.68	$14.43	$14.68	$10.96	$5.67	$4.57	$5.60	$9.21	$6.48	$7.17

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	77.55	49.81	65.63	83.81	80.85	73.46	64.54	33.83	30.38	42.73	53.23	42.45	44.88
Production Costs	10.84	8.29	11.74	15.05	8.70	9.21	8.74	7.82	6.78	6.62	6.99	6.80	7.36
Exploration	16.52	14.36	14.14	13.10	14.94	11.86	20.04	15.69	12.09	3.23	4.26	6.47	10.81
DD&A	20.97	21.34	22.89	20.76	26.81	30.27	26.54	23.21	19.81	20.92	19.77	20.15	21.94
G&A/Other	0.00	0.00	0.00	0.00	12.28	10.82	9.70	8.53	7.02	6.71	5.99	6.55	7.53
Pre-tax Results Of Operations	29.22	5.82	16.87	34.89	18.11	11.29	-0.48	-21.42	-15.31	5.25	16.24	2.48	-2.76
Income Taxes	20.07	2.00	9.15	15.72	10.36	10.53	5.58	-2.17	0.00	2.91	3.88	2.31	2.04
Results Of Operations	9.15	3.82	7.71	19.18	7.75	0.76	-6.06	-19.25	-15.31	2.33	12.35	0.16	-4.80

Source: BMO Capital Markets, Company Reports

Equinor (EQNR - OSE, NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	4,024.7	4,158.9	4,134.2	3,928.8	4,786.3	4,306.8	4,287.7	4,383.6	4,547.9	5,128.8	5,347.9	5,008.2	4,739.2
Liquids Production (b/d)	1,041,096	1,043,836	967,123	942,466	972,603	942,466	978,082	1,032,877	1,024,658	1,016,438	997,260	1,012,785	1,009,863
Total Production (boe/d)	1,711,872	1,736,986	1,656,164	1,597,260	1,770,320	1,660,274	1,692,694	1,763,470	1,782,648	1,871,233	1,888,584	1,847,489	1,799,726
% Gas Production	39%	40%	42%	41%	45%	43%	42%	41%	43%	46%	47%	45%	44%
% Oil Production	61%	60%	58%	59%	55%	57%	58%	59%	57%	54%	53%	55%	56%
Proven Reserves:													
Gas Reserves (bcf)	18,984.0	18,149.0	17,965.0	17,680.0	17,028.0	18,415.0	16,919.0	14,623.0	14,637.0	15,075.0	18,096.0	15,936.0	15,870.0
Oil Reserves (mmbbls)	2,073.0	2,174.0	2,124.0	2,276.0	2,387.0	2,318.0	2,345.0	2,454.0	2,408.0	2,683.0	2,954.0	2,681.7	2,568.8
Total Proven Reserves (mmboe)	5,237.0	5,198.8	5,118.2	5,222.7	5,225.0	5,387.2	5,164.8	4,891.2	4,847.5	5,195.5	5,970.0	5,337.7	5,213.8
% Gas Reserves	60%	58%	59%	56%	54%	57%	55%	50%	50%	48%	51%	50%	51%
% Oil Reserves	40%	42%	41%	44%	46%	43%	45%	50%	50%	52%	49%	50%	49%
Proven Reserve Life Index	8.4	8.2	8.5	9.0	8.1	8.9	8.4	7.6	7.5	7.6	8.7	7.9	7.9
Proven Reserve Additions:													
Gas Additions (bcf)	134.0	683.0	1,325.0	1,149.0	1,095.0	2,960.0	68.0	-695.0	1,674.0	2,310.0	4,973.0	8,957.0	8,330.0
Oil Additions (mmbbls)	64.0	355.0	301.0	494.0	466.0	275.0	383.0	488.0	328.0	646.0	635.0	1,609.0	2,480.0
Total Additions (mmboe)	86.3	468.8	521.8	685.5	648.5	768.3	394.3	372.2	607.0	1,031.0	1,463.8	3,101.8	3,868.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	16.8	154.3	332.0	224.7	371.2	500.5	247.8	620.8	173.0	430.8	806.2	1,410.0	2,278.7
Acquisitions	69.0	0.0	11.5	158.0	4.0	13.8	20.0	13.2	64.7	49.0	192.5	306.2	339.3
Dispositions	(201.2)	(4.0)	0.0	-66.0	-71.2	-126.0	-221.2	-222.8	-25.7	-38.0	-2.0	(65.7)	(509.7)
Revisions of Estimates	201.7	318.5	178.3	368.8	344.5	380.0	347.7	-39.0	395.0	589.2	467.2	1,451.3	1,760.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	19.5%	32.9%	63.6%	32.8%	57.2%	65.1%	62.8%	166.8%	28.5%	41.8%	55.1%	45.5%	58.9%
Acquisitions	79.9%	0.0%	2.2%	23.0%	0.6%	1.8%	5.1%	3.5%	10.7%	4.8%	13.2%	9.9%	8.8%
Dispositions	-233.0%	-0.9%	0.0%	-9.6%	-11.0%	-16.4%	-56.1%	-59.9%	-4.2%	-3.7%	-0.1%	-2.1%	-13.2%
Revisions of Estimates	233.6%	67.9%	34.2%	53.8%	53.1%	49.5%	88.2%	-10.5%	65.1%	57.1%	31.9%	46.8%	45.5%
Additions as % of Production:													
Gas	9.1%	45.0%	87.8%	80.1%	62.7%	188.3%	4.3%	-43.4%	100.8%	123.4%	254.8%	163.3%	96.3%
Oil	16.8%	93.2%	85.3%	143.6%	131.3%	79.9%	107.3%	129.4%	87.7%	174.1%	174.5%	145.1%	134.6%
Total	13.8%	73.9%	86.3%	117.6%	100.4%	126.8%	63.8%	57.8%	93.3%	151.0%	212.4%	153.3%	117.8%
Additions as % of Reserves:													
Gas	0.7%	3.8%	7.4%	6.5%	6.4%	16.1%	0.4%	-4.8%	11.4%	15.3%	27.5%	56.2%	52.5%
Oil	3.1%	16.3%	14.2%	21.7%	19.5%	11.9%	16.3%	19.9%	13.6%	24.1%	21.5%	60.0%	96.5%
Total	1.6%	9.0%	10.2%	13.1%	12.4%	14.3%	7.6%	7.6%	12.5%	19.8%	24.5%	58.1%	74.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$3,153.5	$2,682.7	$2,777.9	$3,282.8	$3,593.3	$3,710.3	$3,793.8	$2,866.9	$1,437.0	$1,235.0	$1,438.0	$4,110.0	$10,770.7
Development	$7,737.4	$9,034.9	$8,847.5	$12,292.6	$15,439.3	$16,730.3	$16,127.6	$12,162.7	$8,804.0	$8,103.0	$8,162.0	$25,069.0	$53,359.2
Acquisitions	$4,606.5	$210.4	$1,145.5	$7,174.5	$1,151.9	$748.9	$1,111.2	$645.4	$2,486.0	$1,227.0	$4,912.0	$8,625.0	$10,381.5
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	na	na
Other	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$15,497.5	$11,928.0	$12,770.9	$22,749.9	$20,184.5	$21,189.5	$21,032.5	$15,675.0	$12,727.0	$10,565.0	$14,512.0	$37,804.0	$74,511.4
Expenditures as % of Total:													
Exploration	20.3%	22.5%	21.8%	14.4%	17.8%	17.5%	18.0%	18.3%	11.3%	11.7%	9.9%	10.9%	14.5%
Development	49.9%	75.7%	69.3%	54.0%	76.5%	79.0%	76.7%	77.6%	69.2%	76.7%	56.2%	66.3%	71.6%
Acquisitions	29.7%	1.8%	9.0%	31.5%	5.7%	3.5%	5.3%	4.1%	19.5%	11.6%	33.8%	22.8%	13.9%
Cashflow (US$million)	$14,842.4	$11,800.8	$13,121.1	$16,677.6	$17,830.4	$17,309.0	$15,006.9	$9,673.4	$8,284.8	$12,324.3	$16,044.0	$36,653.0	$61,333.2
Cashflow (US$/boe)	$23.75	$18.61	$21.71	$28.61	$27.59	$28.56	$24.29	$15.03	$12.73	$18.04	$23.27	$18.12	$31.12
Recycle Ratio	0.4x	0.7x	0.9x	0.9x	1.0x	1.2x	0.7x	0.6x	0.6x	1.8x	2.4x	1.5x	1.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$49.84	$24.78	$22.78	$26.24	$26.59	$23.21	$33.45	$25.83	$18.03	$9.15	$7.54	$10.20	$15.88
Acquisition Costs	$66.76	na	$99.61	$45.41	$287.98	$54.13	$55.56	$49.02	$38.44	$25.04	$25.52	$28.17	$30.59
All Sources (incl. Revisions)	$53.90	$25.23	$24.47	$30.27	$28.05	$23.69	$34.17	$26.34	$20.12	$9.88	$9.90	$11.93	$17.02
Exploration & Development (excl. revisions)	$646.99	$75.92	$35.02	$69.33	$51.28	$40.84	$80.38	$24.21	$59.20	$21.67	$11.91	$20.69	$28.14
Acquisition Costs	$66.76	na	$99.61	$45.41	$287.98	$54.13	$55.56	$49.02	$38.44	$25.04	$25.52	$28.17	$30.59
All Sources (excl. revisions)	$180.55	$77.29	$37.18	$59.45	$53.80	$41.20	$78.53	$24.72	$53.55	$22.02	$14.53	$22.03	$28.46
Geographically Segmented Costs													
Norway	$69.78	$17.40	$21.20	$16.31	$20.17	$25.74	$40.27	$10.71	$12.81	$8.68	$6.45	$8.46	$11.47
Other International	$45.44	$39.75	$23.17	-$6,181.84	$30.03	$13.03	$53.81	$330.96	$72.12	$19.51	$11.76	$22.33	$42.60
America	na	$62.90	$33.81	$40.14	$49.00	$45.79	$21.28	-$156.62	$32.94	$9.57	$20.47	$17.66	$24.07

Notes: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Equinor (EQNR - OSE, NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	7.30	6.52	8.18	9.20	8.17	8.99	8.53	6.59	5.49	5.28	5.86	5.54	6.31
Exploration Expense	4.16	4.18	4.31	4.15	4.82	5.06	7.81	5.96	4.54	1.55	2.06	2.69	4.29
G&A/Other	-	-	-	-	4.15	4.63	3.85	3.66	2.93	3.16	3.25	3.12	3.36
F&D Costs	53.90	25.23	24.47	30.27	28.05	23.69	34.17	26.34	20.12	9.88	9.90	11.93	17.02
Return on Capital	30.51	13.51	12.96	16.96	14.38	13.16	17.88	12.53	9.39	4.71	5.36	5.89	8.44
Income Taxes	85.97	32.98	31.13	39.27	37.29	35.69	68.18	33.84	25.37	11.24	11.40	14.07	22.51
Breakeven Oil Price	181.85	82.41	81.05	99.86	96.86	91.22	140.43	88.93	67.83	35.83	37.84	43.25	61.93
Quality Differential	7.01	(1.06)	(0.63)	(2.67)	(8.63)	(4.48)	2.74	(0.12)	2.52	(0.95)	(4.07)	(0.83)	0.02
Required Brent Price	188.86	81.35	80.43	97.19	88.23	86.73	143.16	88.81	70.35	34.87	33.76	42.41	61.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	-	10.03	19.89	22.15	8.61	8.44	8.69	7.65	5.98	6.51	6.55	6.36	7.01
Exploration Expense	-	46.60	33.20	17.99	16.79	14.73	20.48	23.31	18.14	2.75	5.28	8.43	13.31
G&A/Other	-	-	-	-	21.21	18.26	15.98	13.27	11.92	11.58	7.97	10.27	11.84
F&D Costs	-	62.90	33.81	40.14	49.00	45.79	21.28	35.60	32.94	9.57	20.47	17.66	24.07
Return on Capital	-	57.36	31.14	40.85	28.22	24.88	11.94	16.26	15.56	5.74	11.06	9.36	12.74
Income Taxes	-	15.02	8.47	13.62	9.41	8.29	3.98	5.42	5.19	1.91	3.69	3.12	4.25
Breakeven Oil Price	-	191.91	126.52	134.75	133.24	120.39	82.34	101.50	89.73	38.07	55.02	55.20	73.22
Quality Differential	-	13.46	12.29	18.90	16.08	14.92	19.88	12.07	10.66	9.31	8.61	9.53	9.53
Required Brent Price	-	205.37	138.81	153.65	149.32	135.31	102.23	113.57	100.39	47.38	63.63	64.73	82.74

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	7.30	6.36	7.48	8.23	8.11	9.08	8.50	6.39	5.38	5.05	5.68	5.37	6.16
Exploration Expense	4.16	2.22	2.60	3.11	3.18	3.44	5.30	2.62	1.74	1.32	1.22	1.43	2.40
G&A/Other	-	-	-	-	1.82	2.36	1.45	1.82	1.09	1.54	2.02	1.55	1.58
F&D Costs	53.90	21.17	21.84	24.84	22.52	19.86	44.55	16.04	15.99	10.07	6.90	9.73	14.59
Return on Capital	30.51	10.48	11.43	13.13	11.17	11.07	24.19	7.62	7.47	4.56	3.71	4.75	7.13
Income Taxes	85.97	21.72	25.31	34.26	24.80	25.02	58.24	15.56	10.34	8.56	6.71	7.93	13.30
Breakeven Oil Price	181.85	61.94	68.67	83.58	71.60	70.83	142.22	50.05	42.01	31.11	26.25	30.75	45.18
Quality Differential	7.01	(1.73)	(1.39)	(4.29)	(12.01)	(7.72)	(0.67)	(2.47)	0.85	(2.92)	(7.39)	(3.15)	(2.52)
Required Brent Price	188.86	60.21	67.28	79.29	59.58	63.11	141.55	47.59	42.86	28.18	18.86	27.59	42.66

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Norway													
Operating Costs	6.64	6.08	7.30	7.74	7.98	8.90	8.43	6.01	4.86	4.69	5.29	4.94	5.81
Exploration Expense	1.86	1.63	1.88	1.92	1.26	2.19	2.04	1.31	0.87	0.80	0.94	0.87	1.18
G&A/Other	-	-	-	-	1.29	2.03	1.10	1.34	0.95	1.57	1.86	1.47	1.37
F&D Costs	69.78	17.40	21.20	16.31	20.17	25.74	40.27	10.71	12.81	8.68	6.45	8.46	11.47
Return on Capital	37.64	8.96	10.85	8.72	10.44	14.08	22.38	5.63	6.69	4.33	3.82	4.57	6.11
Income Taxes	108.86	23.71	28.41	24.46	29.53	34.77	57.71	10.99	9.22	11.26	9.23	9.27	12.88
Breakeven Oil Price	224.78	57.77	69.63	59.16	70.67	87.70	131.93	35.99	35.40	31.33	27.59	29.58	38.82
Quality Differential	6.17	(2.68)	(1.85)	(5.55)	(13.78)	(10.81)	(2.56)	(5.35)	0.23	(2.20)	(6.80)	(2.92)	(3.33)
Required Brent Price	230.96	55.09	67.79	53.61	56.89	76.90	129.37	30.64	35.63	29.14	20.79	26.66	35.49

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Operating Costs	10.84	8.29	11.74	15.05	8.70	9.21	8.74	7.82	6.78	6.62	6.99	6.80	7.36
Exploration Expense	16.52	14.36	14.14	13.10	14.94	11.86	20.04	15.69	12.09	3.23	4.26	6.47	10.81
G&A/Other	-	-	-	-	12.28	10.82	9.70	8.53	7.02	6.71	5.99	6.55	7.53
F&D Costs	45.44	39.75	23.17	49.40	30.03	13.03	53.81	32.29	72.12	19.51	11.76	22.33	42.60
Return on Capital	27.65	20.27	13.89	33.10	15.19	7.41	28.44	12.02	25.54	8.19	5.10	9.03	18.00
Income Taxes	60.66	10.60	16.49	27.13	20.30	9.06	34.76	14.69	31.21	10.22	5.10	10.39	21.22
Breakeven Oil Price	161.10	93.28	79.43	137.79	101.45	61.39	155.50	91.05	154.75	54.49	39.19	61.57	107.51
Quality Differential	11.50	5.37	4.30	8.89	6.04	10.56	13.97	10.82	7.24	1.83	1.29	3.46	7.03
Required Brent Price	172.60	98.66	83.73	146.67	107.49	71.95	169.47	101.87	162.00	56.32	40.48	65.03	114.55

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Equinor (EQNR - OSE, NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.96	9.64	11.06	9.75	10.79	10.13	6.85	6.15	6.15	6.35	7.24	6.57	7.28
Exploration Expense	4.46	5.08	4.99	5.75	6.07	9.28	6.19	5.08	5.08	1.86	2.54	3.18	4.95
G&A/Other	-	-	-	4.95	5.56	4.58	3.81	3.29	3.29	3.79	4.02	3.69	3.88
F&D Costs (1-Year)	26.23	28.93	33.80	31.79	30.94	38.55	26.58	22.76	22.76	11.38	12.82	14.44	19.85
Return on Capital	13.01	14.14	18.64	15.32	15.95	19.03	12.54	10.39	10.39	5.36	6.82	6.99	9.63
Income Taxes	31.74	33.98	43.17	39.73	43.27	72.55	33.88	28.06	28.06	12.80	14.49	16.70	25.68
Breakeven Oil Price	**82.41**	**91.77**	**111.65**	**107.29**	**112.57**	**154.11**	**89.85**	**75.73**	**75.73**	**41.54**	**47.93**	**51.57**	**71.26**
Quality Differential	(1.13)	(0.74)	(3.20)	(10.30)	(5.38)	3.25	(0.13)	2.83	2.83	(1.14)	(5.03)	(1.12)	(0.04)
Required WTI Price	**81.28**	**91.03**	**108.45**	**97.00**	**107.19**	**157.36**	**89.73**	**78.56**	**78.56**	**40.40**	**42.90**	**50.46**	**71.22**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.96	9.64	11.06	9.75	10.79	10.13	6.85	6.15	6.15	6.35	7.24	6.57	7.28
Exploration Expense	4.46	5.08	4.99	5.75	6.07	9.28	6.19	5.08	5.08	1.86	2.54	3.18	4.95
G&A/Other	-	-	-	4.95	5.56	4.58	3.81	3.29	3.29	3.79	4.02	3.69	3.88
F&D Costs (1-Year)	20.01	40.40	49.67	38.55	37.80	34.64	31.32	30.59	30.59	16.29	17.56	19.99	26.08
Return on Capital	9.93	19.83	25.70	18.73	19.69	17.10	14.71	13.92	13.92	7.62	9.36	9.72	12.64
Income Taxes	24.23	47.64	59.51	48.55	53.41	65.21	39.72	37.59	37.59	18.18	19.90	23.22	33.72
Breakeven Oil Price	**65.60**	**122.60**	**150.93**	**126.27**	**133.31**	**140.94**	**102.59**	**96.62**	**96.62**	**54.09**	**60.62**	**66.38**	**88.55**
Quality Differential	(1.13)	(0.74)	(3.20)	(10.30)	(5.38)	3.25	(0.13)	2.83	2.83	(1.14)	(5.03)	(1.12)	(0.04)
Required WTI Price	**64.47**	**121.86**	**147.73**	**115.98**	**127.93**	**144.19**	**102.46**	**99.45**	**99.45**	**52.95**	**55.59**	**65.27**	**88.50**

Source: BMO Capital Markets, Company Reports

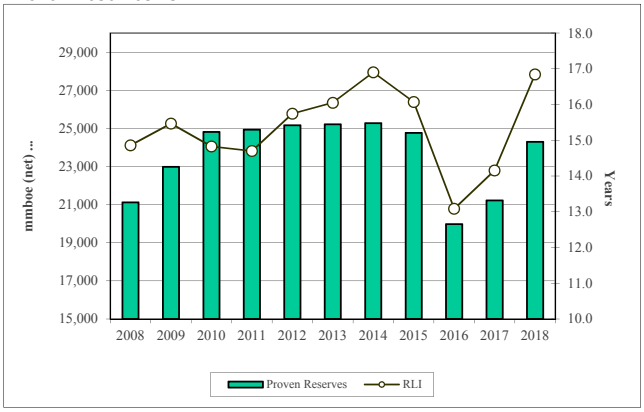
Exxon Mobil (XOM - NYSE)

US$, net

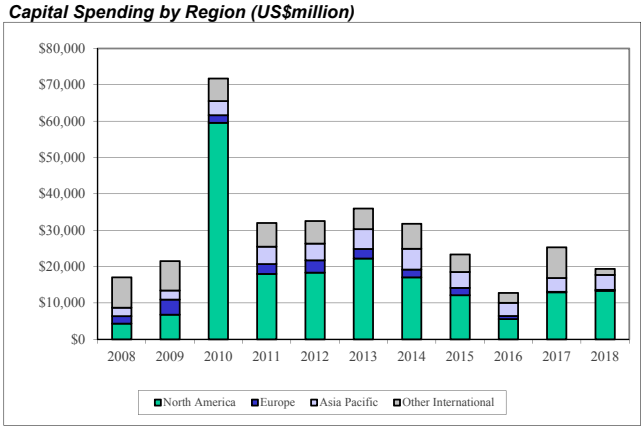
- Exxon Mobil generated results from operations of $8.73/boe in 2018 compared to $3.09/boe in 2017.
- The company's one-year F&D costs came in at $4.22/boe, while the F&D cost excluding revisions were recorded at $11.42/boe versus $13.26/boe last year. On a realized oil:gas price ratio basis, F&D costs were $15.54/boe compared to last year's $9.87/boe, while the costs for PD reserves increased to $19.87/boe from $16.95/boe the previous year.
- Based on 2018 results, we estimate that Exxon requires a Brent breakeven oil price of $80.64/boe on a realized ratio basis on total proved reserves, while its PD costs imply a higher breakeven of $94.70/boe.
- The company posted ROCE of 9.6% in 2018 versus 9.5% (7.4% adjusted) in 2017. The earnings in 2017 benefitted from tax reforms partially offset by impairment charges. Excluding these items, normalized ROCE came in at 7.4%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

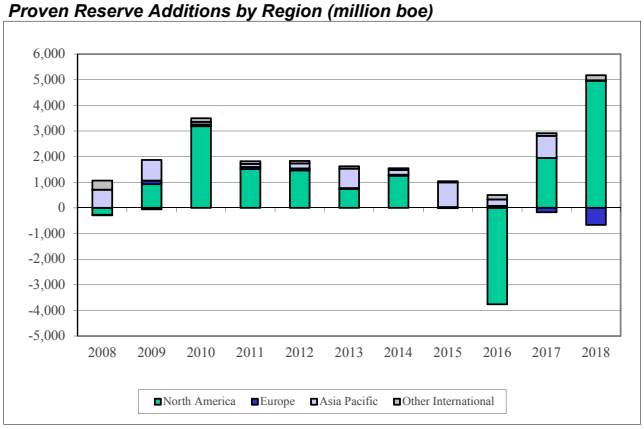
Proven Reserves vs RLI



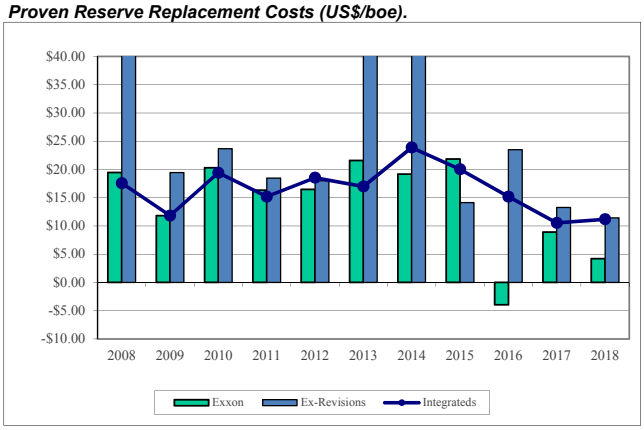
Capital Spending by Region (US$million)



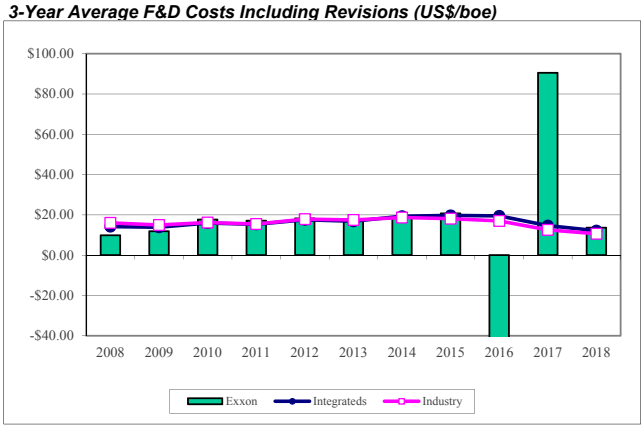
Proven Reserve Additions by Region (million boe)



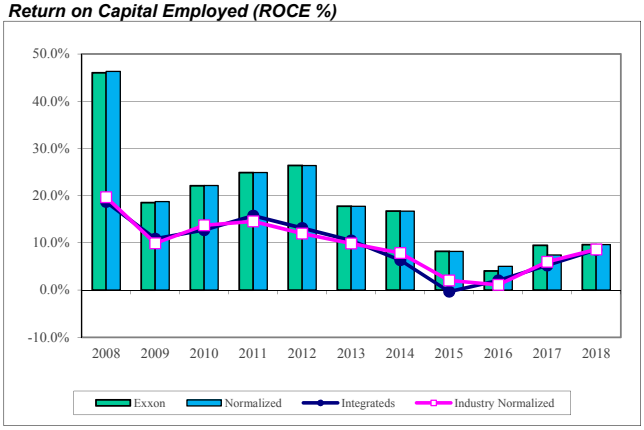
Proven Reserve Replacement Costs (US$/boe).



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

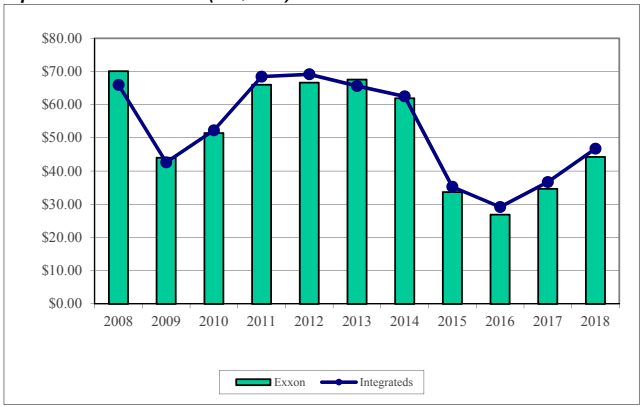
See pages F1 to F4 for analyst coverage.

Exxon Mobil (XOM - NYSE)

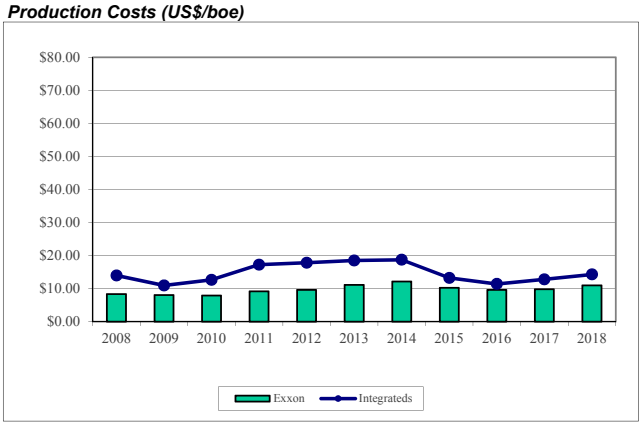
US$/boe, net

Worldwide

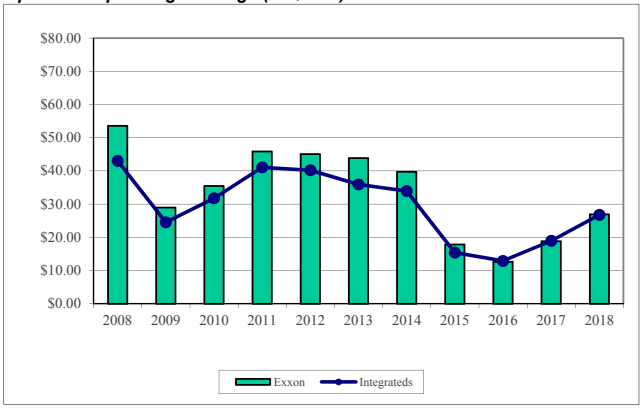
Upstream Net Revenue (US$/boe)



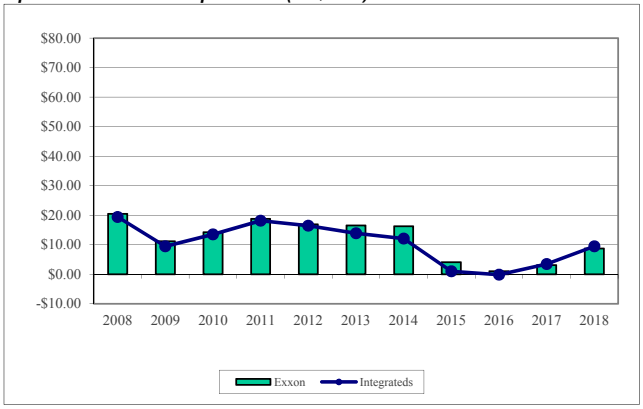
Production Costs (US$/boe)



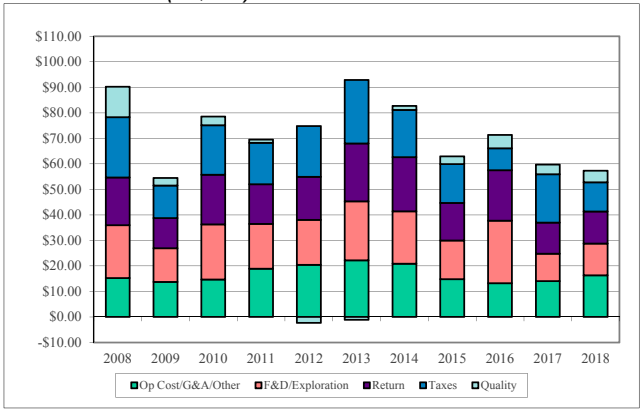
Upstream Operating Earnings (US$/boe)



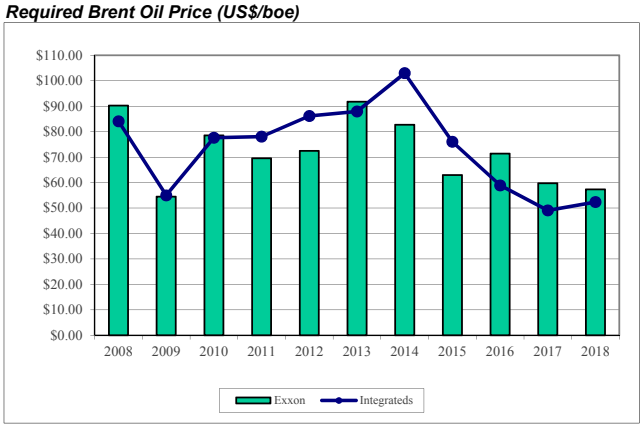
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



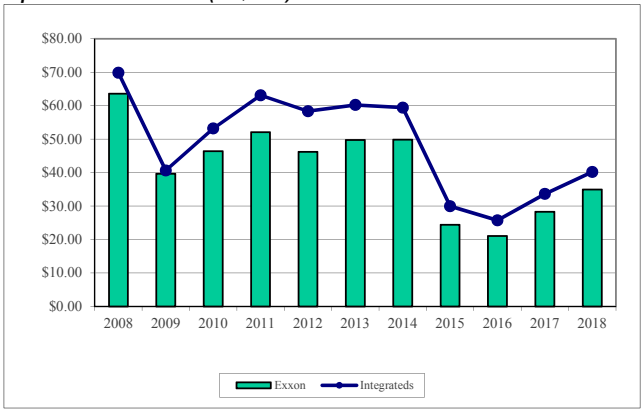
Source: BMO Capital Markets, Company Reports

Exxon Mobil (XOM - NYSE)

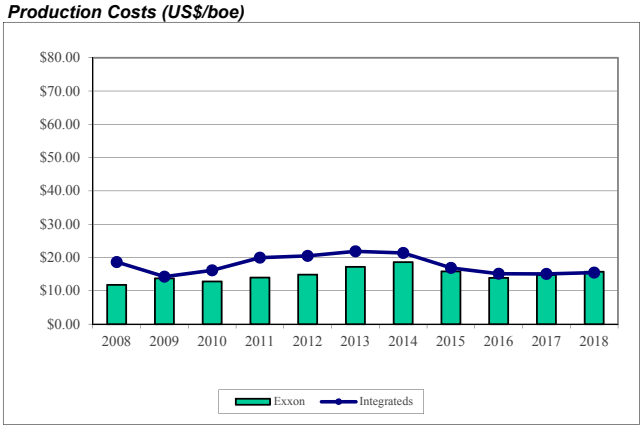
US$/boe, net

North America

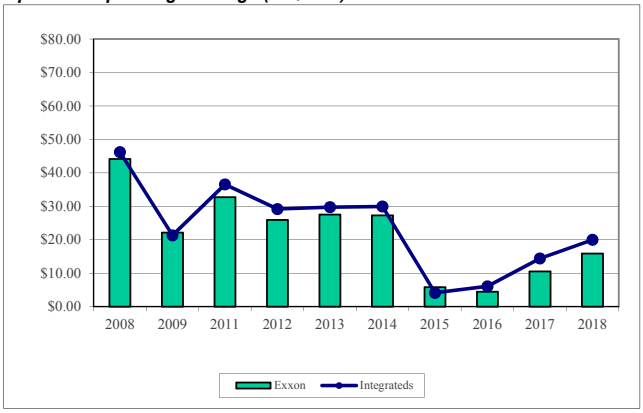
Upstream Net Revenue (US$/boe)



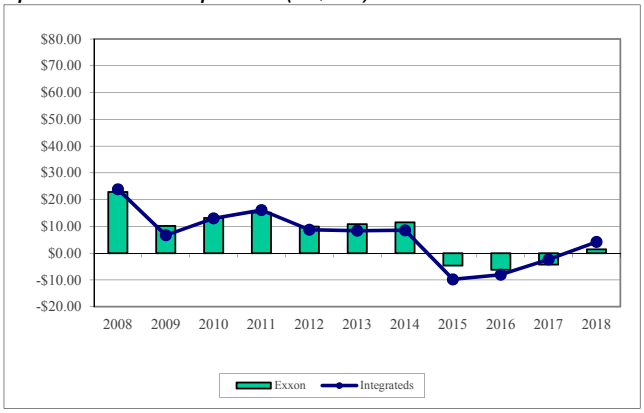
Production Costs (US$/boe)



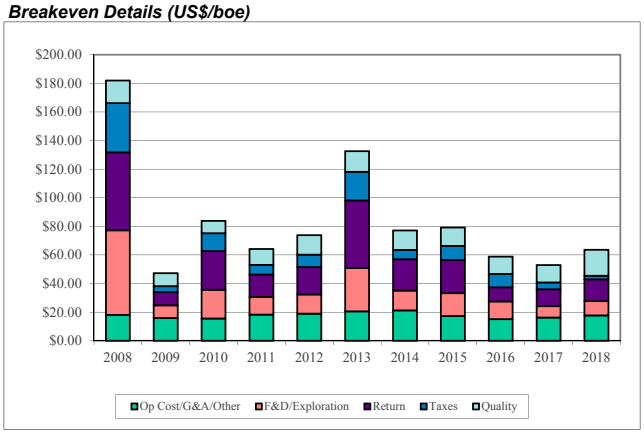
Upstream Operating Earnings (US$/boe)



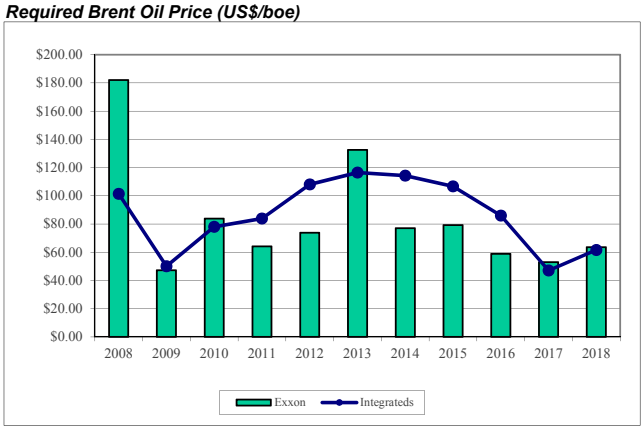
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



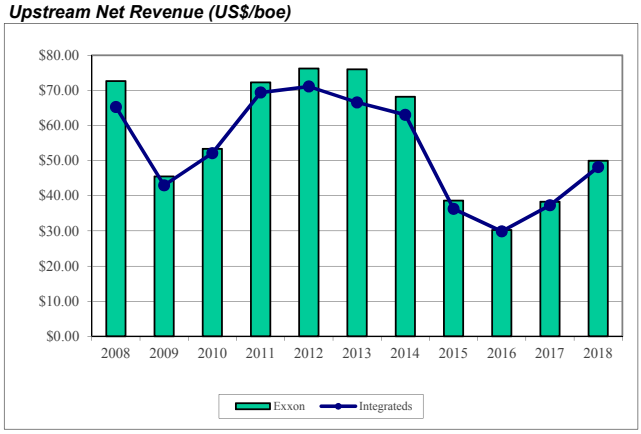
Source: BMO Capital Markets, Company Reports

Exxon Mobil (XOM - NYSE)

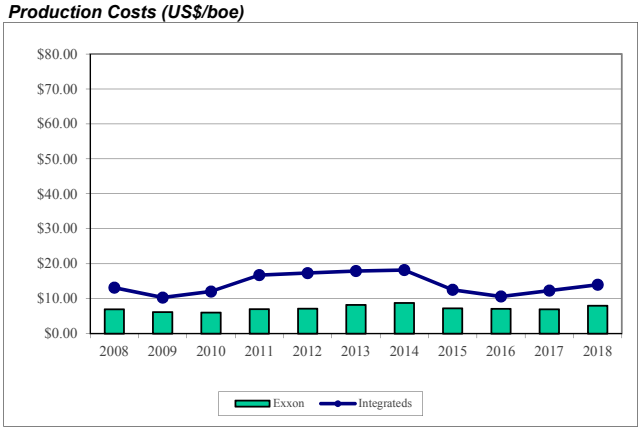
US$/boe, net

Total International

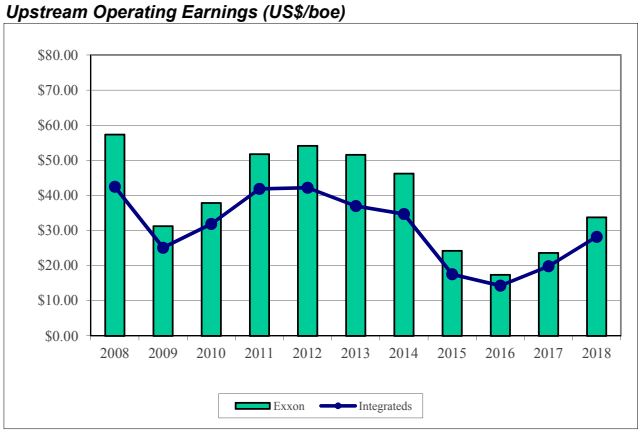
Upstream Net Revenue (US$/boe)



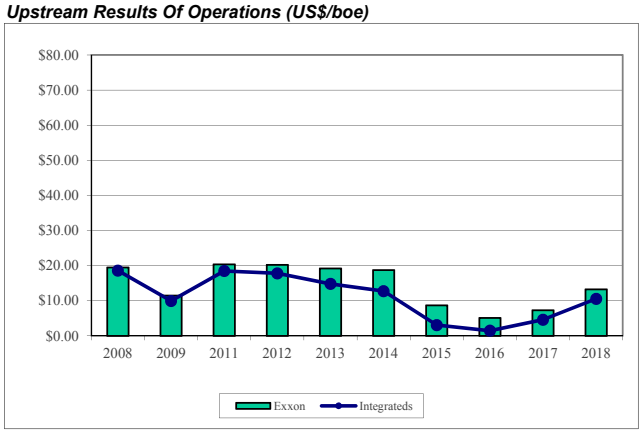
Production Costs (US$/boe)



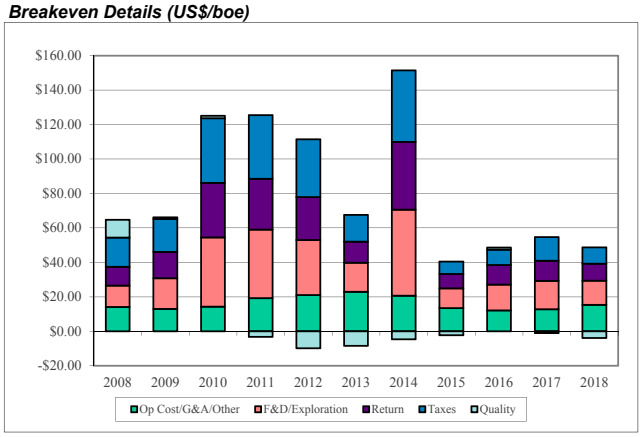
Upstream Operating Earnings (US$/boe)



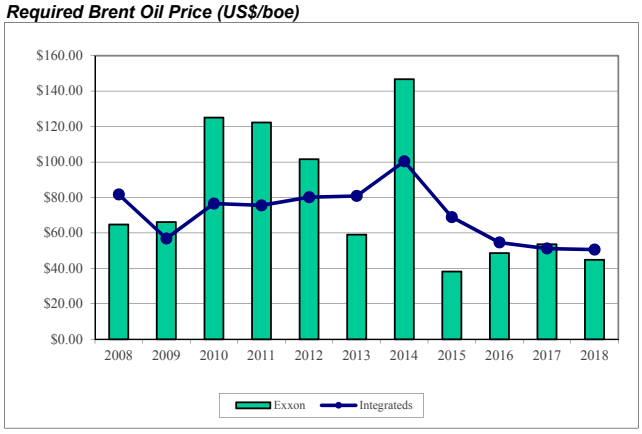
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



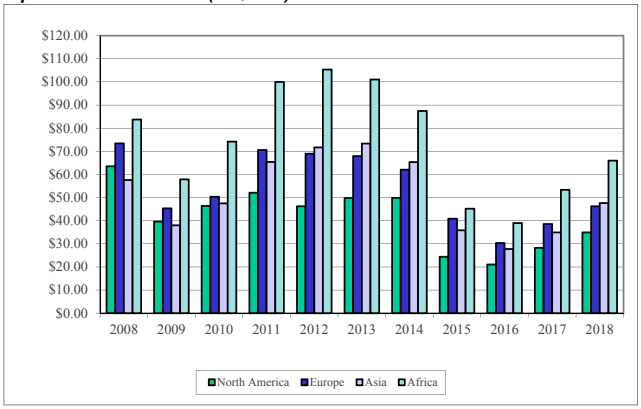
Source: BMO Capital Markets, Company Reports

Exxon Mobil (XOM - NYSE)

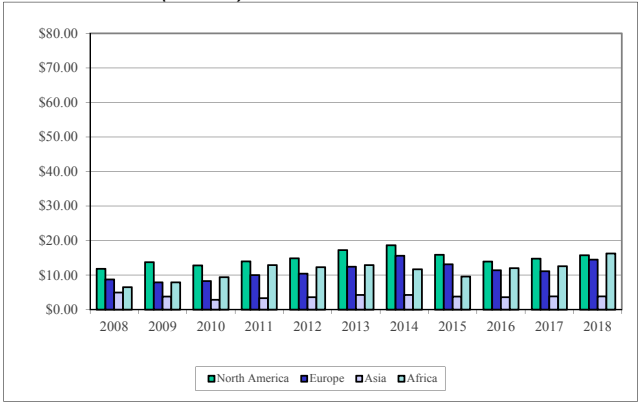
US$/boe, net

International Segments

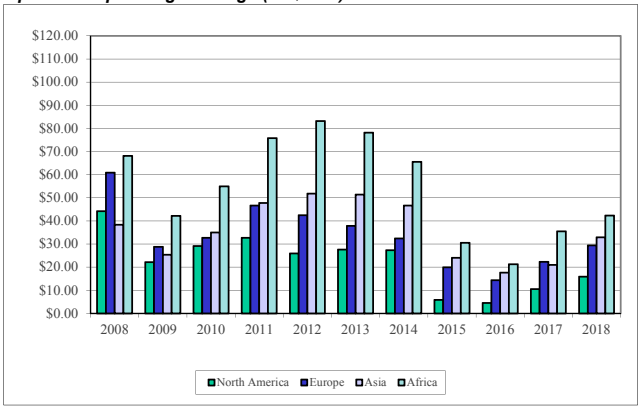
Upstream Net Revenue (US$/boe)



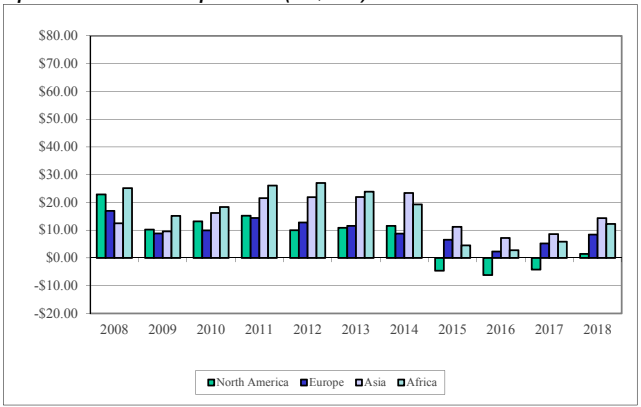
Production Costs (US$/boe)



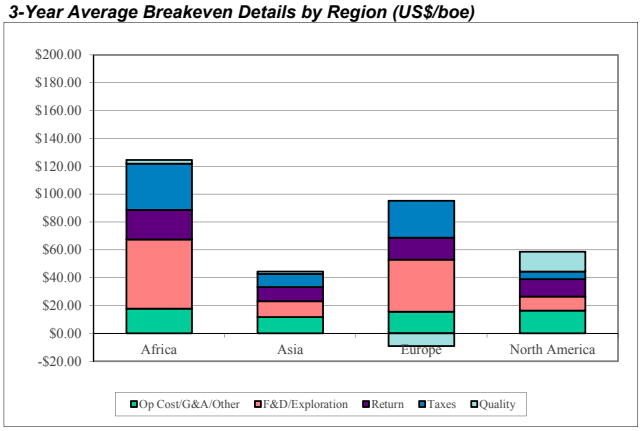
Upstream Operating Earnings (US$/boe)



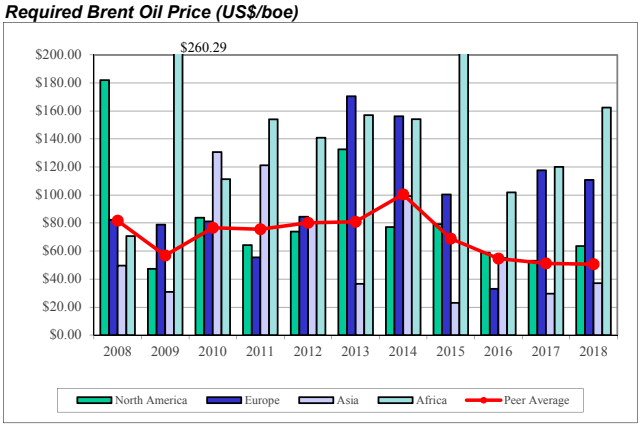
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Exxon Mobil (XOM - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	39,113	24,761	34,941	46,442	40,326	39,061	37,162	24,053	20,180	23,857	25,517
Midstream / Downstream Revenue	420,466	276,739	335,184	420,587	412,797	381,775	356,943	235,435	198,428	213,305	253,815
Other	17,780	9,086	13,096	19,400	29,172	17,419	17,834	9,394	7,486	7,201	10,880
Total Revenue and Other Income	477,359	310,586	383,221	486,429	482,295	438,255	411,939	268,882	226,094	244,363	290,212
Crude Oil and Product Purchases	249,454	152,806	197,959	266,534	265,149	244,156	225,972	130,003	104,171	128,217	156,172
Production and Transportation Expenses	37,905	33,027	35,792	40,268	38,521	40,525	40,859	35,587	31,927	34,128	36,682
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,451	2,021	2,144	2,081	1,840	1,976	1,669	1,523	1,467	1,790	1,466
General and Administrative	15,873	14,735	14,683	14,983	13,877	12,877	12,598	11,501	10,799	10,956	11,480
Depreciation, Depletion and Amortization	12,379	11,917	14,760	15,583	15,888	17,182	17,297	18,048	22,308	19,893	18,745
Interest, net	673	548	259	247	327	9	286	311	453	601	766
Other	76,227	60,755	64,665	73,476	67,967	63,819	61,628	49,943	47,000	30,104	33,948
Earnings Before Income Tax	83,397	34,777	52,959	73,257	78,726	57,711	51,630	21,966	7,969	18,674	30,953
Current Income Taxes	35,131	15,119	22,696	30,909	27,903	23,509	16,475	7,247	3,980	7,147	9,628
Future Income Taxes	1,399	-	(1,135)	142	3,142	754	1,540	(1,832)	(4,386)	(8,321)	(96)
Total Income Taxes	36,530	15,119	21,561	31,051	31,045	24,263	18,015	5,415	(406)	(1,174)	9,532
Minority Interest	(1,647)	(378)	(938)	(1,146)	(2,801)	(868)	(1,095)	(401)	(535)	(138)	(581)
Earnings From Continuing Operations	45,220	19,280	30,460	41,060	44,880	32,580	32,520	16,150	7,840	19,710	20,840
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	45,220	19,280	30,460	41,060	44,880	32,580	32,520	16,150	7,840	19,710	20,840
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	45,220	19,280	30,460	41,060	44,880	32,580	32,520	16,150	7,840	19,710	20,840

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	45,220	19,280	30,460	41,060	44,880	32,580	32,520	16,150	7,840	19,710	20,840
Charges and Credits Not Impacting Cash	13,778	11,917	13,625	15,725	19,030	17,936	18,837	16,216	17,922	11,316	18,685
Other	(1,195)	(1,584)	2,202	1,266	2,972	596	2,665	1,483	(392)	794	(101)
Cash Flow From Operations	57,803	29,613	46,287	58,051	66,882	51,112	54,022	33,849	25,370	31,820	39,424
Changes in Working Capital/Other	1,922	(1,175)	2,126	(2,706)	(10,712)	(6,198)	(8,906)	(3,505)	(3,288)	(1,754)	(3,410)
Net Cash From Operating Activities	59,725	28,438	48,413	55,345	56,170	44,914	45,116	30,344	22,082	30,066	36,014
Total Capital Expenditures	(19,318)	(22,491)	(26,871)	(30,975)	(34,271)	(33,669)	(32,952)	(26,490)	(16,163)	(15,402)	(19,574)
Acquisitions, net	5,985	1,545	3,261	11,133	7,655	2,707	4,035	2,389	4,275	3,103	4,123
Other	(2,166)	(1,473)	(594)	(2,323)	1,015	(3,239)	1,942	277	(515)	(3,431)	(995)
Net Cash From Investing Activities	(15,499)	(22,419)	(24,204)	(22,165)	(25,601)	(34,201)	(26,975)	(23,824)	(12,403)	(15,730)	(16,446)
Net Change in Debt	(527)	(153)	(6,210)	1,957	(2,908)	11,604	6,966	9,255	4,293	(1,048)	(4,925)
Net Change in Common Stock	(35,400)	(18,951)	(12,050)	(21,131)	(20,875)	(15,948)	(13,153)	(4,034)	(971)	(747)	(626)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(8,058)	(8,023)	(8,498)	(9,020)	(10,092)	(10,875)	(11,568)	(12,090)	(12,453)	(13,001)	(13,798)
Other	(42)	(156)	(166)	(62)	7	(257)	(133)	(168)	(162)	(334)	(97)
Net Cash From Financing Activities	(44,027)	(27,283)	(26,924)	(28,256)	(33,868)	(15,476)	(17,888)	(7,037)	(9,293)	(15,130)	(19,446)
Effect of Exchange Rate on Cash	(2,743)	520	(153)	(85)	217	(175)	(281)	(394)	(434)	(257)	(257)
Net Increase/(Decrease) in Cash	(2,544)	(20,744)	(2,868)	4,839	(3,082)	(4,938)	(28)	(911)	(48)	(1,051)	(135)
Cash and Equivalents, Beginning of Year	33,981	31,437	10,693	7,825	12,664	9,582	4,644	4,616	3,705	3,657	2,606
Cash and Equivalents, End of Year	31,437	10,693	7,825	12,664	9,582	4,644	4,616	3,705	3,657	2,606	2,471

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Exxon Mobil (XOM - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	72,266	55,235	58,984	72,963	64,460	59,308	52,910	42,623	41,416	47,134	47,973
Net Property, Plant and Equipment	121,346	139,116	199,548	214,664	226,949	243,650	252,668	251,605	244,224	252,630	247,101
Other Assets	34,440	38,972	43,978	43,425	42,386	43,850	43,915	42,530	44,674	48,927	51,122
Total Assets	228,052	233,323	302,510	331,052	333,795	346,808	349,493	336,758	330,314	348,691	346,196
Total Current Liabilities	49,100	52,061	62,633	77,505	64,139	71,724	64,633	53,976	47,638	57,771	57,138
Long-term Debt	7,025	7,129	12,227	9,322	7,928	6,891	11,653	19,925	28,932	24,406	20,538
Deferred Income Taxes	19,726	23,148	35,150	36,618	37,570	40,530	39,230	36,818	34,041	26,893	27,244
Other Liabilities and Deferred Credits	34,678	35,593	39,821	46,863	52,498	47,168	52,913	49,229	45,873	45,121	42,748
Total Liabilities	110,529	117,931	149,831	170,308	162,135	166,313	168,429	159,948	156,484	154,191	147,668
Minority Interests	4,558	4,823	5,840	6,348	5,797	6,492	6,665	5,999	6,505	6,812	6,734
Common Shares	5,314	5,503	9,371	9,512	9,653	10,077	10,792	11,612	12,157	14,656	15,258
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-		
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	265,680	276,937	298,899	330,939	365,727	387,432	408,384	412,444	407,831	414,540	421,653
Other / Comprehensive Income (Loss)	(158,029)	(171,871)	(161,431)	(186,055)	(209,517)	(223,506)	(244,777)	(253,245)	(252,663)	(241,508)	(245,117)
Total Shareholders' Equity	112,965	110,569	146,839	154,396	165,863	174,003	174,399	170,811	167,325	187,688	191,794
Total Liabilities and Shareholders' Equity	228,052	233,323	302,510	331,052	333,795	346,808	349,493	336,758	330,314	348,691	346,196
Return on Capital Employed (ROCE)	**46.0%**	**18.5%**	**22.1%**	**24.9%**	**26.4%**	**17.8%**	**16.7%**	**8.2%**	**4.0%**	**9.5%**	**9.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	79,568	65,427	86,075	112,000	106,545	106,152	92,612	51,899	41,079	51,940	63,840	156,859	301,370
Production Costs	9,487	11,998	13,203	15,532	15,375	17,498	18,174	15,797	14,673	14,724	15,803	45,200	79,171
Exploration	1,441	2,034	2,169	2,104	1,866	2,436	1,971	1,574	1,524	2,682	1,476	5,682	9,227
DD&A	8,334	8,697	11,636	12,534	13,201	14,410	13,913	14,719	17,185	16,364	14,810	48,359	76,991
G&A/Other	7,825	8,377	11,391	16,585	17,230	17,333	13,059	7,054	5,535	6,317	7,701	19,553	39,666
Pre-tax Results Of Operations	52,481	34,321	47,676	65,245	58,873	54,475	45,495	12,755	2,162	11,853	24,050	38,065	96,315
Income Taxes	29,282	17,750	23,828	33,406	31,810	28,520	21,170	6,485	658	7,214	11,455	19,327	46,982
Results Of Operations	23,199	16,571	23,848	31,839	27,063	25,955	24,325	6,270	1,504	4,639	12,595	18,738	49,333

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	20,614	14,898	21,333	27,366	23,626	25,148	25,428	13,068	11,760	15,476	19,195	46,431	84,927
Production Costs	3,829	5,164	5,887	7,340	7,590	8,707	9,508	8,496	7,768	8,086	8,661	24,515	42,519
Exploration	421	559	751	568	692	799	655	667	792	810	672	2,274	3,596
DD&A	2,209	2,781	4,522	5,795	5,886	6,122	6,323	6,640	9,209	9,014	7,826	26,049	39,012
G&A/Other	2,041	845	1,306	2,272	2,094	1,711	1,333	788	687	814	1,119	2,620	4,741
Pre-tax Results Of Operations	12,114	5,549	8,867	11,391	7,364	7,809	7,609	-3,523	-6,696	-3,248	917	-9,027	-4,941
Income Taxes	4,692	1,724	2,808	3,414	2,281	2,330	1,732	-1,055	-3,231	-932	129	-4,034	-3,357
Results Of Operations	7,422	3,825	6,059	7,977	5,083	5,479	5,877	-2,468	-3,465	-2,316	788	-4,993	-1,584

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	58,954	50,529	64,742	84,634	82,919	81,004	67,184	38,831	29,319	36,464	44,645	110,428	216,443
Production Costs	5,658	6,834	7,316	8,192	7,785	8,791	8,666	7,301	6,905	6,638	7,142	20,685	36,652
Exploration	1,020	1,475	1,418	1,536	1,174	1,637	1,316	907	732	1,872	804	3,408	5,631
DD&A	6,125	5,916	7,114	6,739	7,315	8,288	7,590	8,079	7,976	7,350	6,984	22,310	37,979
G&A/Other	5,784	7,532	10,085	14,313	15,136	15,622	11,726	6,266	4,848	5,503	6,582	16,933	34,925
Pre-tax Results Of Operations	40,367	28,772	38,809	53,854	51,509	46,666	37,886	16,278	8,858	15,101	23,133	47,092	101,256
Income Taxes	24,590	16,026	21,020	29,992	29,529	26,190	19,438	7,540	3,889	8,146	11,326	23,361	50,339
Results Of Operations	15,777	12,746	17,789	23,862	21,980	20,476	18,448	8,738	4,969	6,955	11,807	23,731	50,917

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Exxon Mobil (XOM - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$70.08	$44.03	$51.44	$66.03	$66.65	$67.57	$61.95	$33.69	$26.91	$34.65	$44.26	$35.11	$40.16
Production Costs	$8.36	$8.07	$7.89	$9.16	$9.62	$11.14	$12.16	$10.25	$9.61	$9.82	$10.96	$10.12	$10.55
Exploration	$1.27	$1.37	$1.30	$1.24	$1.17	$1.55	$1.32	$1.02	$1.00	$1.79	$1.02	$1.27	$1.23
DD&A	$7.34	$5.85	$6.95	$7.39	$8.26	$9.17	$9.31	$9.55	$11.26	$10.92	$10.27	$10.82	$10.26
G&A/Other	$6.89	$5.64	$6.81	$9.78	$10.78	$11.03	$8.74	$4.58	$3.63	$4.21	$5.34	$4.38	$5.29
Pre-tax Results Of Operations	$46.23	$23.10	$28.49	$38.47	$36.83	$34.68	$30.43	$8.28	$1.42	$7.91	$16.67	$8.52	$12.84
Income Taxes	$25.79	$11.94	$14.24	$19.69	$19.90	$18.15	$14.16	$4.21	$0.43	$4.81	$7.94	$4.33	$6.26
Results Of Operations	$20.43	$11.15	$14.25	$18.77	$16.93	$16.52	$16.27	$4.07	$0.99	$3.09	$8.73	$4.19	$6.57

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$63.56	$39.64	$46.38	$52.10	$46.22	$49.76	$49.83	$24.41	$21.06	$28.27	$34.93	$28.05	$31.44
Production Costs	$11.81	$13.74	$12.80	$13.97	$14.85	$17.23	$18.63	$15.87	$13.91	$14.77	$15.76	$14.81	$15.74
Exploration	$1.30	$1.49	$1.63	$1.08	$1.35	$1.58	$1.28	$1.25	$1.42	$1.48	$1.22	$1.37	$1.33
DD&A	$6.81	$7.40	$9.83	$11.03	$11.52	$12.11	$12.39	$12.40	$16.49	$16.46	$14.24	$15.74	$14.44
G&A/Other	$6.29	$2.25	$2.84	$4.33	$4.10	$3.39	$2.61	$1.47	$1.23	$1.49	$2.04	$1.58	$1.76
Pre-tax Results Of Operations	$37.35	$14.76	$19.28	$21.69	$14.41	$15.45	$14.91	-$6.58	-$11.99	-$5.93	$1.67	-$5.45	-$1.83
Income Taxes	$14.47	$4.59	$6.10	$6.50	$4.46	$4.61	$3.39	-$1.97	-$5.79	-$1.70	$0.23	-$2.44	-$1.24
Results Of Operations	$22.88	$10.18	$13.17	$15.19	$9.94	$10.84	$11.52	-$4.61	-$6.21	-$4.23	$1.43	-$3.02	-$0.59

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$72.69	$45.51	$53.36	$72.28	$76.26	$76.02	$68.23	$38.64	$30.28	$38.32	$50.01	$39.26	$45.07
Production Costs	$6.98	$6.16	$6.03	$7.00	$7.16	$8.25	$8.80	$7.26	$7.13	$6.98	$8.00	$7.35	$7.63
Exploration	$1.26	$1.33	$1.17	$1.31	$1.08	$1.54	$1.34	$0.90	$0.76	$1.97	$0.90	$1.21	$1.17
DD&A	$7.55	$5.33	$5.86	$5.76	$6.73	$7.78	$7.71	$8.04	$8.24	$7.72	$7.82	$7.93	$7.91
G&A/Other	$7.13	$6.78	$8.31	$12.22	$13.92	$14.66	$11.91	$6.23	$5.01	$5.78	$7.37	$6.02	$7.27
Pre-tax Results Of Operations	$49.77	$25.92	$31.99	$45.99	$47.37	$43.79	$38.48	$16.20	$9.15	$15.87	$25.91	$16.74	$21.09
Income Taxes	$30.32	$14.44	$17.32	$25.61	$27.16	$24.58	$19.74	$7.50	$4.02	$8.56	$12.69	$8.31	$10.48
Results Of Operations	$19.45	$11.48	$14.66	$20.38	$20.21	$19.22	$18.74	$8.69	$5.13	$7.31	$13.23	$8.44	$10.60

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$83.75	$57.86	$74.19	$100.01	$105.34	$101.05	$87.46	$45.15	$38.97	$53.33	$65.96	$51.84	$57.90
Production Costs	$6.50	$7.88	$9.38	$12.91	$12.26	$12.87	$11.68	$9.56	$11.99	$12.56	$16.25	$13.47	$12.18
Exploration	$1.78	$2.57	$2.49	$1.15	$1.20	$1.55	$2.22	$1.53	$1.58	$1.89	$2.10	$1.84	$1.85
DD&A	$10.02	$8.92	$10.92	$10.68	$14.74	$17.55	$17.60	$18.59	$19.33	$17.99	$18.43	$18.62	$18.39
G&A/Other	$7.36	$5.22	$7.38	$10.17	$8.71	$8.50	$8.00	$3.52	$4.12	$3.40	$5.28	$4.24	$4.87
Pre-tax Results Of Operations	$58.08	$33.27	$44.03	$65.10	$68.43	$60.58	$47.95	$11.95	$1.95	$17.48	$23.90	$13.68	$20.60
Income Taxes	$32.94	$18.15	$25.69	$39.03	$41.42	$36.74	$28.66	$7.47	-$0.81	$11.63	$11.67	$7.05	$11.76
Results Of Operations	$25.14	$15.12	$18.33	$26.07	$27.01	$23.84	$19.29	$4.48	$2.75	$5.85	$12.23	$6.64	$8.84

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia													
Net Revenue	$57.60	$37.99	$47.50	$65.41	$71.68	$73.33	$65.31	$35.83	$27.72	$34.92	$47.62	$36.70	$42.14
Production Costs	$4.94	$3.76	$2.85	$3.29	$3.61	$4.24	$4.24	$3.80	$3.61	$3.83	$3.81	$3.75	$3.86
Exploration	$1.46	$0.84	$0.63	$0.99	$0.89	$1.74	$1.01	$0.52	$0.44	$2.69	$0.43	$1.19	$1.02
DD&A	$3.40	$2.05	$2.80	$3.62	$4.25	$4.61	$3.25	$3.88	$4.03	$4.42	$5.09	$4.51	$4.14
G&A/Other	$12.84	$8.05	$9.01	$13.39	$15.39	$16.00	$13.46	$7.48	$6.05	$7.45	$10.50	$7.99	$8.96
Pre-tax Results Of Operations	$34.95	$23.28	$32.21	$44.11	$47.55	$46.74	$43.35	$20.14	$13.58	$16.53	$27.79	$19.25	$24.17
Income Taxes	$22.49	$13.75	$16.03	$22.59	$25.66	$24.83	$19.98	$8.96	$6.37	$7.97	$13.44	$9.24	$11.29
Results Of Operations	$12.46	$9.53	$16.18	$21.52	$21.89	$21.91	$23.37	$11.18	$7.21	$8.56	$14.35	$10.02	$12.88

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$73.42	$45.31	$50.32	$70.58	$69.00	$67.95	$62.05	$40.84	$30.32	$38.59	$46.22	$37.49	$44.20
Production Costs	$8.71	$7.88	$8.28	$10.00	$10.40	$12.43	$15.59	$13.11	$11.41	$11.11	$14.48	$12.15	$13.20
Exploration	$0.60	$1.04	$1.14	$2.02	$1.08	$0.97	$1.24	$0.98	$0.64	$0.60	$1.00	$0.72	$0.90
DD&A	$8.34	$6.05	$7.48	$6.88	$6.33	$7.68	$8.91	$8.38	$8.94	$6.80	$5.79	$7.35	$7.95
G&A/Other	$3.23	$7.61	$8.24	$11.94	$15.10	$16.73	$12.84	$6.84	$3.93	$4.60	$1.31	$3.44	$6.47
Pre-tax Results Of Operations	$52.54	$22.73	$25.18	$39.74	$36.08	$30.13	$23.48	$11.54	$5.41	$15.50	$23.65	$13.83	$15.68
Income Taxes	$35.60	$13.95	$15.25	$25.33	$23.34	$18.57	$14.70	$5.02	$3.10	$10.29	$15.25	$8.88	$9.45
Results Of Operations	$16.94	$8.78	$9.93	$14.41	$12.75	$11.56	$8.77	$6.52	$2.30	$5.21	$8.39	$4.96	$6.23

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Exxon Mobil (XOM - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	8,890.4	10,126.0	12,991.8	14,024.7	13,142.5	12,641.1	11,950.7	11,301.4	10,928.8	10,980.8	10,147.9	10,685.8	11,061.9
Liquids Production (b/d)	2,411,589	2,383,562	2,419,178	2,309,589	2,189,041	2,197,260	2,104,110	2,336,986	2,360,917	2,276,712	2,260,274	2,299,301	2,267,800
Total Production (boe/d)	3,893,324	4,071,233	4,584,475	4,647,032	4,379,452	4,304,110	4,095,890	4,220,548	4,182,379	4,106,849	3,951,598	4,080,275	4,111,453
% Gas Production	38%	41%	47%	50%	50%	49%	49%	45%	44%	45%	43%	44%	45%
% Oil Production	62%	59%	53%	50%	50%	51%	51%	55%	56%	55%	57%	56%	55%
Proven Reserves:													
Gas Reserves (bcf)	65,879.0	68,007.0	78,815.0	76,222.0	74,091.0	71,860.0	69,338.0	60,210.0	56,503.0	55,151.0	51,816.0	54,490.0	58,603.6
Oil Reserves (mmbbls)	10,135.0	11,651.0	11,673.0	12,228.0	12,816.0	13,239.0	13,713.0	14,724.0	10,557.0	12,029.0	15,657.0	12,747.7	13,336.0
Total Proven Reserves (mmboe)	21,114.8	22,985.5	24,808.8	24,931.7	25,164.5	25,215.7	25,269.3	24,759.0	19,974.2	21,220.8	24,293.0	21,829.3	23,103.3
% Gas Reserves	52%	49%	53%	51%	49%	47%	46%	41%	47%	43%	36%	42%	42%
% Oil Reserves	48%	51%	47%	49%	51%	53%	54%	59%	53%	57%	64%	58%	58%
Proven Reserve Life Index	14.9	15.5	14.8	14.7	15.7	16.1	16.9	16.1	13.1	14.2	16.8	14.7	15.4
Proven Reserve Additions:													
Gas Additions (bcf)	862.0	5,824.0	15,550.0	2,526.0	2,666.0	2,383.0	1,840.0	-5,003.0	282.0	2,656.0	369.0	3,307.0	144.0
Oil Additions (mmbbls)	635.2	845.0	905.0	1,398.0	1,387.0	1,225.0	1,242.0	1,864.0	-3,305.3	2,303.0	4,453.0	3,450.7	6,556.7
Total Additions (mmboe)	778.9	1,815.7	3,496.7	1,819.0	1,831.3	1,622.2	1,548.7	1,030.2	-3,258.3	2,745.7	4,514.5	4,001.9	6,580.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	298.2	1,106.0	520.3	1,613.0	1,503.5	725.7	549.2	1,407.2	424.4	978.5	1,668.2	3,071.1	5,027.4
Acquisitions	0.0	1.3	2,510.5	118.5	303.8	169.5	64.0	246.3	119.6	928.3	27.3	1,075.3	1,385.6
Dispositions	(96.2)	(5.2)	(38.7)	(141.2)	(144.8)	(43.0)	(109.8)	(39.5)	(34.8)	(86.7)	(77.5)	(198.9)	(348.3)
Revisions of Estimates	576.8	713.5	504.5	228.7	168.8	770.0	1,045.3	-583.8	-3,767.5	925.5	2,896.5	54.5	516.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	38.3%	60.9%	14.9%	88.7%	82.1%	44.7%	35.5%	136.6%	-13.0%	35.6%	37.0%	76.7%	76.4%
Acquisitions	0.0%	0.1%	71.8%	6.5%	16.6%	10.4%	4.1%	23.9%	-3.7%	33.8%	0.6%	26.9%	21.1%
Dispositions	-12.3%	-0.3%	-1.1%	-7.8%	-7.9%	-2.7%	-7.1%	-3.8%	1.1%	-3.2%	-1.7%	-5.0%	-5.3%
Revisions of Estimates	74.1%	39.3%	14.4%	12.6%	9.2%	47.5%	67.5%	-56.7%	115.6%	33.7%	64.2%	1.4%	7.8%
Additions as % of Production:													
Gas	26.6%	157.6%	327.9%	49.3%	55.6%	51.6%	42.2%	-121.3%	7.1%	66.3%	10.0%	28.3%	0.7%
Oil	72.2%	97.1%	102.5%	165.8%	173.6%	152.7%	161.7%	218.5%	-383.6%	277.1%	539.8%	137.1%	158.4%
Total	54.8%	122.2%	209.0%	107.2%	114.6%	103.3%	103.6%	66.9%	-213.4%	183.2%	313.0%	89.6%	87.7%
Additions as % of Reserves:													
Gas	1.3%	8.6%	19.7%	3.3%	3.6%	3.3%	2.7%	-8.3%	0.5%	4.8%	0.7%	6.1%	0.2%
Oil	6.3%	7.3%	7.8%	11.4%	10.8%	9.3%	9.1%	12.7%	-31.3%	19.1%	28.4%	27.1%	49.2%
Total	3.7%	7.9%	14.1%	7.3%	7.3%	6.4%	6.1%	4.2%	-16.3%	12.9%	18.6%	18.3%	28.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$2,241.0	$3,111.0	$3,055.0	$2,503.0	$2,861.0	$2,972.0	$3,472.0	$2,245.0	$1,700.0	$2,524.0	$2,238.0	$6,462.0	$12,179.0
Development	$14,131.0	$17,130.0	$23,210.0	$25,690.0	$27,482.0	$27,807.0	$26,848.0	$20,629.0	$10,811.0	$9,105.0	$14,421.0	$34,337.0	$81,814.0
Acquisitions	$663.0	$1,285.0	$45,461.0	$3,787.0	$2,207.0	$5,186.0	$1,472.0	$477.0	$270.0	$13,664.0	$2,700.0	$16,634.0	$18,583.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$17,035.0	$21,526.0	$71,726.0	$31,980.0	$32,550.0	$35,965.0	$31,792.0	$23,351.0	$12,781.0	$25,293.0	$19,359.0	$57,433.0	$112,576.0
Expenditures as % of Total:													
Exploration	13.2%	14.5%	4.3%	7.8%	8.8%	8.3%	10.9%	9.6%	13.3%	10.0%	11.6%	11.3%	10.8%
Development	83.0%	79.6%	32.4%	80.3%	84.4%	77.3%	84.4%	88.3%	84.6%	36.0%	74.5%	59.8%	72.7%
Acquisitions	3.9%	6.0%	63.4%	11.8%	6.8%	14.4%	4.6%	2.0%	2.1%	54.0%	13.9%	29.0%	16.5%
Cashflow (US$million)	$32,974.0	$27,302.0	$37,653.0	$46,477.0	$42,130.0	$42,801.0	$40,209.0	$22,563.0	$20,213.0	$23,684.8	$28,881.0	$72,778.8	$135,550.8
Cashflow (US$/boe)	$23.20	$18.37	$22.50	$27.40	$26.36	$27.24	$26.90	$14.65	$13.24	$15.80	$20.02	$16.29	$18.07
Recycle Ratio	1.2x	1.6x	1.1x	1.7x	1.6x	1.3x	1.4x	0.7x	-3.3x	1.8x	4.7x	1.2x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$18.71	$11.12	$25.63	$15.31	$18.14	$20.58	$19.02	$27.78	-$3.74	$6.11	$3.65	$13.05	$16.96
Acquisition Costs	na	$963.75	$18.11	$31.96	$7.26	$30.60	$23.00	$1.94	$2.26	$14.72	$98.78	$15.47	$13.41
All Sources (incl. revisions)	$19.47	$11.82	$20.29	$16.31	$16.47	$21.60	$19.17	$21.83	-$3.96	$8.93	$4.22	$13.67	$16.25
Exploration & Development (excl. revisions)	$54.90	$18.30	$50.48	$17.48	$20.18	$42.41	$55.21	$16.26	$29.48	$11.88	$9.99	$13.28	$18.70
Acquisition Costs	na	$963.75	$18.11	$31.96	$7.26	$30.60	$23.00	$1.94	$2.26	$14.72	$98.78	$15.47	$13.41
All Sources (excl. revisions)	$57.12	$19.44	$23.67	$18.47	$18.01	$40.18	$51.85	$14.12	$23.49	$13.26	$11.42	$13.85	$17.55
Geographically Segmented Costs													
North America	-$16.61	$7.32	$18.47	$11.26	$12.10	$12.58	$12.58	$7,284.17	-$1.50	$6.51	$2.66	$9.71	$13.15
Europe	$163.84	$28.69	$30.46	$20.87	$31.48	$64.49	$58.88	$46.58	$9.84	-$1.19	-$0.44	-$1.80	-$8.81
Asia Pacific	$3.29	$3.12	$38.51	$37.79	$23.56	$7.18	$29.92	$4.44	$14.48	$4.36	$191.48	$10.10	$9.34
Other International	$20.19	nm	$43.40	$61.19	$39.43	$63.86	$90.02	$114.83	$16.10	$80.97	$8.14	$26.99	$41.37

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Exxon Mobil (XOM - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	8.36	8.07	7.89	9.16	9.62	11.14	12.16	10.25	9.61	9.82	9.82	10.12	10.55
Exploration Expense	1.27	1.37	1.30	1.24	1.17	1.55	1.32	1.02	1.00	1.79	1.79	1.27	1.23
G&A/Other	6.89	5.64	6.81	9.78	10.78	11.03	8.74	4.58	3.63	4.21	4.21	4.38	5.29
F&D Costs	19.47	11.82	20.29	16.31	16.47	21.60	19.17	14.12	23.49	8.93	8.93	14.61	15.43
Return on Capital	18.71	11.87	19.45	15.51	16.90	22.66	21.28	14.73	19.76	12.19	12.19	15.26	16.33
Income Taxes	23.62	12.71	19.44	16.28	19.87	24.90	18.52	15.23	8.64	18.96	18.96	13.17	14.63
Breakeven Oil Price	78.32	51.49	75.17	68.28	74.80	92.87	81.18	59.94	66.13	55.91	55.91	58.81	63.46
Quality Differential	11.93	3.00	3.40	1.26	(2.33)	(1.10)	1.55	3.00	5.23	3.80	3.80	4.52	3.62
Required WTI Price	90.24	54.48	78.57	69.54	72.47	91.77	82.72	62.94	71.36	59.71	59.71	63.33	67.08

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	11.81	13.74	12.80	13.97	14.85	17.23	18.63	15.87	13.91	14.77	14.77	14.81	15.74
Exploration Expense	1.30	1.49	1.63	1.08	1.35	1.58	1.28	1.25	1.42	1.48	1.48	1.37	1.33
G&A/Other	6.29	2.25	2.84	4.33	4.10	3.39	2.61	1.47	1.23	1.49	1.49	1.58	1.76
F&D Costs	57.84	7.32	18.47	11.26	12.10	28.73	12.58	14.76	10.93	6.51	6.51	8.72	10.70
Return on Capital	54.48	9.21	26.94	15.69	19.19	47.17	21.94	23.09	9.96	11.77	11.77	12.49	16.19
Income Taxes	34.44	4.15	12.49	6.72	8.61	20.06	6.47	9.87	9.28	4.74	4.74	5.44	6.53
Breakeven Oil Price	166.16	38.15	75.18	53.05	60.20	118.16	63.51	66.31	46.73	40.76	40.76	44.41	52.24
Quality Differential	15.84	9.09	8.61	11.15	13.67	14.44	13.57	12.91	12.11	12.24	12.24	14.17	13.80
Required WTI Price	182.00	47.24	83.79	64.20	73.87	132.60	77.08	79.22	58.84	52.99	52.99	58.58	66.04

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	6.98	6.16	6.03	7.00	7.16	8.25	8.80	7.26	7.13	6.98	6.98	7.35	7.63
Exploration Expense	1.26	1.33	1.17	1.31	1.08	1.54	1.34	0.90	0.76	1.97	1.97	1.21	1.17
G&A/Other	7.13	6.78	8.31	12.22	13.92	14.66	11.91	6.23	5.01	5.78	5.78	6.02	7.27
F&D Costs	11.19	16.50	38.95	38.51	30.85	15.41	48.52	10.51	14.26	14.60	14.60	27.84	22.51
Return on Capital	10.88	15.25	31.71	29.44	24.93	12.15	39.38	8.38	11.34	11.67	11.67	22.46	17.82
Income Taxes	16.95	19.17	37.47	37.01	33.49	15.55	41.49	7.23	8.88	13.67	13.67	21.52	17.05
Breakeven Oil Price	54.38	65.19	123.64	125.50	111.44	67.55	151.43	40.52	47.37	54.66	54.66	86.41	73.45
Quality Differential	10.36	0.94	1.43	(3.18)	(9.86)	(8.47)	(4.68)	(2.27)	1.27	(1.05)	(1.05)	(1.22)	(2.12)
Required WTI Price	64.74	66.13	125.06	122.32	101.58	59.08	146.75	38.25	48.64	53.61	53.61	85.19	71.33

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	6.50	7.88	9.38	12.91	12.26	12.87	11.68	9.56	11.99	12.56	16.25	13.47	12.18
Exploration Expense	1.78	2.57	2.49	1.15	1.20	1.55	2.22	1.53	1.58	1.89	2.10	1.84	1.85
G&A/Other	7.36	5.22	7.38	10.17	8.71	8.50	8.00	3.52	4.12	3.40	5.28	4.24	4.87
F&D Costs	17.86	114.74	37.81	49.88	49.44	54.31	57.01	90.40	38.85	49.82	64.91	47.90	56.18
Return on Capital	10.39	57.28	20.70	28.75	26.21	29.58	26.52	35.30	15.72	20.43	27.31	21.15	22.87
Income Taxes	13.61	68.76	29.01	43.05	40.19	45.58	39.42	58.81	24.56	32.06	43.65	33.34	36.02
Breakeven Oil Price	57.51	256.45	106.77	145.90	138.01	152.38	144.85	199.13	96.82	120.16	159.50	121.93	133.97
Quality Differential	13.16	3.72	4.51	8.15	2.88	4.59	9.24	7.11	5.00	(0.07)	2.92	2.62	4.84
Required WTI Price	70.67	260.17	111.28	154.05	140.89	156.98	154.09	206.24	101.82	120.09	162.42	124.54	138.81

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia													
Operating Costs	4.94	3.76	2.85	3.29	3.61	4.24	4.24	3.80	3.61	3.83	3.81	3.75	3.86
Exploration Expense	1.46	0.84	0.63	0.99	0.89	1.74	1.01	0.52	0.44	2.69	0.43	1.19	1.02
G&A/Other	12.84	8.05	9.01	13.39	15.39	16.00	13.46	7.48	6.05	7.45	10.50	7.99	8.96
F&D Costs	3.29	3.12	38.51	37.79	23.56	7.18	29.92	4.44	14.48	4.36	7.76	10.10	9.34
Return on Capital	3.28	4.67	38.00	31.64	20.16	6.39	29.69	4.46	14.33	4.54	7.78	10.21	9.38
Income Taxes	5.92	6.74	37.65	33.21	23.64	7.23	25.38	3.58	12.67	4.23	7.29	9.36	8.26
Breakeven Oil Price	31.72	27.18	126.66	120.31	87.24	42.79	103.70	24.28	51.59	27.10	37.57	42.60	40.82
Quality Differential	17.91	3.61	4.02	0.90	(7.10)	(6.24)	(4.50)	(1.30)	3.37	2.50	(0.52)	1.79	(0.09)
Required WTI Price	49.63	30.79	130.67	121.21	80.15	36.55	99.20	22.98	54.96	29.60	37.05	44.38	40.73

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	8.71	7.88	8.28	10.00	10.40	12.43	15.59	13.11	11.41	11.11	14.48	12.15	13.20
Exploration Expense	0.60	1.04	1.14	2.02	1.08	0.97	1.24	0.98	0.64	0.60	1.00	0.72	0.90
G&A/Other	3.23	7.61	8.24	11.94	15.10	16.73	12.84	6.84	3.93	4.60	1.31	3.44	6.47
F&D Costs	34.07	28.69	30.46	20.87	31.48	64.49	58.88	46.58	9.84	44.69	55.29	36.60	43.05
Return on Capital	10.51	15.41	15.25	11.59	19.14	38.61	31.72	25.84	5.35	22.07	18.41	15.77	20.70
Income Taxes	22.08	24.49	23.42	20.37	35.05	62.03	53.17	19.88	7.21	43.59	33.47	26.59	29.64
Breakeven Oil Price	79.19	85.12	86.80	76.80	112.26	195.27	173.44	113.22	38.37	126.64	123.95	95.27	113.95
Quality Differential	3.08	(6.23)	(5.70)	(21.33)	(27.74)	(24.83)	(17.28)	(12.86)	(5.31)	(8.96)	(13.20)	(9.16)	(11.52)
Required WTI Price	82.28	78.89	81.10	55.47	84.52	170.44	156.16	100.36	33.06	117.68	110.75	86.11	102.43

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Exxon Mobil (XOM - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.66	11.39	14.39	15.60	17.16	18.15	14.04	13.38	13.38	13.16	15.00	13.83	14.67
Exploration Expense	1.81	1.87	1.95	1.89	2.39	1.97	1.40	1.39	1.39	2.40	1.40	1.74	1.71
G&A/Other	7.44	9.83	15.37	17.48	17.00	13.04	6.27	5.05	5.05	5.65	7.31	5.98	7.35
F&D Costs (1-Year)	17.20	39.04	20.08	20.47	26.31	22.56	14.99	32.05	32.05	9.87	15.54	19.15	19.00
Return on Capital	16.14	35.29	18.92	21.24	28.32	25.84	16.35	25.81	25.81	9.09	18.43	18.54	19.53
Income Taxes	17.29	35.26	19.85	24.97	31.12	22.49	16.91	11.29	11.29	14.14	16.76	19.12	18.60
Breakeven Oil Price	**70.55**	**132.67**	**90.56**	**101.66**	**122.30**	**104.05**	**69.97**	**88.96**	**88.96**	**54.31**	**74.44**	**78.35**	**80.86**
Quality Differential	3.96	4.91	1.98	(3.78)	(1.70)	2.31	4.11	7.28	7.28	5.10	6.20	6.19	5.00
Required WTI Price	**74.50**	**137.58**	**92.54**	**97.87**	**120.60**	**106.36**	**74.08**	**96.25**	**96.25**	**59.40**	**80.64**	**84.55**	**85.86**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.66	11.39	14.39	15.60	17.16	18.15	14.04	13.38	13.38	13.16	15.00	13.83	14.67
Exploration Expense	1.81	1.87	1.95	1.89	2.39	1.97	1.40	1.39	1.39	2.40	1.40	1.74	1.71
G&A/Other	7.44	9.83	15.37	17.48	17.00	13.04	6.27	5.05	5.05	5.65	7.31	5.98	7.35
F&D Costs (1-Year)	4.15	28.89	60.91	42.04	13.63	31.73	8.00	63.04	63.04	16.95	19.87	33.29	27.92
Return on Capital	3.90	26.00	57.04	43.63	14.43	36.45	8.73	50.77	50.77	15.62	23.52	32.23	28.50
Income Taxes	4.18	25.97	59.84	51.29	15.85	31.72	9.03	22.21	22.21	24.29	21.39	33.25	27.15
Breakeven Oil Price	**32.14**	**103.95**	**209.50**	**171.94**	**80.45**	**133.07**	**47.48**	**155.84**	**155.84**	**78.07**	**88.49**	**120.31**	**107.31**
Quality Differential	3.96	4.91	1.98	(3.78)	(1.70)	2.31	4.11	7.28	7.28	5.10	6.20	6.19	5.00
Required WTI Price	**36.10**	**108.86**	**211.48**	**168.15**	**78.76**	**135.38**	**51.59**	**163.12**	**163.12**	**83.17**	**94.70**	**126.51**	**112.31**

Source: BMO Capital Markets, Company Reports

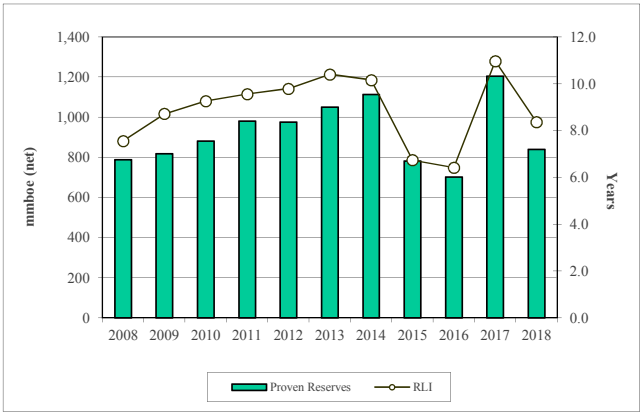
Husky Energy Inc. (HSE - TSX)

US$, net

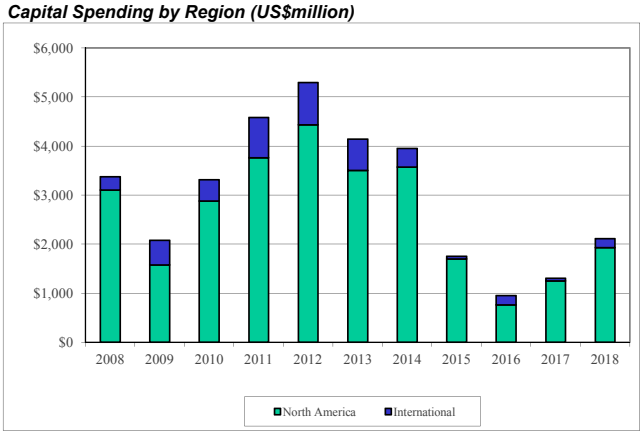
- Husky reported results from operations of $2.77/boe versus $4.13/boe in 2017.
- The company's F&D costs came in abnormally low this year due to revisions and dispositions. Therefore, our calculations are based on F&D costs ex-revisions, which came in at $13.14/boe. On a realized oil:gas price ratio basis, three-year average F&D cost ex-revisions came in at $11.33/boe, while the adjusted costs for PD reserves came in at $23.27/boe.
- Husky's required Brent breakeven oil price came in at $58.49/boe on a realized ratio basis on total proved reserves, while its PD costs imply a breakeven of $78.93/boe.
- The company reported ROCE of 7.4% in 2018.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

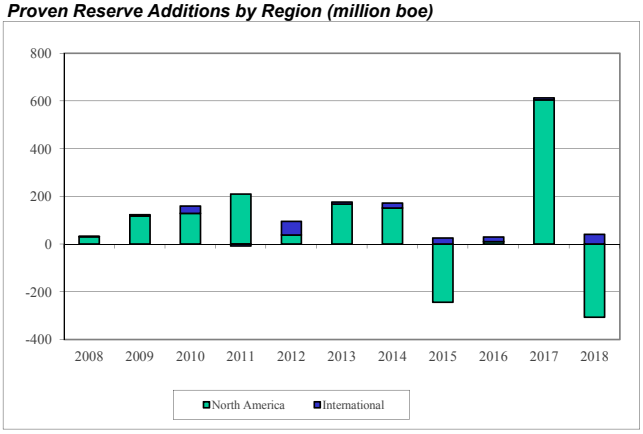
Proven Reserves vs RLI



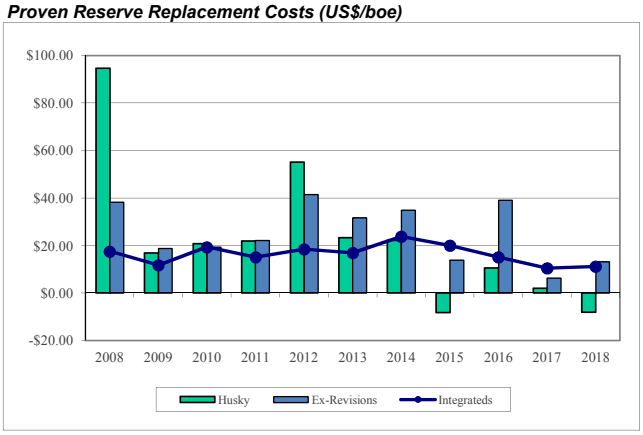
Capital Spending by Region (US$million)



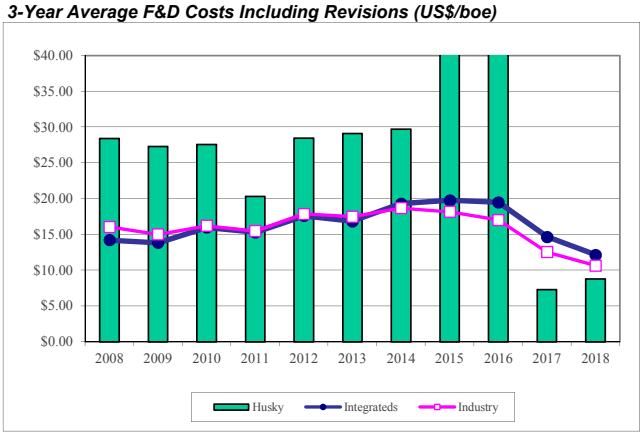
Proven Reserve Additions by Region (million boe)



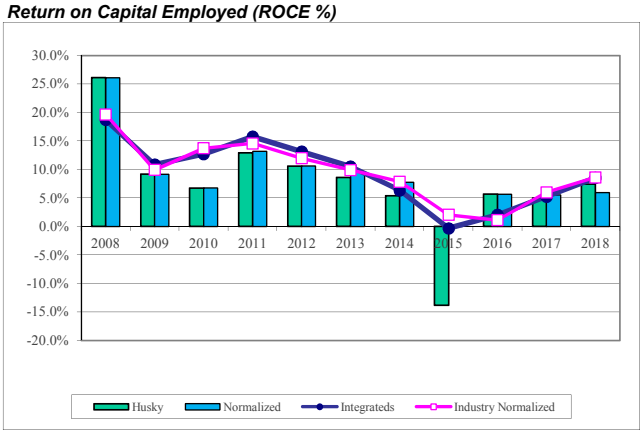
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

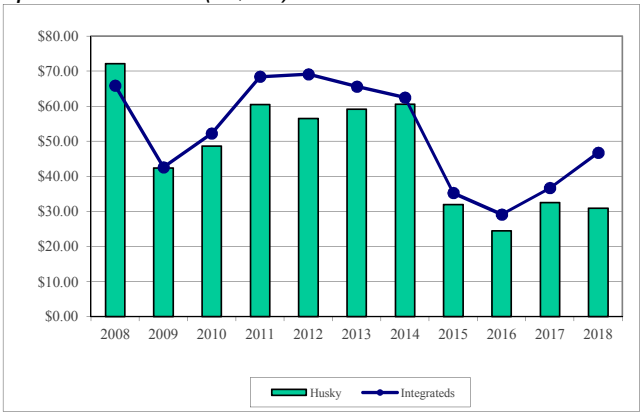
See pages F1 to F4 for analyst coverage.

Husky Energy Inc. (HSE - TSX)

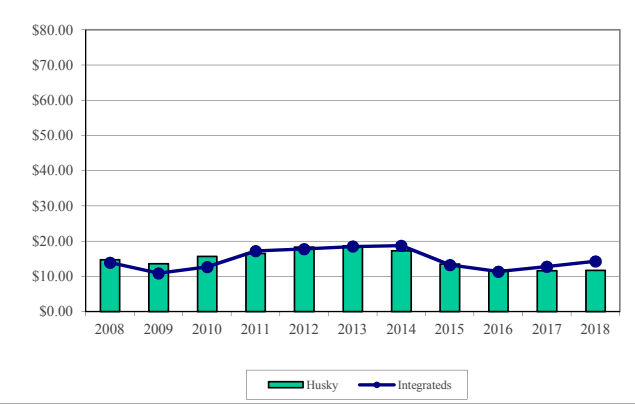
US$/boe, net

Worldwide

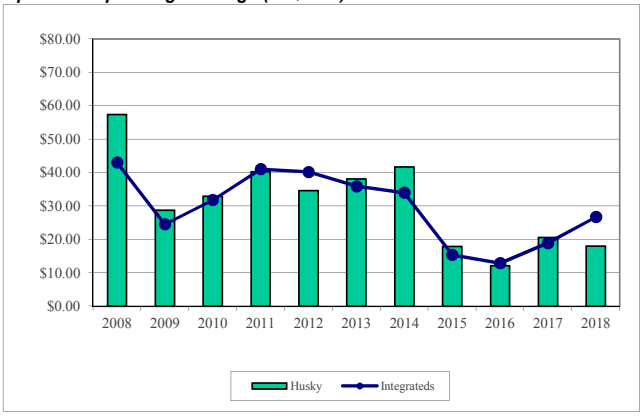
Upstream Net Revenue (US$/boe)



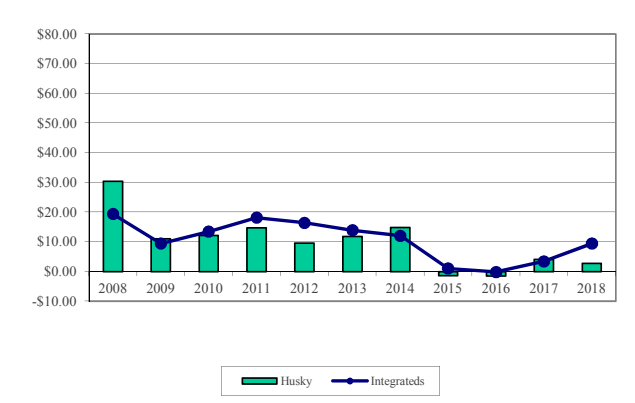
Production Costs (US$/boe)



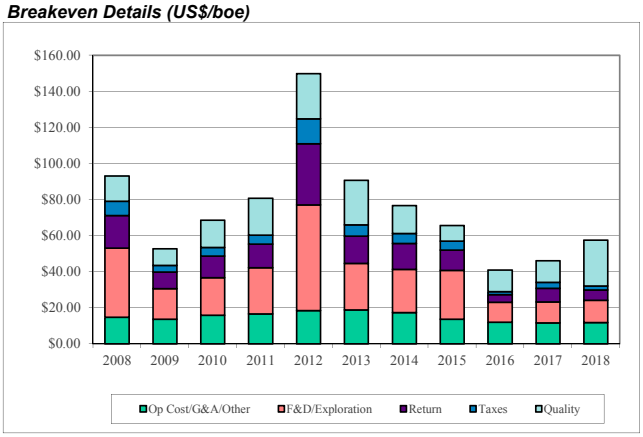
Upstream Operating Earnings (US$/boe)



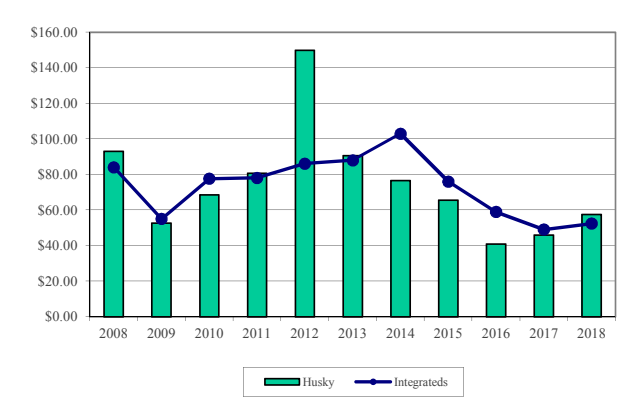
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



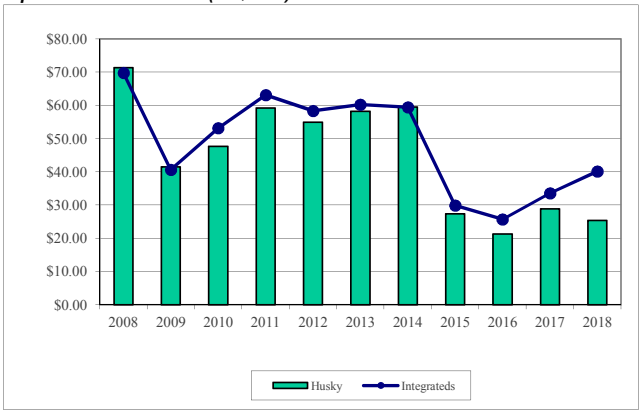
Source: BMO Capital Markets, Company Reports

Husky Energy Inc. (HSE - TSX)

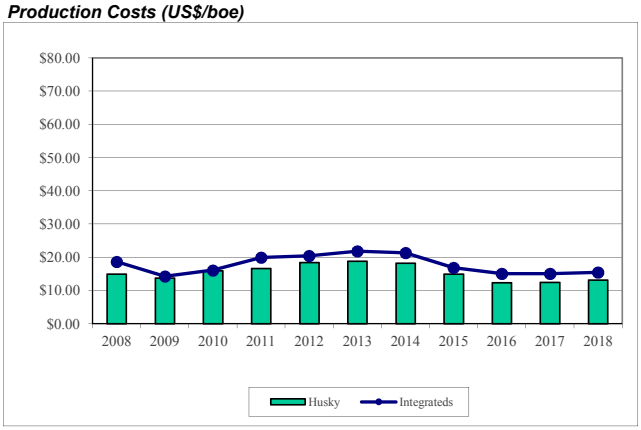
US$/boe, net

North America

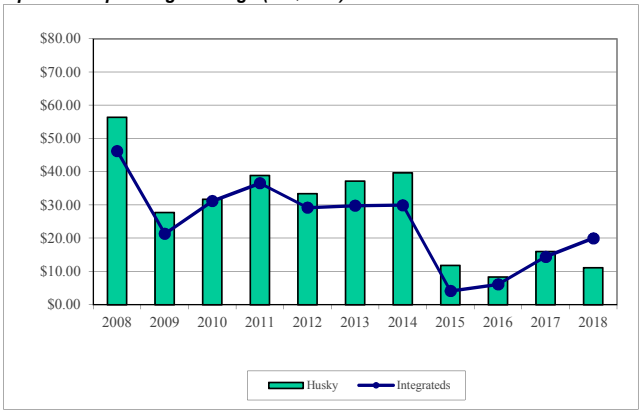
Upstream Net Revenue (US$/boe)



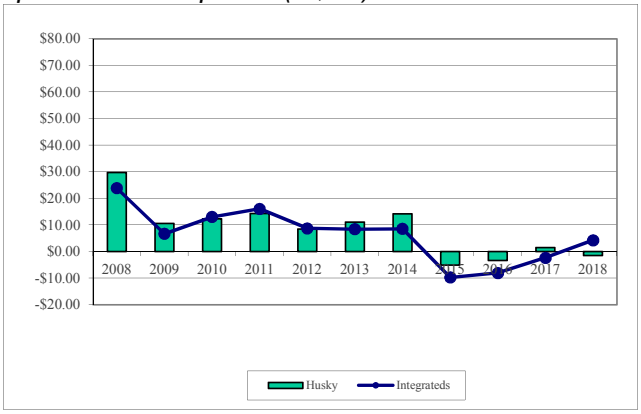
Production Costs (US$/boe)



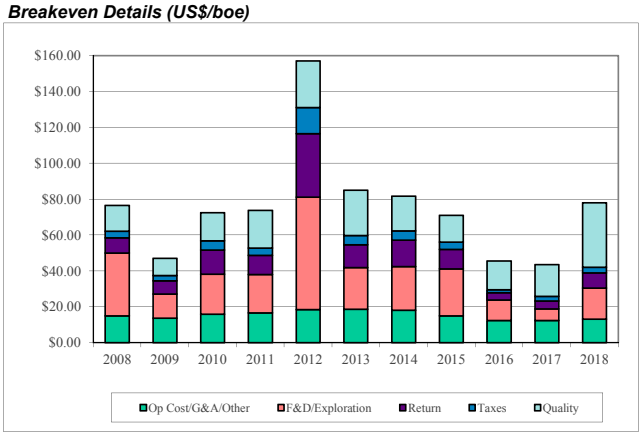
Upstream Operating Earnings (US$/boe)



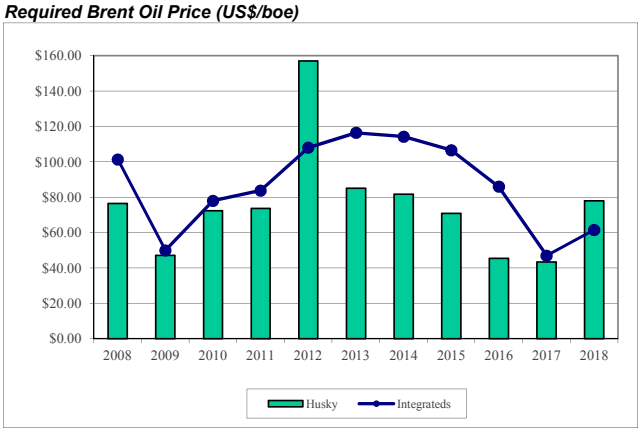
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



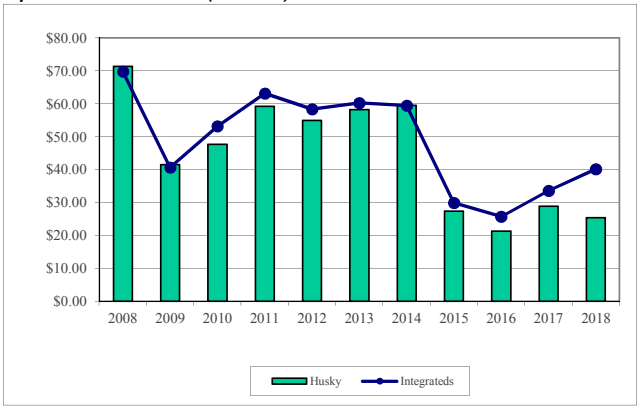
Source: BMO Capital Markets, Company Reports

Husky Energy Inc. (HSE - TSX)

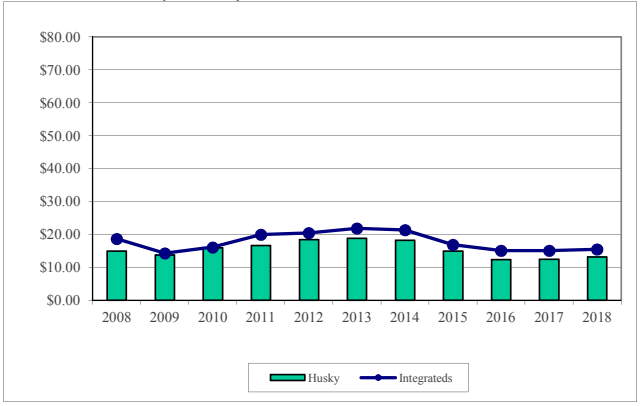
US$/boe, net

Total International

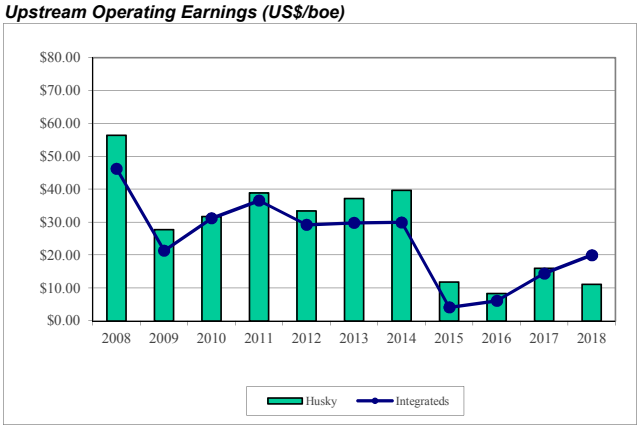
Upstream Net Revenue (US$/boe)



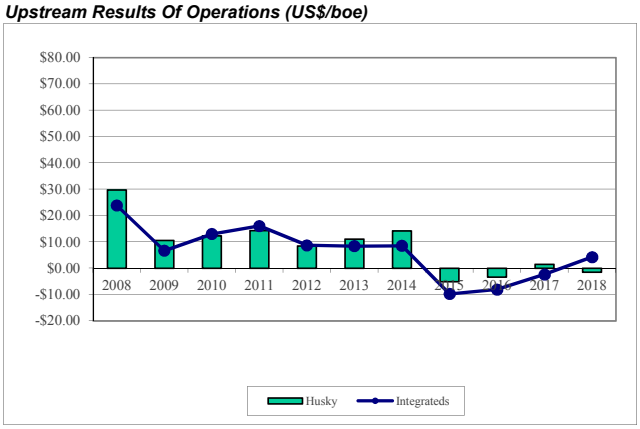
Production Costs (US$/boe)



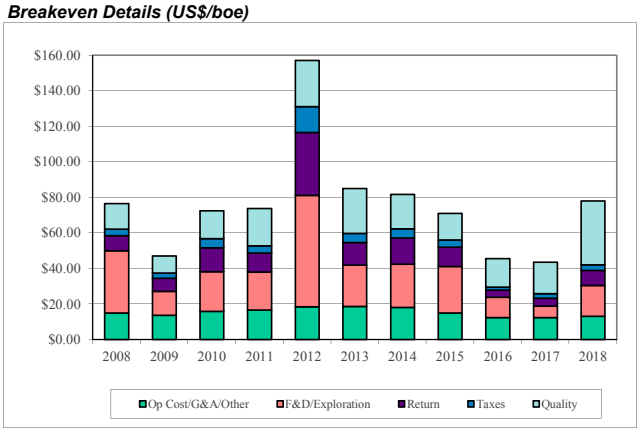
Upstream Operating Earnings (US$/boe)



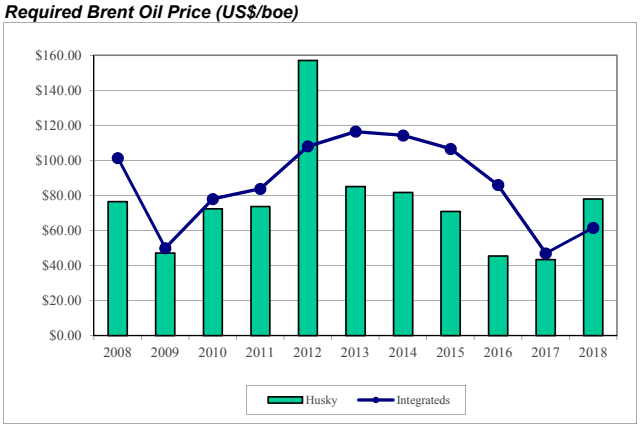
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Husky Energy Inc. (HSE - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	7,441	3,922	4,628	6,196	5,634	5,980	6,647	3,704	2,674	3,575	3,106
Midstream / Downstream Revenue	15,858	9,356	11,984	17,440	16,814	16,666	15,173	9,115	7,086	10,754	14,069
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	23,299	13,278	16,612	23,636	22,449	22,646	21,820	12,819	9,760	14,329	17,175
Crude Oil and Product Purchases	-	-	2,242	2,547	13,604	13,662	13,050	7,359	5,557	8,918	11,234
Production and Transportation Expenses	16,696	9,570	10,274	14,430	2,614	2,713	2,825	2,345	2,058	2,066	2,163
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	425	475	350	239	194	350	142	113	115
General and Administrative	268	233	283	433	451	542	418	268	411	501	505
Depreciation, Depletion and Amortization	1,728	1,590	1,934	2,548	2,582	2,651	2,873	2,712	1,860	2,222	2,000
Interest, net	139	171	239	227	147	94	130	172	280	278	182
Other	(390)	(11)	33	(201)	(137)	192	714	3,819	(1,266)	(96)	(512)
Earnings Before Income Tax	4,858	1,724	1,182	3,177	2,838	2,552	1,616	(4,206)	718	327	1,488
Current Income Taxes	850	1,112	183	358	536	572	649	240	(1)	(2)	58
Future Income Taxes	467	(635)	80	569	278	204	(173)	(1,431)	22	(277)	306
Total Income Taxes	1,317	477	262	927	814	776	476	(1,191)	21	(279)	364
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	3,541	1,247	920	2,250	2,023	1,776	1,139	(3,015)	697	606	1,125
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	3,541	1,247	920	2,250	2,023	1,776	1,139	(3,015)	697	606	1,125
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	3,541	1,247	920	2,250	2,023	1,776	1,139	(3,015)	697	606	1,125

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	3,541	1,247	920	2,250	2,023	1,776	1,139	(3,015)	697	606	1,125
Charges and Credits Not Impacting Cash	2,142	919	2,150	3,079	2,920	2,865	2,896	1,488	1,954	1,950	2,328
Other	(105)	6	(438)	(450)	(594)	(110)	234	3,962	(984)	(7)	(222)
Cash Flow From Operations	5,578	2,172	2,632	4,879	4,349	4,532	4,269	2,435	1,667	2,549	3,230
Change in Working Capital / Other	838	(483)	(7)	272	844	(20)	789	510	(178)	307	(39)
Net Cash From Operating Activities	6,416	1,689	2,625	5,151	5,192	4,511	5,058	2,945	1,489	2,856	3,191
Total Capital Expenditures	(3,875)	(2,433)	(3,741)	(4,856)	(4,704)	(4,883)	(4,549)	(2,353)	(1,288)	(1,712)	(2,762)
Acquisitions, net	120	16	7	181	24	36	60	96	2,217	(369)	(8)
Other	418	(255)	(81)	203	(153)	261	(422)	(1,515)	(452)	(70)	52
Net Cash From Investing Activities	(3,337)	(2,672)	(3,814)	(4,471)	(4,833)	(4,586)	(4,912)	(3,772)	477	(2,151)	(2,718)
Net Change in Debt	(1,185)	1,531	1,049	(384)	90	-	824	606	(973)	297	-
Net Change in Common Stock	-	-	959	1,187	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	294	-	-	220	266	-	-	-
Cash Dividends Paid	(1,386)	(898)	(990)	(508)	(574)	(1,150)	(1,071)	(942)	(20)	(26)	(337)
Other	157	(109)	36	332	322	328	21	(95)	(36)	9	86
Net Cash From Financing Activities	(2,414)	523	1,054	921	(162)	(822)	(5)	(164)	(1,029)	280	(251)
Effect of Exchange Rate on Cash	-	-	-	7	(13)	(5)	13	55	6	(65)	50
Net Increase/(Decrease) in Cash	665	(459)	(136)	1,608	184	(901)	154	(937)	944	921	272
Cash and Equivalents, Beginning of Year	196	804	381	255	1,842	1,967	994	992	53	1,017	1,940
Cash and Equivalents, End of Year	861	345	245	1,862	2,026	1,065	1,148	55	996	1,938	2,212

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Husky Energy Inc. (HSE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	3,133	2,564	3,641	5,507	5,500	4,775	4,071	2,282	3,262	4,330	4,390
Net Property, Plant and Equipment	19,656	18,722	22,586	25,317	29,000	30,004	30,011	22,496	18,580	18,566	19,913
Other Assets	2,227	1,876	2,063	1,980	661	1,062	1,102	1,110	2,530	2,493	2,884
Total Assets	25,016	23,162	28,290	32,804	35,162	35,841	35,185	25,887	24,372	25,390	27,187
Total Current Liabilities	2,732	1,925	2,422	3,429	3,095	4,043	5,261	3,004	2,412	2,704	3,854
Long-term Debt	1,846	2,844	4,066	3,545	3,920	3,225	3,711	4,510	3,578	4,041	3,175
Deferred Income Taxes	4,456	3,464	3,996	4,379	4,618	4,800	4,360	2,437	2,350	2,100	2,450
Other Liabilities and Deferred Credits	2,412	2,234	2,762	3,470	4,356	4,273	3,218	2,947	2,714	2,690	2,569
Total Liabilities	11,445	10,466	13,245	14,824	15,989	16,342	16,550	12,898	11,055	11,535	12,049
Minority Interests	-	-	-	-	-	-	-	-	8	8	9
Common Shares	3,365	3,158	4,442	6,401	6,943	6,773	6,327	5,482	5,512	5,624	5,629
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	294	291	283	484	684	660	674	675
Retained Earnings	9,867	9,541	10,667	11,226	11,957	12,252	11,472	5,943	6,389	7,099	7,929
Other / Comprehensive Income (Loss)	339	(4)	(64)	59	(19)	192	352	879	747	449	897
Total Shareholders' Equity	13,571	12,696	15,045	17,980	19,173	19,500	18,635	12,989	13,309	13,846	15,129
Total Liabilities and Shareholders' Equity	25,016	23,162	28,290	32,804	35,162	35,841	35,185	25,887	24,372	25,390	27,187
Return on Capital Employed (ROCE)	**26.1%**	**9.2%**	**6.7%**	**12.9%**	**10.6%**	**8.6%**	**5.4%**	**-13.8%**	**5.7%**	**5.0%**	**7.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	7,529	3,979	4,634	6,196	5,634	5,980	6,647	3,704	2,674	3,575	3,106	9,355	19,706
Production Costs	1,539	1,279	1,496	1,691	1,830	1,889	1,895	1,569	1,291	1,272	1,179	3,742	7,206
Exploration	0	0	0	376	350	241	184	58	57	45	117	219	461
DD&A	1,420	1,231	1,527	2,048	2,105	2,161	2,329	2,310	1,562	1,610	1,432	4,604	9,244
G&A/Other	0	0	0	0	1	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	4,570	1,469	1,611	2,081	1,348	1,689	2,239	-233	-236	647	379	790	2,796
Income Taxes	1,399	431	454	571	390	490	616	-72	-70	193	101	224	767
Results Of Operations	3,171	1,039	1,157	1,510	958	1,199	1,623	-161	-166	454	278	566	2,028

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	7,232	3,770	4,390	5,953	5,370	5,766	5,947	2,731	2,103	2,764	2,137	7,004	15,682
Production Costs	1,515	1,253	1,467	1,666	1,799	1,859	1,820	1,493	1,222	1,193	1,106	3,521	6,834
Exploration	0	0	0	376	305	228	156	58	57	42	93	191	405
DD&A	1,374	1,166	1,341	1,928	2,094	2,142	2,066	1,877	1,288	1,303	1,113	3,704	7,647
G&A/Other	0	0	0	0	1	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	4,343	1,351	1,582	1,982	1,171	1,536	1,905	-698	-463	226	-174	-412	795
Income Taxes	1,329	396	447	545	339	446	492	-188	-126	86	-48	-88	216
Results Of Operations	3,014	956	1,135	1,437	832	1,091	1,412	-509	-337	140	-127	-323	580

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	297	209	244	244	264	214	700	973	571	811	969	2,351	4,025
Production Costs	25	26	29	25	31	30	74	76	70	79	73	221	372
Exploration	0	0	0	0	45	13	28	0	0	4	24	28	56
DD&A	45	64	185	119	11	18	264	433	274	307	319	900	1,597
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	227	118	29	99	177	152	334	464	227	421	553	1,202	2,000
Income Taxes	70	35	8	26	51	45	123	116	57	107	149	313	552
Results Of Operations	158	83	21	73	126	108	211	348	171	314	404	889	1,449

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Husky Energy Inc. (HSE - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$72.16	$42.40	$48.69	$60.45	$56.53	$59.21	$60.61	$31.98	$24.46	$32.55	$30.95	$29.28	$36.16
Production Costs	$14.75	$13.63	$15.72	$16.50	$18.36	$18.70	$17.28	$13.55	$11.81	$11.58	$11.75	$11.71	$13.22
Exploration	$0.00	$0.00	$0.00	$3.67	$3.51	$2.38	$1.68	$0.50	$0.52	$0.41	$1.16	$0.68	$0.84
DD&A	$13.61	$13.11	$16.04	$19.98	$21.12	$21.40	$21.24	$19.94	$14.29	$14.66	$14.27	$14.41	$16.96
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$43.80	$15.66	$16.93	$20.30	$13.52	$16.72	$20.42	-$2.01	-$2.16	$5.89	$3.78	$2.47	$5.13
Income Taxes	$13.41	$4.59	$4.78	$5.57	$3.92	$4.85	$5.61	-$0.63	-$0.64	$1.76	$1.01	$0.70	$1.41
Results Of Operations	$30.39	$11.07	$12.15	$14.73	$9.61	$11.87	$14.80	-$1.39	-$1.52	$4.13	$2.77	$1.77	$3.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$71.37	$41.50	$47.63	$59.23	$54.99	$58.24	$59.47	$27.35	$21.28	$28.89	$25.39	$25.13	$32.77
Production Costs	$14.95	$13.79	$15.92	$16.58	$18.42	$18.78	$18.20	$14.96	$12.36	$12.47	$13.14	$12.63	$14.28
Exploration	$0.00	$0.00	$0.00	$3.74	$3.12	$2.31	$1.56	$0.58	$0.57	$0.44	$1.10	$0.69	$0.85
DD&A	$13.56	$12.84	$14.55	$19.19	$21.44	$21.64	$20.66	$18.80	$13.03	$13.62	$13.22	$13.29	$15.98
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.01	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$42.86	$14.88	$17.16	$19.72	$11.99	$15.52	$19.05	-$6.99	-$4.69	$2.36	-$2.07	-$1.48	$1.66
Income Taxes	$13.12	$4.35	$4.85	$5.42	$3.47	$4.50	$4.92	-$1.89	-$1.28	$0.90	-$0.57	-$0.32	$0.45
Results Of Operations	$29.74	$10.52	$12.32	$14.30	$8.51	$11.02	$14.12	-$5.10	-$3.41	$1.47	-$1.50	-$1.16	$1.21

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$99.04	$69.59	$81.25	$121.90	$132.08	$106.83	$72.42	$60.84	$54.40	$57.26	$59.92	$57.57	$60.52
Production Costs	$8.17	$8.81	$9.71	$12.65	$15.51	$15.05	$7.68	$4.75	$6.62	$5.61	$4.49	$5.42	$5.59
Exploration	$0.00	$0.00	$0.00	$0.00	$22.51	$6.31	$2.90	$0.00	$0.00	$0.27	$1.48	$0.68	$0.84
DD&A	$15.09	$21.43	$61.82	$59.69	$5.50	$9.23	$27.26	$27.07	$26.12	$21.66	$19.72	$22.04	$24.01
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$75.77	$39.34	$9.71	$49.57	$88.55	$76.24	$34.57	$29.02	$21.66	$29.72	$34.23	$29.43	$30.08
Income Taxes	$23.27	$11.74	$2.59	$13.15	$25.52	$22.34	$12.74	$7.24	$5.40	$7.57	$9.21	$7.66	$8.30
Results Of Operations	$52.51	$27.60	$7.12	$36.42	$63.04	$53.90	$21.83	$21.78	$16.26	$22.15	$25.02	$21.77	$21.78

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Husky Energy Inc. (HSE - TSX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	465.8	457.5	479.5	583.6	520.5	476.7	569.9	654.8	531.5	506.8	465.8	501.4	545.8
Liquids Production (b/d)	208,219	180,822	180,822	183,562	186,301	197,260	205,479	208,219	210,959	216,438	197,260	208,219	207,671
Total Production (boe/d)	285,845	257,078	260,731	280,822	273,059	276,712	300,457	317,352	299,543	300,913	274,886	291,781	298,630
% Gas Production	27%	30%	31%	35%	32%	29%	32%	34%	30%	28%	28%	29%	30%
% Oil Production	73%	70%	69%	65%	68%	71%	68%	66%	70%	72%	72%	71%	70%
Proven Reserves:													
Gas Reserves (bcf)	1,911.8	1,512.8	1,733.8	1,932.8	1,796.8	2,016.8	2,406.8	1,914.8	1,759.8	1,626.8	1,542.8	1,643.1	1,850.2
Oil Reserves (mmbbls)	470.1	566.1	593.1	658.1	676.1	715.1	713.1	462.1	409.1	934.1	583.1	642.1	620.3
Total Proven Reserves (mmboe)	788.7	818.2	882.1	980.2	975.6	1,051.2	1,114.2	781.2	702.4	1,205.2	840.2	916.0	928.7
% Gas Reserves	40%	31%	33%	33%	31%	32%	36%	41%	42%	22%	31%	30%	33%
% Oil Reserves	60%	69%	67%	67%	69%	68%	64%	59%	58%	78%	69%	70%	67%
Proven Reserve Life Index	7.6	8.7	9.3	9.6	9.8	10.4	10.2	6.7	6.4	11.0	8.4	8.6	8.5
Proven Reserve Additions:													
Gas Additions (bcf)	228.0	-232.0	396.0	412.0	54.0	394.0	598.0	-253.0	39.0	52.0	86.0	177.0	522.0
Oil Additions (mmbbls)	-6.0	162.0	93.0	132.0	86.0	111.0	73.0	-175.0	24.0	604.0	-279.0	349.0	247.0
Total Additions (mmboe)	32.0	123.3	159.0	200.7	95.0	176.7	172.7	-217.2	30.5	612.7	-264.7	378.5	334.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	65.5	98.2	142.2	112.7	127.5	129.5	110.5	125.5	20.0	209.0	157.3	386.3	622.3
Acquisitions	22.8	12.7	28.8	94.0	0.0	1.2	3.0	1.2	4.3	0.0	3.3	7.7	11.8
Dispositions	(3.7)	0.0	(0.2)	(8.2)	(1.0)	(0.5)	(5.2)	(5.0)	(59.7)	(58.3)	(1.3)	(119.3)	(129.5)
Revisions of Estimates	(52.7)	12.5	(11.8)	2.2	(31.5)	46.5	64.3	(338.8)	65.8	462.0	(424.0)	103.8	(170.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	204.7%	79.6%	89.4%	56.1%	134.2%	73.3%	64.0%	-57.8%	65.6%	34.1%	-59.4%	102.1%	186.3%
Acquisitions	71.4%	10.3%	18.1%	46.8%	0.0%	0.7%	1.7%	-0.5%	14.2%	0.0%	-1.3%	2.0%	3.5%
Dispositions	-11.5%	0.0%	-0.1%	-4.1%	-1.1%	-0.3%	-3.0%	2.3%	-195.6%	-9.5%	0.5%	-31.5%	-38.8%
Revisions of Estimates	-164.6%	10.1%	-7.4%	1.1%	-33.2%	26.3%	37.3%	156.0%	215.8%	75.4%	160.2%	27.4%	-51.1%
Additions as % of Production:													
Gas	134.1%	-138.9%	226.3%	193.4%	28.4%	226.4%	287.5%	-105.9%	20.1%	28.1%	50.6%	32.2%	52.4%
Oil	-7.9%	245.5%	140.9%	197.0%	126.5%	154.2%	97.3%	-230.3%	31.2%	764.6%	-387.5%	153.1%	65.2%
Total	30.7%	131.4%	167.1%	195.8%	95.3%	174.9%	157.4%	-187.5%	27.9%	557.8%	-263.8%	118.5%	61.3%
Additions as % of Reserves:													
Gas	11.9%	-15.3%	22.8%	21.3%	3.0%	19.5%	24.8%	-13.2%	2.2%	3.2%	5.6%	10.8%	28.2%
Oil	-1.3%	28.6%	15.7%	20.1%	12.7%	15.5%	10.2%	-37.9%	5.9%	64.7%	-47.8%	54.4%	39.8%
Total	4.1%	15.1%	18.0%	20.5%	9.7%	16.8%	15.5%	-27.8%	4.3%	50.8%	-31.5%	41.3%	36.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$788.5	$711.7	$785.6	$731.4	$363.2	$558.4	$339.6	$195.0	$47.6	$128.8	$189.1	$365.5	$900.1
Development	$2,088.3	$1,094.0	$2,088.7	$2,969.2	$4,912.0	$3,545.9	$3,568.4	$1,513.0	$899.0	$1,121.2	$1,887.9	$3,908.1	$8,989.5
Acquisitions	$499.9	$272.2	$437.9	$884.2	$21.0	$36.9	$46.2	$43.9	$5.3	$56.3	$34.7	$96.3	$186.4
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$3,376.8	$2,077.9	$3,312.3	$4,584.8	$5,296.2	$4,141.2	$3,954.3	$1,751.9	$951.9	$1,306.2	$2,111.7	$4,369.9	$10,076.0
Expenditures as % of Total:													
Exploration	23.4%	34.3%	23.7%	16.0%	6.9%	13.5%	8.6%	11.1%	5.0%	9.9%	9.0%	8.4%	8.9%
Development	61.8%	52.6%	63.1%	64.8%	92.7%	85.6%	90.2%	86.4%	94.4%	85.8%	89.4%	89.4%	89.2%
Acquisitions	14.8%	13.1%	13.2%	19.3%	0.4%	0.9%	1.2%	2.5%	0.6%	4.3%	1.6%	2.2%	1.8%
Cashflow (US$million)	$5,354.7	$1,804.0	$3,099.6	$4,286.4	$3,558.2	$3,745.9	$4,179.8	$1,950.0	$1,259.4	$2,009.5	$2,011.4	$5,280.2	$11,410.0
Cashflow (US$/boe)	$51.32	$19.23	$32.57	$41.82	$35.70	$37.09	$38.11	$16.83	$11.52	$18.30	$20.05	$16.53	$20.94
Recycle Ratio	0.5x	1.1x	1.6x	1.9x	0.6x	1.6x	1.7x	-2.0x	1.1x	9.4x	-2.5x	1.9x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$224.17	$16.32	$22.05	$32.23	$54.95	$23.32	$22.35	-$8.01	$11.03	$1.86	-$7.79	$8.72	$21.90
Acquisition Costs	$21.89	$21.49	$15.19	$9.41	na	$31.63	$15.40	$37.59	$1.22	na	na	$12.56	$15.75
All Sources (incl. revisions)	$94.68	$16.85	$20.81	$21.95	$55.17	$23.37	$22.24	-$8.26	$10.56	$1.95	-$8.02	$8.78	$21.74
Exploration & Development (excl. revisions)	$43.92	$18.39	$20.22	$32.85	$41.37	$31.69	$35.37	$13.61	$47.33	$5.98	$13.20	$11.06	$15.89
Acquisition Costs	$21.89	$21.49	$15.19	$9.41	na	$31.63	$15.40	$37.59	$1.22	na	na	$12.56	$15.75
All Sources (excl. revisions)	$38.23	$18.75	$19.37	$22.18	$41.54	$31.69	$34.84	$13.83	$39.12	$6.25	$13.14	$11.09	$15.89
Geographically Segmented Costs													
North America	$89.52	$13.33	$22.39	$17.80	$111.38	$20.85	$22.76	-$7.13	$10.99	$1.89	-$6.33	$9.24	$26.65
Total International	$273.54	$100.06	$14.14	-$307.67	$15.30	$70.57	$18.26	$2.04	$9.10	$6.48	$4.37	$6.00	$7.29

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Husky Energy Inc. (HSE - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	14.75	13.63	15.72	16.50	18.36	18.70	17.28	13.55	11.81	11.58	11.58	11.71	13.22
Exploration Expense	-	-	-	3.67	3.51	2.38	1.68	0.50	0.52	0.41	0.41	0.68	0.84
G&A/Other	-	-	-	-	0.01	-	-	-	-	-	-	-	-
F&D Costs	38.23	16.85	20.81	21.95	55.17	23.37	22.24	26.55	10.56	11.14	11.14	10.93	16.32
Return on Capital	18.11	9.19	12.07	13.15	33.88	15.16	14.42	11.24	4.27	7.62	7.62	5.87	8.72
Income Taxes	7.99	3.81	4.74	4.97	13.81	6.20	5.47	5.06	1.79	3.24	3.24	2.33	3.30
Breakeven Oil Price	79.07	43.49	53.35	60.25	124.74	65.83	61.08	56.91	28.95	33.99	33.99	31.53	42.40
Quality Differential	13.92	9.06	15.10	20.44	25.07	24.74	15.44	8.58	11.85	11.95	11.95	16.45	14.68
Required WTI Price	93.00	52.55	68.45	80.69	149.81	90.56	76.53	65.49	40.80	45.94	45.94	47.98	57.08

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	14.95	13.79	15.92	16.58	18.42	18.78	18.20	14.96	12.36	12.47	12.47	12.63	14.28
Exploration Expense	-	-	-	3.74	3.12	2.31	1.56	0.58	0.57	0.44	0.44	0.69	0.85
G&A/Other	-	-	-	-	0.01	-	-	-	-	-	-	-	-
F&D Costs	35.13	13.33	22.39	17.80	59.69	20.85	22.76	25.64	10.99	6.00	6.00	11.06	16.32
Return on Capital	8.40	7.38	13.29	10.60	35.40	12.73	14.78	10.86	4.06	4.34	4.34	5.92	8.71
Income Taxes	3.70	3.05	5.23	4.02	14.44	5.20	5.15	4.02	1.52	2.65	2.65	1.62	3.24
Breakeven Oil Price	62.18	37.56	56.83	52.74	131.08	59.86	62.45	56.06	29.51	25.89	25.89	31.93	43.39
Quality Differential	14.36	9.59	15.62	21.06	26.00	25.20	19.25	14.91	16.05	17.60	17.60	23.19	20.75
Required WTI Price	76.54	47.15	72.46	73.81	157.08	85.06	81.70	70.97	45.56	43.49	43.49	55.12	64.14

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	8.17	8.81	9.71	12.65	15.51	15.05	7.68	4.75	na	na	na	na	na
Exploration Expense	-	-	-	-	22.51	6.31	2.90	-	na	na	na	na	na
G&A/Other	-	-	-	-	-	-	-	-	na	na	na	na	na
F&D Costs	73.85	100.06	14.14	53.36	15.30	70.57	18.26	34.71	na	na	na	na	na
Return on Capital	11.22	19.15	10.59	44.45	42.64	210.34	11.64	14.58	na	na	na	na	na
Income Taxes	4.97	8.15	3.85	16.05	17.26	87.17	6.80	4.85	na	na	na	na	na
Breakeven Oil Price	98.21	136.17	38.29	126.50	113.23	389.45	47.29	58.89	na	na	na	na	na
Quality Differential	(0.76)	(6.96)	(0.90)	(10.95)	(20.39)	1.90	(23.94)	(25.90)	na	na	na	na	na
Required WTI Price	97.45	129.21	37.39	115.55	92.84	391.35	23.35	32.99	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Husky Energy Inc. (HSE - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	16.57	19.66	22.00	24.55	23.88	20.97	14.62	12.80	12.80	12.58	11.93	12.44	14.45
Exploration Expense	-	-	4.89	4.70	3.04	2.03	0.54	0.56	0.56	0.45	1.18	0.73	0.92
G&A/Other	-	-	-	0.01	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	14.19	28.56	29.47	59.60	32.55	32.35	30.60	11.08	11.08	11.52	11.33	11.31	19.38
Return on Capital	7.61	16.60	17.98	37.01	20.82	20.00	12.77	4.33	4.33	8.11	5.93	6.06	10.24
Income Taxes	3.16	6.52	6.80	15.08	8.52	7.58	5.75	1.82	1.82	3.45	2.16	2.40	3.87
Breakeven Oil Price	**41.53**	**71.34**	**81.14**	**140.95**	**88.82**	**82.93**	**64.29**	**30.58**	**30.58**	**36.10**	**32.52**	**32.94**	**48.87**
Quality Differential	11.01	18.88	27.24	33.51	31.58	18.74	9.26	12.84	12.84	12.98	25.96	17.26	15.96
Required WTI Price	**52.54**	**90.22**	**108.38**	**174.47**	**120.40**	**101.67**	**73.55**	**43.43**	**43.43**	**49.08**	**58.49**	**50.21**	**64.82**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	16.57	19.66	22.00	24.55	23.88	20.97	14.62	12.80	12.80	12.58	11.93	12.44	14.45
Exploration Expense	-	-	4.89	4.70	3.04	2.03	0.54	0.56	0.56	0.45	1.18	0.73	0.92
G&A/Other	-	-	-	0.01	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	32.05	62.83	37.58	69.48	45.19	31.88	27.02	9.84	9.84	7.90	23.27	19.06	19.98
Return on Capital	17.35	35.81	22.91	43.12	28.44	19.71	11.28	3.82	3.82	5.56	12.16	10.23	10.56
Income Taxes	7.20	14.07	8.66	17.57	11.63	7.47	5.08	1.60	1.60	2.36	4.43	4.06	3.99
Breakeven Oil Price	**73.17**	**132.37**	**96.05**	**159.43**	**112.19**	**82.06**	**58.53**	**28.62**	**28.62**	**28.84**	**52.97**	**46.51**	**49.91**
Quality Differential	11.01	18.88	27.24	33.51	31.58	18.74	9.26	12.84	12.84	12.98	25.96	17.26	15.96
Required WTI Price	**84.18**	**151.25**	**123.29**	**192.94**	**143.77**	**100.81**	**67.79**	**41.46**	**41.46**	**41.82**	**78.93**	**63.78**	**65.87**

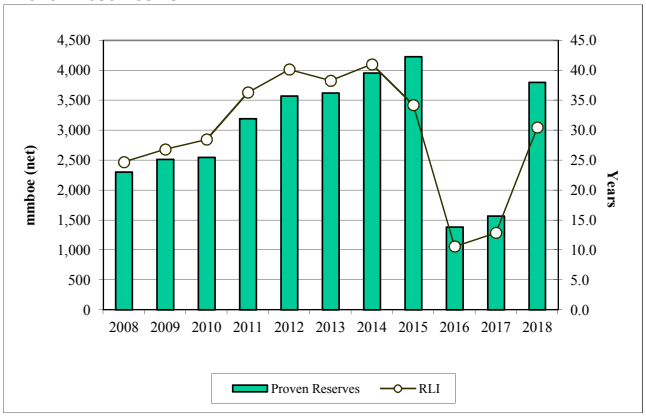
Source: BMO Capital Markets, Company Reports

Imperial Oil (IMO - TSX, AMEX) US$, net

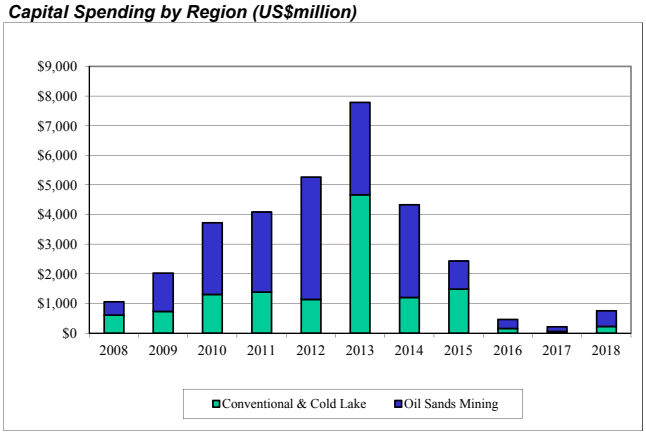
- Imperial Oil's results from operations improved to a loss of $1.19/boe in 2018 from a loss of $3.26/boe in 2017.
- The company reported strong F&D performance in 2018 and its F&D costs came in at $6.64/boe versus $4.02/boe in 2017. On a realized oil:gas price ratio basis, F&D costs increased to $7.72/boe from $5.10/boe last year. The three-year average PD F&D cost came in at $13.35/boe in 2018.
- Imperial's operations in 2018 imply a required Brent breakeven oil price of $82.72/boe on a realized ratio basis on total proved reserves, while its PD costs imply a breakeven of $98.93/boe.
- The company's ROCE rose to 8.5% in 2018 versus 1.9% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

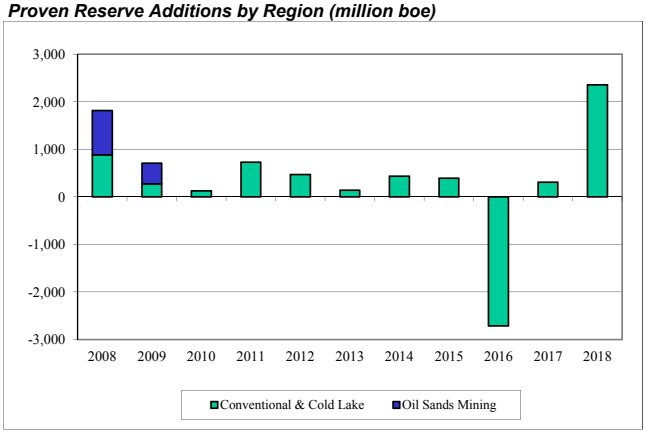
Proven Reserves vs RLI



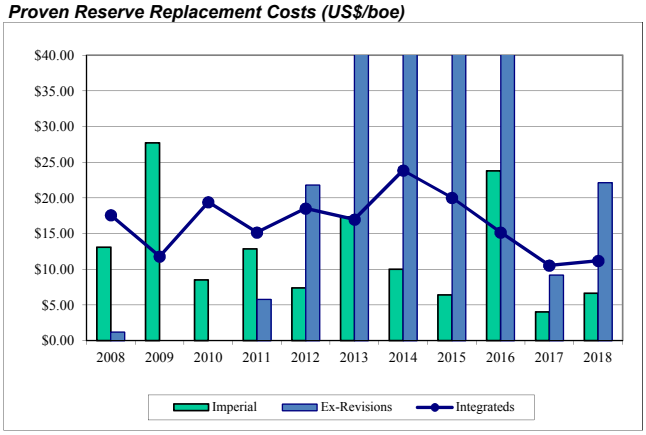
Capital Spending by Region (US$million)



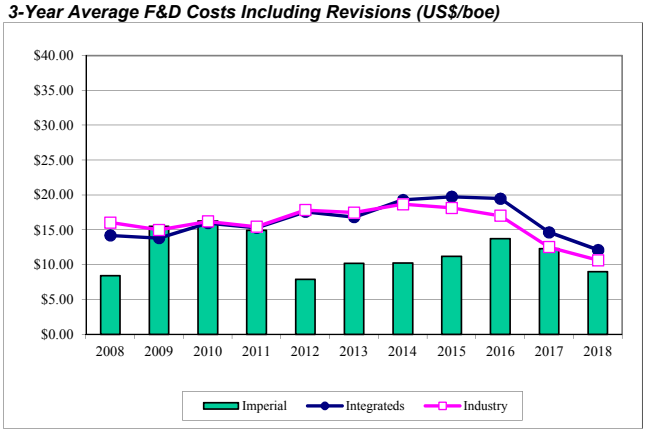
Proven Reserve Additions by Region (million boe)



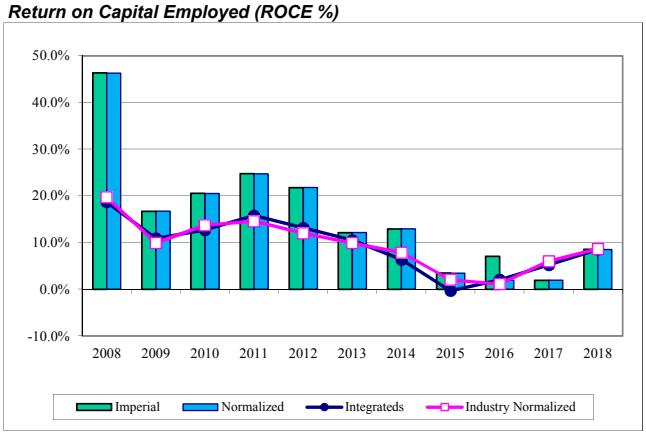
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Notes: Reserve estimates reported after royalties; We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions. Blended with Conventional F&D results for North American Segment.
Source: BMO Capital Markets, Company Reports

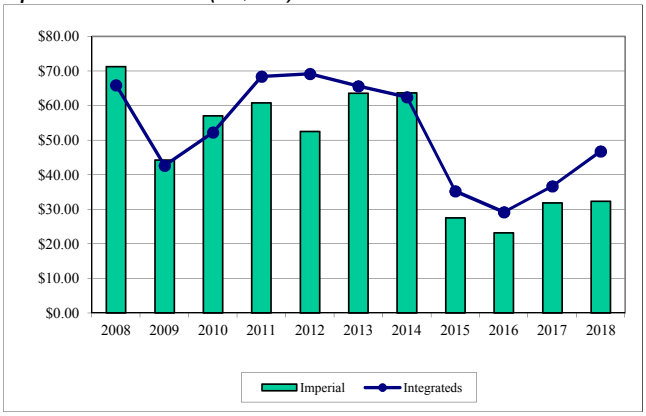
See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

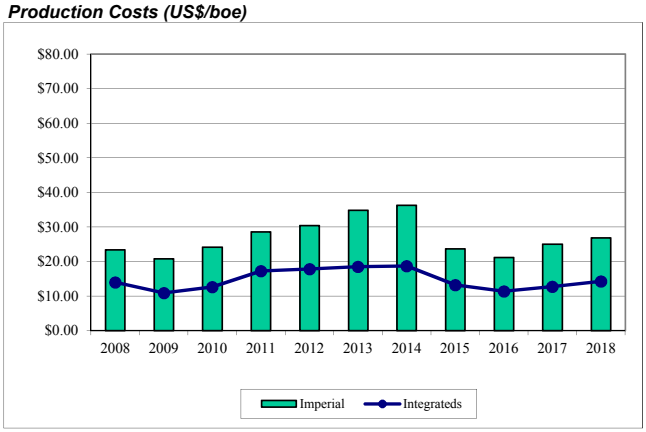
US$/boe, net

Worldwide

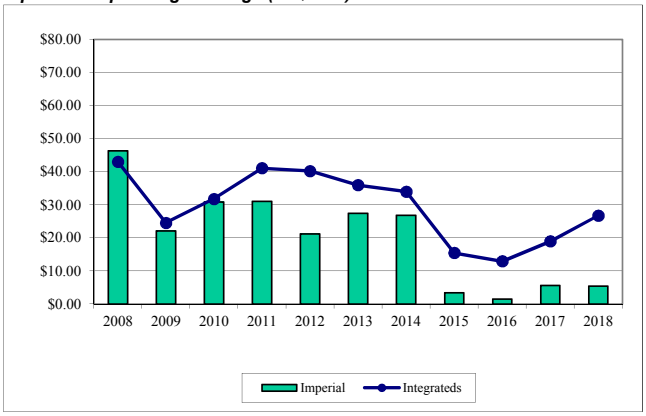
Upstream Net Revenue (US$/boe)



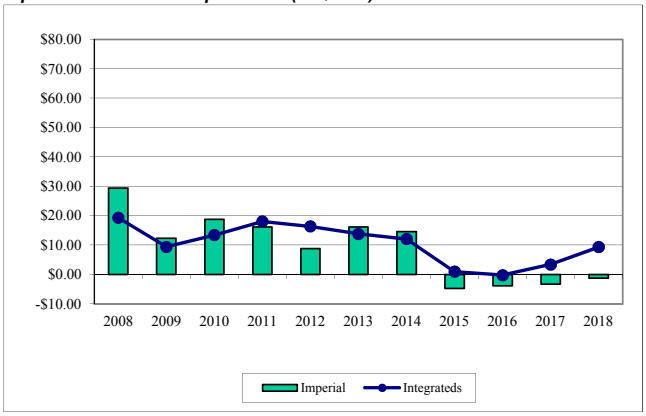
Production Costs (US$/boe)



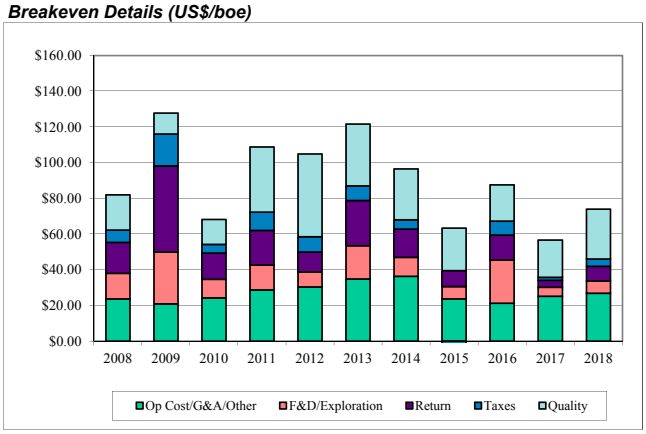
Upstream Operating Earnings (US$/boe)



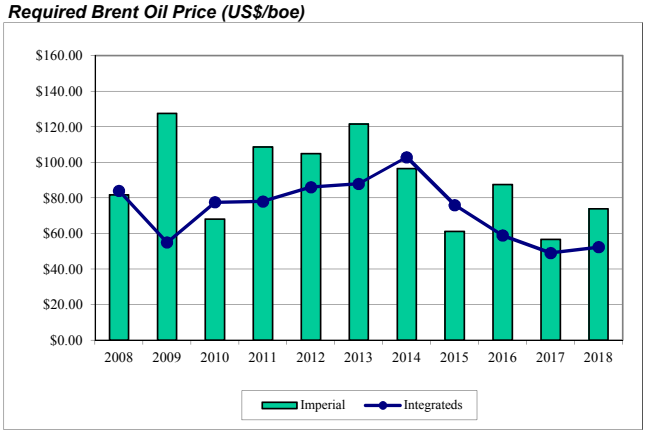
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Notes: Reserve estimates reported after royalties; We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions. Blended with Conventional F&D results for North American Segment.
Source: BMO Capital Markets, Company Reports

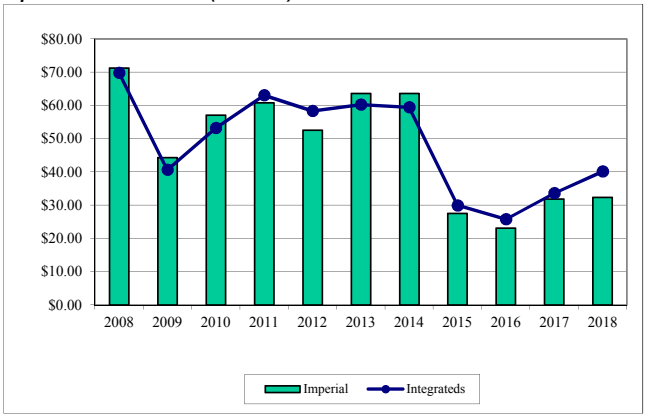
See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

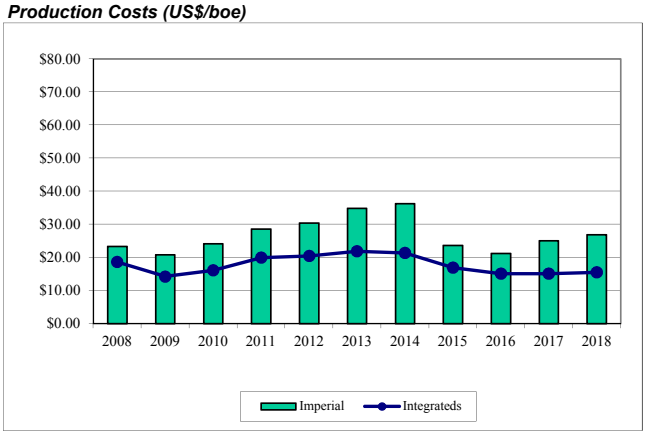
US$/boe, net

North America

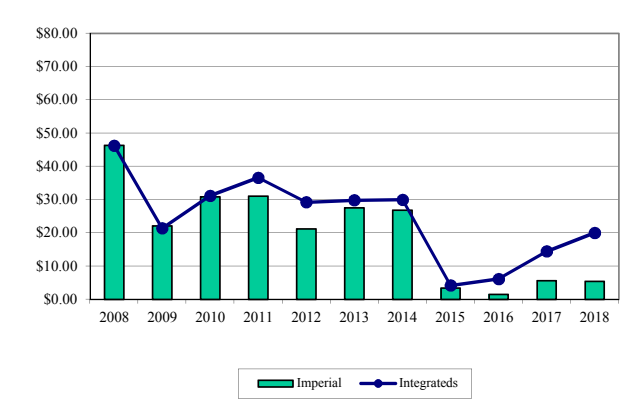
Upstream Net Revenue (US$/boe)



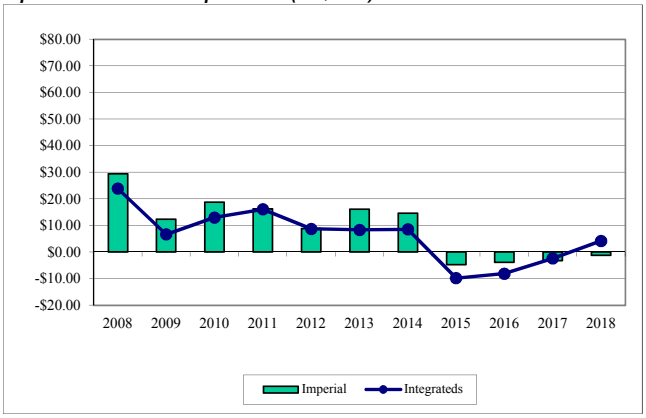
Production Costs (US$/boe)



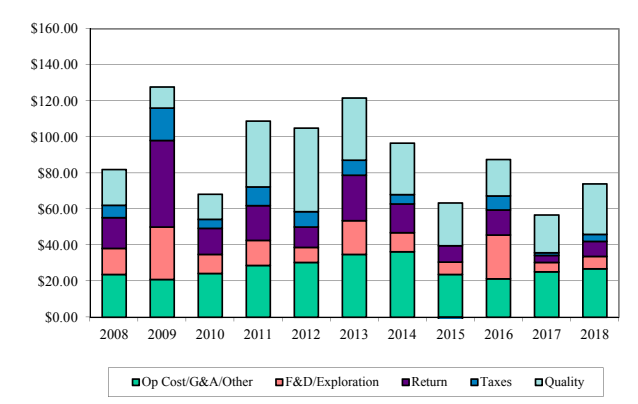
Upstream Operating Earnings (US$/boe)



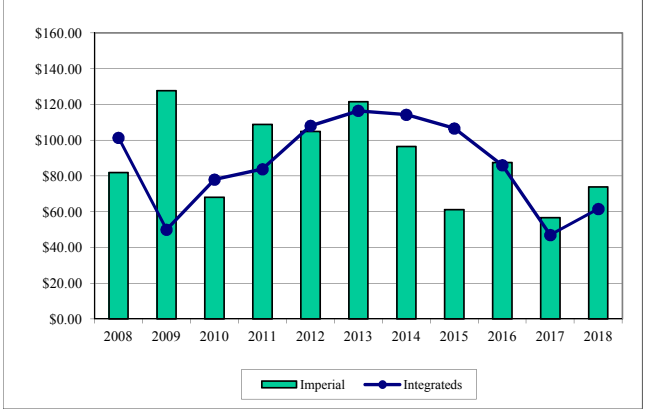
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Notes: Reserve estimates reported after royalties; We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions. Blended with Conventional F&D results for North American Segment.
Source: BMO Capital Markets, Company Reports

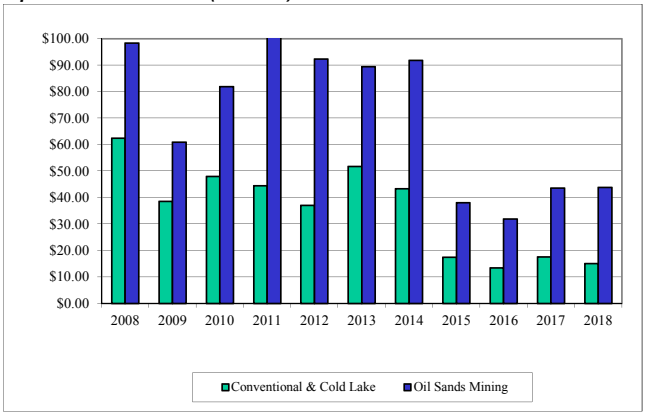
See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

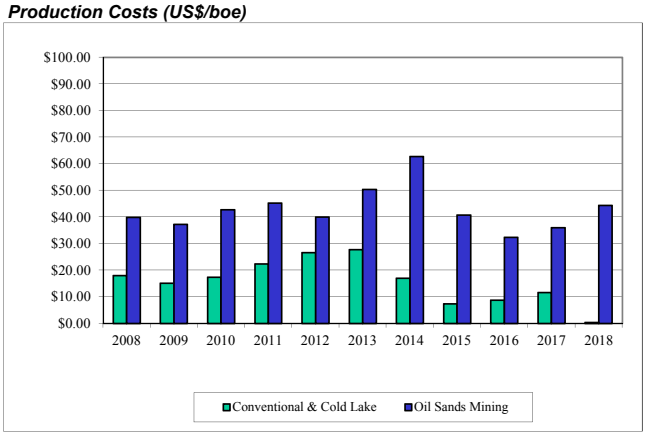
US$/boe, net

Operating Segments

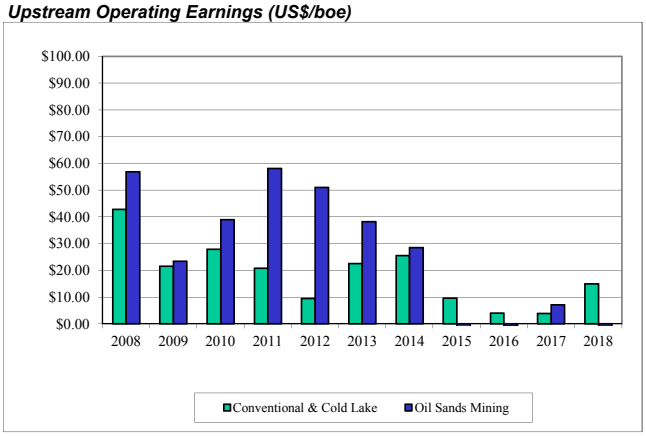
Upstream Net Revenue (US$/boe)



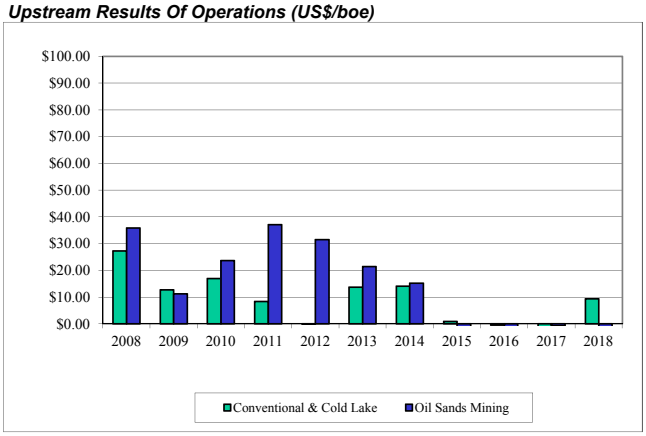
Production Costs (US$/boe)



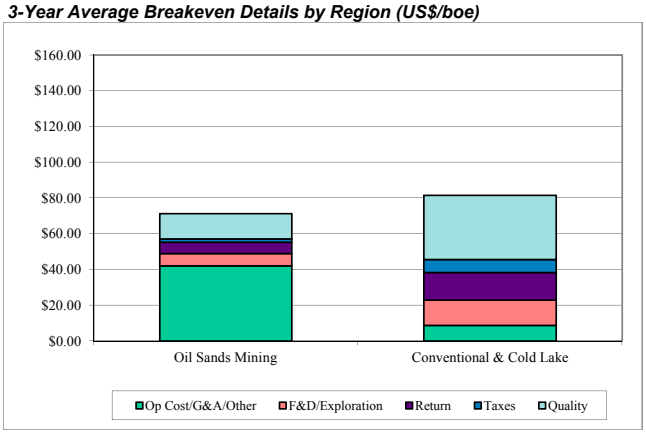
Upstream Operating Earnings (US$/boe)



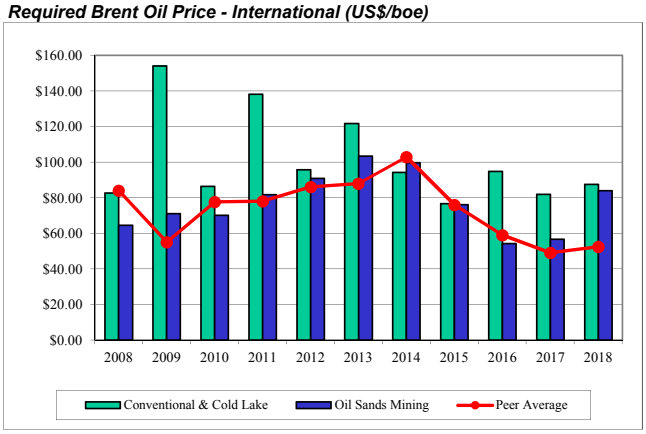
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	10,602	6,095	7,908	10,021	8,835	9,894	11,921	6,487	5,832	7,389	8,621
Midstream / Downstream Revenue	27,396	17,280	22,339	28,737	29,388	28,227	26,837	17,498	17,428	18,138	21,907
Other	(8,212)	(4,526)	(5,882)	(7,687)	(7,016)	(6,140)	(5,277)	(2,928)	(2,594)	(2,838)	(3,438)
Total Revenue and Other Income	29,786	18,848	24,366	31,072	31,207	31,981	33,480	21,057	20,666	22,689	27,090
Crude Oil and Product Purchases	17,794	10,512	14,382	19,067	18,487	19,575	20,359	11,969	11,423	13,991	16,626
Production and Transportation Expenses	3,988	3,480	3,880	4,162	4,460	5,136	5,128	4,256	3,947	4,307	4,724
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	125	135	185	93	83	119	61	57	71	141	15
General and Administrative	979	974	1,039	1,182	1,082	1,051	974	875	853	689	701
Depreciation, Depletion and Amortization	687	688	725	773	761	1,078	993	1,136	1,230	1,675	1,200
Interest, net	-	4	7	3	(1)	11	4	31	49	60	83
Other	1,238	1,117	1,278	1,335	1,339	1,382	1,415	1,228	1,247	1,376	1,369
Earnings Before Income Tax	4,977	1,938	2,869	4,457	4,996	3,629	4,548	1,506	1,846	449	2,372
Current Income Taxes	948	601	572	966	593	415	96	353	151	(45)	(11)
Future Income Taxes	371	(54)	151	81	634	468	1,023	274	60	116	597
Total Income Taxes	1,319	547	722	1,047	1,228	883	1,119	627	211	71	586
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	3,658	1,391	2,146	3,410	3,768	2,747	3,428	879	1,636	378	1,786
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	3,658	1,391	2,146	3,410	3,768	2,747	3,428	879	1,636	378	1,786
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	3,658	1,391	2,146	3,410	3,768	2,747	3,428	879	1,636	378	1,786

Note: Converted to US$ from C$
Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	3,658	1,391	2,146	3,410	3,768	2,747	3,428	879	1,636	378	1,786
Charges and Credits Not Impacting Cash	1,052	634	873	845	1,381	1,546	2,010	1,423	1,316	1,922	1,822
Other	(227)	(40)	(92)	(199)	(94)	(146)	(630)	(30)	(1,695)	(170)	(42)
Cash Flow From Operations	4,482	1,985	2,927	4,056	5,055	4,147	4,807	2,272	1,256	2,131	3,567
Change in Working Capital / Other	(461)	(584)	187	486	(372)	(950)	(818)	(575)	266	-	(540)
Net Cash From Operating Activities	4,021	1,401	3,114	4,541	4,683	3,197	3,990	1,697	1,522	2,131	3,027
Total Capital Expenditures	(1,161)	(2,013)	(3,744)	(3,965)	(5,481)	(6,116)	(4,791)	(2,345)	(811)	(766)	(1,151)
Acquisitions, net	257	59	140	318	226	(1,400)	771	111	2,282	179	46
Other	(2)	2	3	12	14	4	(111)	(25)	(1)	(15)	(98)
Net Cash From Investing Activities	(906)	(1,952)	(3,602)	(3,635)	(5,241)	(7,512)	(4,132)	(2,259)	1,471	(602)	(1,203)
Net Change in Debt	-	-	602	460	325	4,513	498	919	(2,458)	(21)	(21)
Net Change in Common Stock	(2,085)	(433)	(8)	(60)	(128)	-	-	-	-	(483)	(1,521)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(311)	(300)	(346)	(377)	(398)	(395)	(399)	(352)	(372)	(404)	(441)
Other	4	(3)	-	16	39	(7)	(8)	(16)	(21)	-	-
Net Cash From Financing Activities	(2,392)	(736)	249	39	(162)	4,111	91	552	(2,851)	(908)	(1,984)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	723	(1,287)	(239)	946	(720)	(204)	(52)	(9)	142	620	(160)
Cash and Equivalents, Beginning of Year	922	1,645	358	119	1,065	344	140	89	79	221	841
Cash and Equivalents, End of Year	1,645	358	119	1,065	344	140	89	79	221	841	681

Note: Converted to US$ from C$
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	4,379	3,087	3,436	5,142	4,095	4,164	3,232	2,874	2,894	4,169	4,133
Net Property, Plant and Equipment	10,609	11,321	15,445	19,385	23,937	30,418	32,219	29,602	27,449	26,582	26,416
Other Assets	1,079	983	1,104	1,198	1,351	1,565	1,528	1,332	1,126	1,327	1,448
Total Assets	16,068	15,391	19,984	25,725	29,382	36,146	36,980	33,808	31,469	32,078	31,997
Total Current Liabilities	3,913	3,319	4,445	6,018	5,909	6,884	5,417	4,223	2,934	3,189	3,053
Long-term Debt	32	27	512	853	1,176	4,316	4,450	5,140	3,802	3,859	3,842
Deferred Income Taxes	1,404	1,230	1,501	1,457	1,925	2,983	3,479	3,282	3,069	3,273	3,929
Other Liabilities and Deferred Credits	2,168	2,501	2,673	3,921	3,985	3,002	3,229	2,817	2,762	2,915	2,271
Total Liabilities	7,518	7,077	9,131	12,249	12,995	17,185	16,574	15,463	12,566	13,237	13,096
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	1,441	1,328	1,467	1,546	1,567	1,521	1,418	1,226	1,183	1,184	1,116
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	8,002	8,150	10,769	14,194	17,277	19,112	20,852	18,550	19,153	19,057	18,956
Other / Comprehensive Income (Loss)	(893)	(1,164)	(1,383)	(2,264)	(2,457)	(1,671)	(1,865)	(1,432)	(1,433)	(1,400)	(1,171)
Total Shareholders' Equity	8,550	8,314	10,854	13,476	16,387	18,962	20,405	18,345	18,903	18,842	18,901
Total Liabilities and Shareholders' Equity	16,068	15,391	19,984	25,725	29,382	36,146	36,980	33,808	31,469	32,078	31,997
Return on Capital Employed (ROCE)	**46.3%**	**16.7%**	**20.5%**	**24.7%**	**21.8%**	**12.1%**	**12.9%**	**3.5%**	**7.1%**	**1.9%**	**8.5%**

Note: Converted to US$ from C$
Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	6,630	4,148	5,107	5,339	4,677	6,009	6,143	3,397	3,023	3,881	4,035	10,939	20,479
Production Costs	2,172	1,948	2,161	2,513	2,706	3,294	3,496	2,919	2,763	3,053	3,351	9,167	15,582
Exploration	115	133	185	93	83	119	61	57	71	141	15	227	345
DD&A	478	476	506	534	498	569	715	863	963	1,251	888	3,103	4,681
G&A/Other	36	0	0	9	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	3,829	1,591	2,256	2,190	1,390	2,026	1,872	-442	-774	-564	-219	-1,558	-128
Income Taxes	1,091	431	574	764	601	497	465	136	-277	-167	-71	-515	86
Results Of Operations	2,739	1,160	1,682	1,426	788	1,529	1,407	-578	-498	-397	-148	-1,043	-214

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	6,630	4,148	5,107	5,339	4,677	6,009	6,143	3,397	3,023	3,881	4,035	10,939	20,479
Production Costs	2,172	1,948	2,161	2,513	2,706	3,294	3,496	2,919	2,763	3,053	3,351	9,167	15,582
Exploration	115	133	185	93	83	119	61	57	71	141	15	227	345
DD&A	478	476	506	534	498	569	715	863	963	1,251	888	3,103	4,681
G&A/Other	36	0	0	9	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	3,829	1,591	2,256	2,190	1,390	2,026	1,872	-442	-774	-564	-219	-1,558	-128
Income Taxes	1,091	431	574	764	601	497	465	136	-277	-167	-71	-515	86
Results Of Operations	2,739	1,160	1,682	1,426	788	1,529	1,407	-578	-498	-397	-148	-1,043	-214

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Converted to US$ from C$
Source: BMO Capital Markets, Company Reports

Imperial Oil (IMO - TSX, AMEX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$71.23	$44.28	$57.06	$60.79	$52.55	$63.59	$63.66	$27.51	$23.16	$31.85	$32.37	$29.02	$34.30
Production Costs	$23.34	$20.80	$24.14	$28.61	$30.40	$34.86	$36.23	$23.63	$21.17	$25.06	$26.88	$24.32	$26.10
Exploration	$1.24	$1.42	$2.06	$1.06	$0.93	$1.26	$0.63	$0.46	$0.54	$1.16	$0.12	$0.60	$0.58
DD&A	$5.13	$5.08	$5.65	$6.08	$5.60	$6.02	$7.41	$6.99	$7.38	$10.27	$7.13	$8.23	$7.84
G&A/Other	$0.39	$0.00	$0.00	$0.10	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$41.14	$16.98	$25.20	$24.94	$15.62	$21.44	$19.40	-$3.58	-$5.93	-$4.63	-$1.76	-$4.13	-$0.21
Income Taxes	$11.72	$4.60	$6.41	$8.70	$6.76	$5.26	$4.81	$1.10	-$2.12	-$1.37	-$0.57	-$1.37	$0.14
Results Of Operations	$29.42	$12.39	$18.79	$16.24	$8.86	$16.18	$14.59	-$4.68	-$3.82	-$3.26	-$1.19	-$2.77	-$0.36

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$71.23	$44.28	$57.06	$60.79	$52.55	$63.59	$63.66	$27.51	$23.16	$31.85	$32.37	$29.02	$34.30
Production Costs	$23.34	$20.80	$24.14	$28.61	$30.40	$34.86	$36.23	$23.63	$21.17	$25.06	$26.88	$24.32	$26.10
Exploration	$1.24	$1.42	$2.06	$1.06	$0.93	$1.26	$0.63	$0.46	$0.54	$1.16	$0.12	$0.60	$0.58
DD&A	$5.13	$5.08	$5.65	$6.08	$5.60	$6.02	$7.41	$6.99	$7.38	$10.27	$7.13	$8.23	$7.84
G&A/Other	$0.39	$0.00	$0.00	$0.10	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$41.14	$16.98	$25.20	$24.94	$15.62	$21.44	$19.40	-$3.58	-$5.93	-$4.63	-$1.76	-$4.13	-$0.21
Income Taxes	$11.72	$4.60	$6.41	$8.70	$6.76	$5.26	$4.81	$1.10	-$2.12	-$1.37	-$0.57	-$1.37	$0.14
Results Of Operations	$29.42	$12.39	$18.79	$16.24	$8.86	$16.18	$14.59	-$4.68	-$3.82	-$3.26	-$1.19	-$2.77	-$0.36

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Operating Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Oil Sands Mining													
Net Revenue	$98.34	$60.92	$81.84	$104.36	$92.31	$89.46	$91.76	$38.01	$31.90	$43.57	$43.76	$39.83	$46.23
Production Costs	$39.85	$37.18	$42.67	$45.18	$40.00	$50.34	$62.72	$40.66	$32.34	$36.03	$44.29	$37.77	$41.57
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$6.97	$8.00	$7.41	$8.75	$9.13	$10.60	$8.82	$6.68	$6.17	$6.95	$6.67	$6.59	$6.90
G&A/Other	$1.57	$0.24	$0.14	$1.02	$1.25	$0.91	$0.55	$0.38	$0.43	$0.45	$0.40	$0.42	$0.43
Pre-tax Results Of Operations	$49.95	$15.49	$31.62	$49.41	$41.93	$27.61	$19.67	-$9.71	-$7.02	$0.13	-$7.60	-$4.96	-$2.67
Income Taxes	$14.09	$4.19	$7.97	$12.24	$10.39	$6.19	$4.43	$0.77	-$0.23	$0.86	$0.53	$0.39	$0.99
Results Of Operations	$35.86	$11.30	$23.64	$37.17	$31.54	$21.42	$15.24	-$10.48	-$6.79	-$0.73	-$8.13	-$5.34	-$3.66

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America Conventional & Cold Lake													
Net Revenue	$62.37	$38.55	$47.98	$44.41	$37.02	$51.67	$43.25	$17.44	$13.38	$17.55	$15.00	$15.24	$21.23
Production Costs	$17.95	$15.16	$17.35	$22.38	$26.65	$27.73	$16.99	$7.32	$8.68	$11.65	$0.34	$7.18	$9.14
Exploration	$1.64	$1.91	$2.82	$1.46	$1.30	$1.85	$1.09	$0.91	$1.15	$2.57	$0.30	$1.37	$1.21
DD&A	$4.53	$4.07	$5.01	$5.08	$4.22	$3.91	$6.38	$7.28	$8.74	$14.33	$7.82	$10.32	$8.87
G&A/Other	$0.00	-$0.08	-$0.05	-$0.24	-$0.49	-$0.42	-$0.40	-$0.36	-$0.48	-$0.55	-$0.61	-$0.54	-$0.47
Pre-tax Results Of Operations	$38.26	$17.50	$22.85	$15.73	$5.34	$18.60	$19.20	$2.30	-$4.72	-$10.46	$7.15	-$3.08	$2.48
Income Taxes	$10.94	$4.74	$5.84	$7.36	$5.34	$4.84	$5.09	$1.43	-$4.23	-$4.11	-$2.24	-$3.60	-$0.78
Results Of Operations	$27.32	$12.76	$17.01	$8.37	$0.00	$13.76	$14.11	$0.87	-$0.49	-$6.35	$9.40	$0.52	$3.26

Note: Converted to US$ from C$
Source: BMO Capital Markets, Company Reports

Imperial Oil (IMO - TSX, AMEX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	249.3	274.0	254.8	227.4	197.3	189.0	156.2	123.3	123.3	112.3	126.0	120.5	128.2
Liquids Production (b/d)	213,470	210,959	202,740	202,740	210,959	227,397	238,356	317,808	336,986	315,068	320,548	324,201	305,753
Total Production (boe/d)	255,023	256,621	245,205	240,639	243,836	258,904	264,384	338,356	357,534	333,790	341,553	344,292	327,123
% Gas Production	16%	18%	17%	16%	13%	12%	10%	6%	6%	6%	6%	6%	7%
% Oil Production	84%	82%	83%	84%	87%	88%	90%	94%	94%	94%	94%	94%	93%
Proven Reserves:													
Gas Reserves (bcf)	593.0	590.0	576.0	422.0	488.0	678.0	627.0	583.0	495.0	641.0	639.0	591.7	597.0
Oil Reserves (mmbbls)	2,201.0	2,415.0	2,453.0	3,121.0	3,493.0	3,508.0	3,854.0	4,130.0	1,300.0	1,463.0	3,694.0	2,152.3	2,888.2
Total Proven Reserves (mmboe)	2,299.8	2,513.3	2,549.0	3,191.3	3,574.3	3,621.0	3,958.5	4,227.2	1,382.5	1,569.8	3,800.5	2,250.9	2,987.7
% Gas Reserves	4%	4%	4%	2%	2%	3%	3%	2%	6%	7%	3%	4%	3%
% Oil Reserves	96%	96%	96%	98%	98%	97%	97%	98%	94%	93%	97%	96%	97%
Proven Reserve Life Index	24.7	26.8	28.5	36.3	40.2	38.3	41.0	34.2	10.6	12.9	30.5	18.0	25.8
Proven Reserve Additions:													
Gas Additions (bcf)	49.0	97.0	79.0	-71.0	138.0	259.0	6.0	1.0	-43.0	187.0	44.0	188.0	195.0
Oil Additions (mmbbls)	877.8	257.0	112.0	742.0	449.0	98.0	433.0	392.0	-2,707.0	278.0	2,348.0	(81.0)	744.0
Total Additions (mmboe)	886.0	273.2	125.2	730.2	472.0	141.2	434.0	392.2	-2,714.2	309.2	2,355.3	-49.7	776.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	885.8	0.0	0.2	709.5	241.8	0.0	10.5	5.0	4.5	15.3	34.3	54.2	69.7
Acquisitions	0.0	0.0	0.0	0.0	0.0	53.5	0.0	2.8	0.0	8.7	0.0	8.7	11.5
Dispositions	0.0	(0.2)	(0.3)	(17.2)	(1.2)	-	(22.0)	-	-	-	-	-	(22.0)
Revisions of Estimates	0.2	273.3	125.3	37.8	231.3	87.7	445.5	384.3	-2,718.7	285.2	2,321.0	(112.5)	717.3
Components as % of Total Additions:													
Extensions, Discoveries and Additions	100.0%	0.0%	0.1%	97.2%	51.2%	0.0%	2.4%	1.3%	-0.2%	5.0%	1.5%	-109.1%	9.0%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	37.9%	0.0%	0.7%	0.0%	2.8%	0.0%	-17.4%	1.5%
Dispositions	0.0%	-0.1%	-0.3%	-2.4%	-0.2%	0.0%	-5.1%	0.0%	0.0%	0.0%	0.0%	0.0%	-2.8%
Revisions of Estimates	0.0%	100.1%	100.1%	5.2%	49.0%	62.1%	102.6%	98.0%	100.2%	92.2%	98.5%	226.5%	92.4%
Additions as % of Production:													
Gas	53.8%	97.0%	84.9%	-85.5%	191.7%	375.4%	10.5%	2.2%	-95.6%	456.1%	95.7%	142.4%	83.3%
Oil	1126.6%	333.8%	151.4%	1002.7%	583.1%	118.1%	497.7%	337.9%	-2200.8%	241.7%	2006.8%	-22.8%	133.3%
Total	951.8%	291.6%	139.9%	831.3%	530.3%	149.4%	449.7%	317.5%	-2079.8%	253.8%	1889.3%	-13.2%	130.1%
Additions as % of Reserves:													
Gas	8.3%	16.4%	13.7%	-16.8%	28.3%	38.2%	1.0%	0.2%	-8.7%	29.2%	6.9%	31.8%	32.7%
Oil	39.9%	10.6%	4.6%	23.8%	12.9%	2.8%	11.2%	9.5%	-208.2%	19.0%	63.6%	-3.8%	25.8%
Total	38.5%	10.9%	4.9%	22.9%	13.2%	3.9%	11.0%	9.3%	-196.3%	19.7%	62.0%	-2.2%	26.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$115.1	$205.2	$252.5	$134.5	$109.1	$120.4	$67.0	$59.5	$52.9	$30.8	$14.7	$98.4	$224.9
Development	$942.5	$1,654.2	$3,413.3	$3,836.2	$5,128.1	$5,678.7	$4,265.8	$2,376.8	$410.2	$165.0	$745.6	$1,320.8	$7,963.5
Acquisitions	$0.0	$168.2	$68.0	$115.3	$33.0	$1,988.1	$0.0	$0.0	$0.8	$24.7	$0.0	$25.4	$25.4
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$1,057.5	$2,027.7	$3,733.7	$4,086.1	$5,270.2	$7,787.1	$4,332.9	$2,436.3	$463.9	$220.5	$760.2	$1,444.6	$8,213.8
Expenditures as % of Total:													
Exploration	10.9%	10.1%	6.8%	3.3%	2.1%	1.5%	1.5%	2.4%	11.4%	14.0%	1.9%	6.8%	2.7%
Development	89.1%	81.6%	91.4%	93.9%	97.3%	72.9%	98.5%	97.6%	88.4%	74.8%	98.1%	91.4%	97.0%
Acquisitions	0.0%	8.3%	1.8%	2.8%	0.6%	25.5%	0.0%	0.0%	0.2%	11.2%	0.0%	1.8%	0.3%
Cashflow (US$million)	$3,331.3	$1,768.7	$2,372.3	$2,053.6	$1,369.8	$2,217.3	$2,182.7	$342.2	$536.4	$995.5	$754.8	$2,286.7	$4,811.7
Cashflow (US$/boe)	$35.79	$18.88	$26.51	$23.38	$15.39	$23.46	$22.62	$2.77	$4.11	$8.17	$6.05	$6.07	$8.06
Recycle Ratio	2.7x	0.7x	3.1x	1.8x	2.1x	1.4x	2.3x	0.4x	0.2x	2.0x	0.9x	0.7x	0.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$1.19	$6.80	$29.21	$5.31	$11.07	$66.15	$9.50	$6.26	-$0.17	$0.65	$0.32	-$24.33	$10.40
Acquisition Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
All Sources (incl. revisions)	$1.19	$7.42	$29.75	$5.47	$11.14	$55.16	$9.50	$6.21	-$0.17	$0.71	$0.32	-$29.09	$10.29
All Sources - Adjusted*	$13.10	$27.70	$8.49	$12.87	$7.39	$17.33	$10.00	$6.39	$23.78	$4.02	$6.64	$9.03	$8.63
Exploration & Development (excl. revisions)	$1.19	nm	nm	$5.60	$21.66	nm	$412.65	$487.27	$102.91	$12.77	$22.14	$26.20	$117.54
Acquisition Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
All Sources (excl. revisions)	$1.19	nm	nm	$5.76	$21.79	$145.55	$412.65	$311.02	$103.08	$9.19	$22.14	$22.99	$101.20
Geographically Segmented Costs													
North America Conventional & Cold Lake	$24.74	$91.62	$11.71	$30.58	$2.67	$34.04	$13.77	$5.61	$35.92	$2.76	$6.57	$15.09	$12.93
Oil Sands - Adjusted*	$6.97	$8.00	$7.41	$8.75	$9.13	$10.60	$8.82	$6.68	$6.17	$6.95	$6.67	$6.59	$6.90
North America Including Oil Sands*	$13.10	$27.70	$8.49	$12.87	$7.39	$17.33	$10.00	$6.39	$23.78	$4.02	$6.64	$9.03	$8.63

Notes: Reserve estimates reported after royalties; We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions. Blended with Conventional F&D results for North American Segment
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	23.34	20.80	24.14	28.61	30.40	34.86	36.23	23.63	21.17	25.06	25.06	24.32	26.10
Exploration Expense	1.24	1.42	2.06	1.06	0.93	1.26	0.63	0.46	0.54	1.16	1.16	0.60	0.58
G&A/Other	0.39	-	-	0.10	-	-	-	-	-	-	-	-	-
F&D Costs	13.10	27.70	8.49	12.87	7.39	17.33	10.00	6.39	23.78	4.02	4.02	9.03	8.63
Return on Capital	17.21	48.17	14.57	19.29	11.23	25.30	15.91	9.06	13.97	3.89	3.89	8.37	9.91
Income Taxes	6.85	17.89	4.97	10.33	8.57	8.23	5.25	(2.14)	7.76	1.64	1.64	4.05	2.23
Breakeven Oil Price	62.12	115.98	54.24	72.26	58.52	86.98	68.01	37.41	67.23	35.77	35.77	46.36	47.44
Quality Differential	19.73	11.65	13.93	36.49	46.37	34.64	28.46	23.75	20.25	20.88	20.88	23.04	24.27
Required WTI Price	81.85	127.63	68.17	108.75	104.89	121.62	96.47	61.16	87.48	56.65	56.65	69.40	71.71

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	23.34	20.80	24.14	28.61	30.40	34.86	36.23	23.63	21.17	25.06	25.06	24.32	26.10
Exploration Expense	1.24	1.42	2.06	1.06	0.93	1.26	0.63	0.46	0.54	1.16	1.16	0.60	0.58
G&A/Other	0.39	-	-	0.10	-	-	-	-	-	-	-	-	-
F&D Costs	13.10	27.70	8.49	12.87	7.39	17.33	10.00	6.39	23.78	4.02	4.02	9.03	8.63
Return on Capital	17.21	48.17	14.57	19.29	11.23	25.30	15.91	9.06	13.97	3.89	3.89	8.37	9.91
Income Taxes	6.85	17.89	4.97	10.33	8.57	8.23	5.25	(2.14)	7.76	1.64	1.64	4.05	2.23
Breakeven Oil Price	62.12	115.98	54.24	72.26	58.52	86.98	68.01	37.41	67.23	35.77	35.77	46.36	47.44
Quality Differential	19.73	11.65	13.93	36.49	46.37	34.64	28.46	23.75	20.25	20.88	20.88	23.04	24.27
Required WTI Price	81.85	127.63	68.17	108.75	104.89	121.62	96.47	61.16	87.48	56.65	56.65	69.40	71.71

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	-	-	-	-	-	-	-	-	-	-	-	-	-
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	-	-	-	-	-	-	-	-	-	-	-	-	-

North American Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Oil Sands Mining													
Operating Costs	39.85	37.18	42.67	45.18	40.00	50.34	62.72	40.66	32.34	36.03	44.29	37.77	41.57
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.57	0.24	0.14	1.02	1.25	0.91	0.55	0.38	0.43	0.45	0.40	0.42	0.43
F&D Costs	6.97	8.00	7.41	8.75	9.13	10.60	8.82	6.68	6.17	6.95	6.67	6.59	6.90
Return on Capital	11.56	17.40	16.04	15.21	15.84	17.23	15.43	10.00	1.55	1.53	7.68	3.34	6.32
Income Taxes	4.54	6.45	5.41	5.01	5.22	4.98	4.49	2.91	0.45	0.45	2.23	0.97	1.84
Breakeven Oil Price	64.49	69.27	71.68	75.17	71.44	84.05	92.00	60.63	40.93	45.41	61.27	49.11	57.06
Quality Differential	(0.07)	1.71	(1.50)	6.59	19.38	19.27	7.62	15.54	13.22	11.23	22.75	15.73	14.07
Required WTI Price	64.42	70.98	70.18	81.76	90.82	103.33	99.62	76.18	54.15	56.63	84.03	64.84	71.14

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Conventional & Cold Lake													
Operating Costs	17.95	15.16	17.35	22.38	26.65	27.73	16.99	7.32	8.68	11.65	0.34	7.18	9.14
Exploration Expense	1.64	1.91	2.82	1.46	1.30	1.85	1.09	0.91	1.15	2.57	0.30	1.37	1.21
G&A/Other	-	(0.08)	(0.05)	(0.24)	(0.49)	(0.42)	(0.40)	(0.36)	(0.48)	(0.55)	(0.61)	(0.54)	(0.47)
F&D Costs	24.74	91.62	11.71	30.58	2.67	34.04	13.77	5.61	35.92	2.76	6.57	15.09	12.93
Return on Capital	17.67	54.24	7.12	18.09	2.61	35.80	15.28	6.74	31.29	3.73	9.95	18.53	15.57
Income Taxes	7.08	20.15	2.44	6.72	0.94	12.58	5.52	2.43	11.29	2.41	6.44	9.99	7.20
Breakeven Oil Price	69.07	183.00	41.39	78.99	33.68	111.58	52.25	22.64	87.85	22.57	22.99	51.62	45.57
Quality Differential	26.20	15.07	19.59	47.73	56.92	41.72	43.59	31.62	28.11	32.67	43.27	34.69	35.85
Required WTI Price	95.27	198.07	60.98	126.72	90.59	153.30	95.83	54.26	115.97	55.25	66.26	86.30	81.42

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Imperial Oil (IMO - TSX, AMEX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.15	27.35	32.25	34.08	38.25	38.65	24.46	21.87	21.87	26.00	28.02	25.23	27.19
Exploration Expense	1.58	2.34	1.19	1.05	1.39	0.67	0.48	0.56	0.56	1.20	0.12	0.62	0.60
G&A/Other	-	-	0.12	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	11.75	8.65	13.08	7.51	19.67	10.03	6.40	36.58	36.58	5.10	7.72	11.49	11.71
Return on Capital	20.91	15.39	20.07	11.68	28.92	16.16	9.14	21.49	21.49	4.94	9.77	10.69	13.51
Income Taxes	7.77	5.25	10.75	8.91	9.41	5.34	(2.16)	11.93	11.93	2.08	4.68	5.17	3.04
Breakeven Oil Price	**65.16**	**58.98**	**77.45**	**63.23**	**97.63**	**70.85**	**38.33**	**92.43**	**92.43**	**39.33**	**50.31**	**53.20**	**56.05**
Quality Differential	12.96	15.79	41.13	51.99	38.00	30.36	24.59	20.91	20.91	21.67	32.40	25.00	25.99
Required WTI Price	**78.12**	**74.76**	**118.59**	**115.22**	**135.63**	**101.21**	**62.92**	**113.35**	**113.35**	**61.00**	**82.72**	**78.20**	**82.04**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.15	27.35	32.25	34.08	38.25	38.65	24.46	21.87	21.87	26.00	28.02	25.23	27.19
Exploration Expense	1.58	2.34	1.19	1.05	1.39	0.67	0.48	0.56	0.56	1.20	0.12	0.62	0.60
G&A/Other	-	-	0.12	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	9.51	8.90	88.58	72.47	8.28	17.11	1.54	38.46	38.46	13.76	13.35	13.35	16.85
Return on Capital	17.03	15.92	128.60	107.99	11.63	26.66	2.11	22.59	22.59	13.30	16.91	12.41	19.49
Income Taxes	6.32	5.43	68.86	82.36	3.78	8.80	(0.50)	12.55	12.55	5.60	8.11	6.00	4.38
Breakeven Oil Price	**57.59**	**59.93**	**319.60**	**297.95**	**63.33**	**91.89**	**28.10**	**96.03**	**96.03**	**59.87**	**66.52**	**57.61**	**68.51**
Quality Differential	12.96	15.79	41.13	51.99	38.00	30.36	24.59	20.91	20.91	21.67	32.40	25.00	25.99
Required WTI Price	**70.55**	**75.72**	**360.73**	**349.94**	**101.33**	**122.24**	**52.69**	**116.94**	**116.94**	**81.54**	**98.93**	**82.61**	**94.50**

Source: BMO Capital Markets, Company Reports

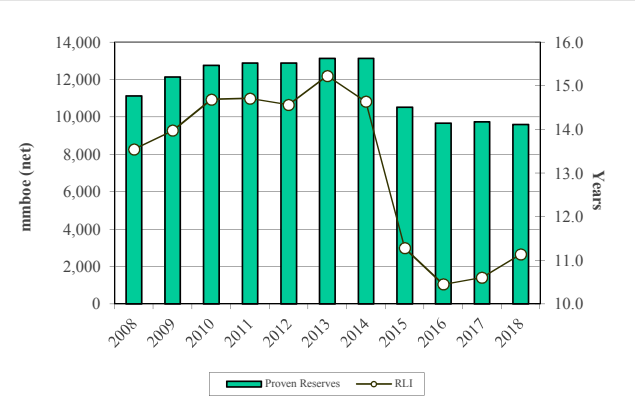
Petrobras (PBR - NYSE)

US$, net

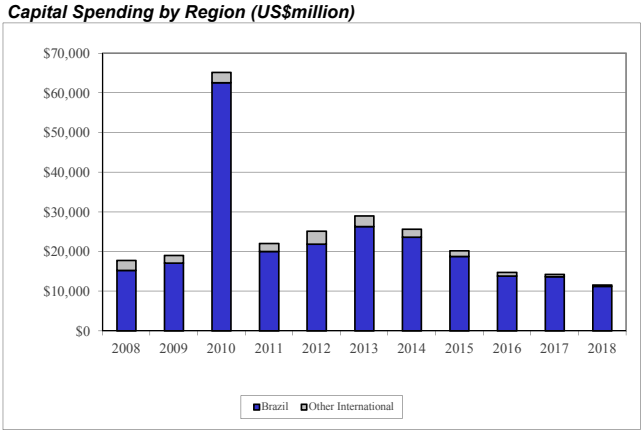
- Petrobras's results from operations improved to $14.87/boe in 2018 from $7.68/boe last year.
- One-year F&D costs dropped to $10.66/boe in 2018 from $14.27/boe. On a realized oil:gas price ratio basis, F&D costs declined to $11.43/boe versus $14.41/boe, while costs for PD reserves also lowered to $10.35/boe compared to $17.15/boe last year.
- Petrobras' operations in 2018 imply a required Brent breakeven oil price of $55.48/boe on a realized ratio basis on total proved reserves, while its PD cost assessment implied a Brent breakeven oil price of $53.12/boe.
- The company reported ROCE of 7.3% in 2018 compared to 0.6% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

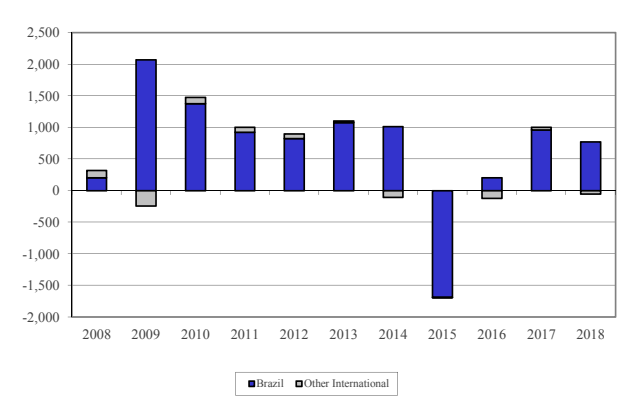
Proven Reserves vs RLI



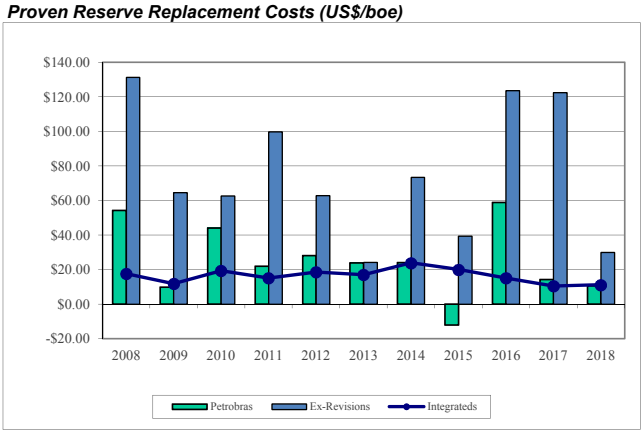
Capital Spending by Region (US$million)



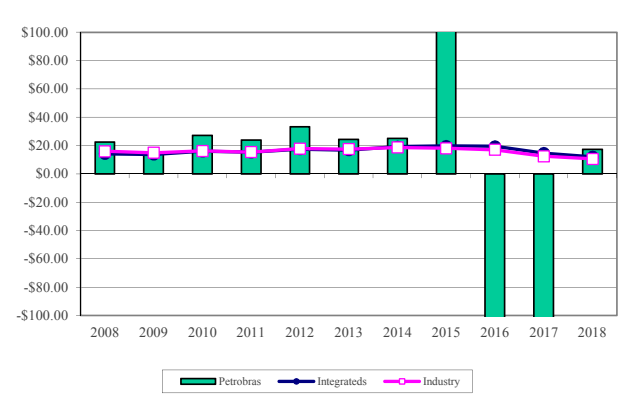
Proven Reserve Additions by Region (million boe)



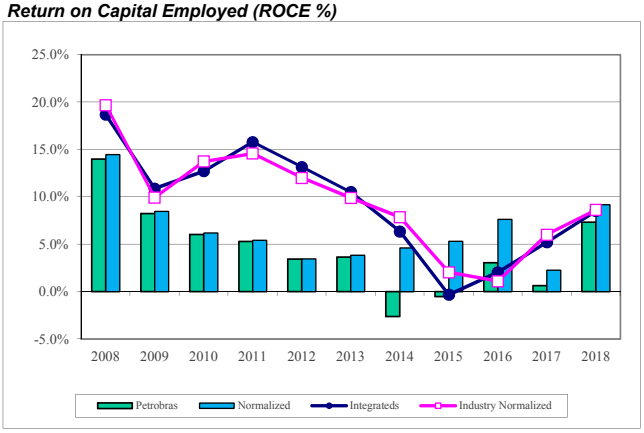
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)*



Return on Capital Employed (ROCE %)



*Note: 2010 F&D costs include a $43 billion payment for assignment of pre-salt exploration and production rights offshore Brazil
Source: BMO Capital Markets, Company Reports

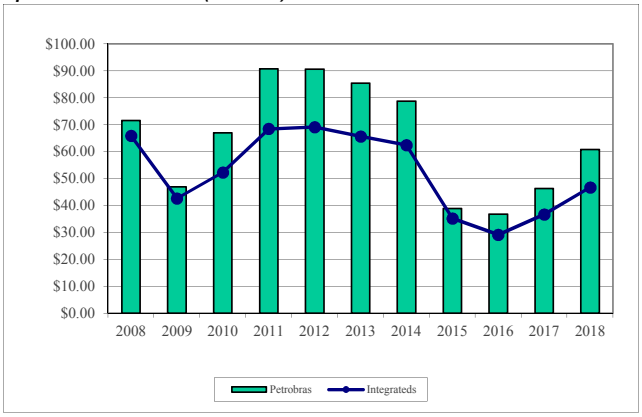
See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

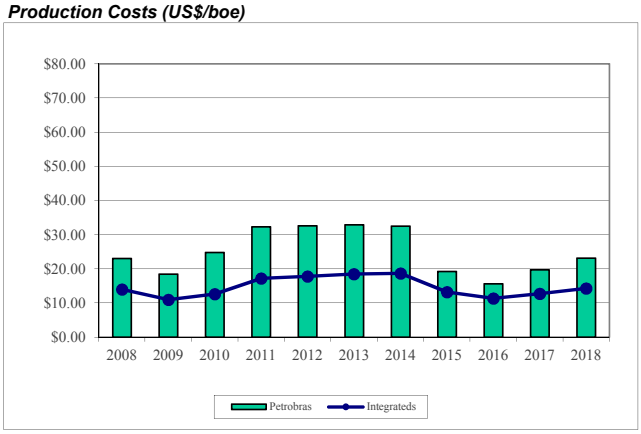
US$/boe, net

Worldwide

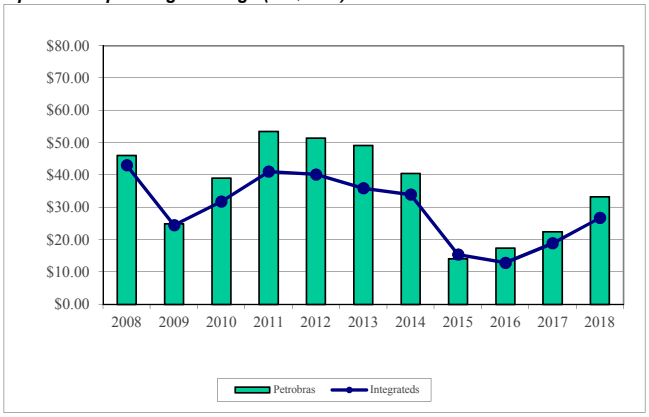
Upstream Net Revenue (US$/boe)



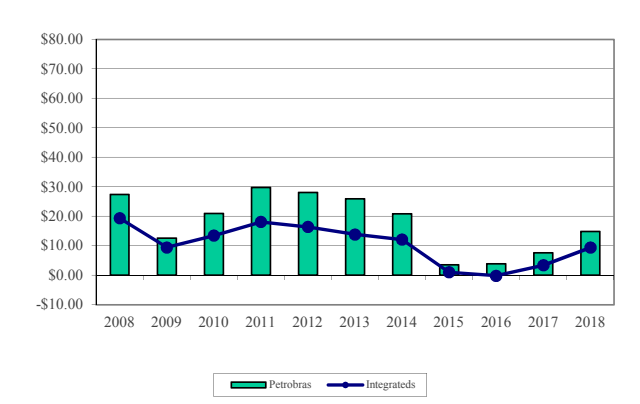
Production Costs (US$/boe)



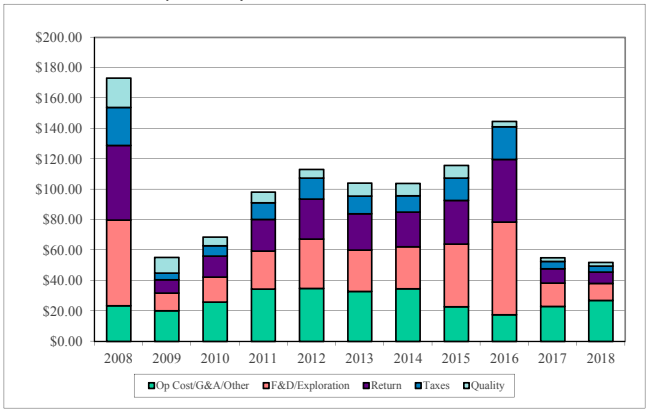
Upstream Operating Earnings (US$/boe)



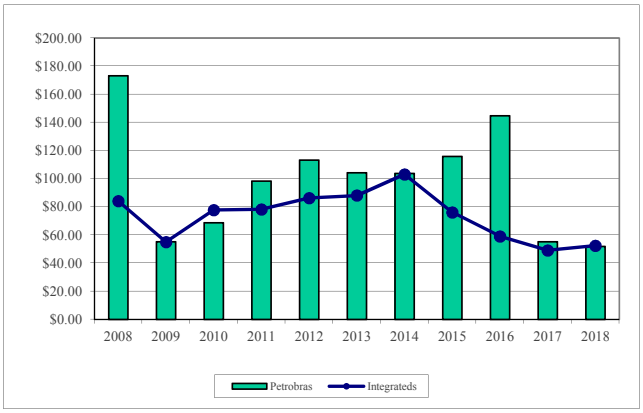
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)*



Required Brent Oil Price (US$/boe)*



*Note: 2010 breakeven is adjusted to exclude $43 billion payment for assignment of pre-salt exploration and production rights offshore Brazil
Source: BMO Capital Markets, Company Reports

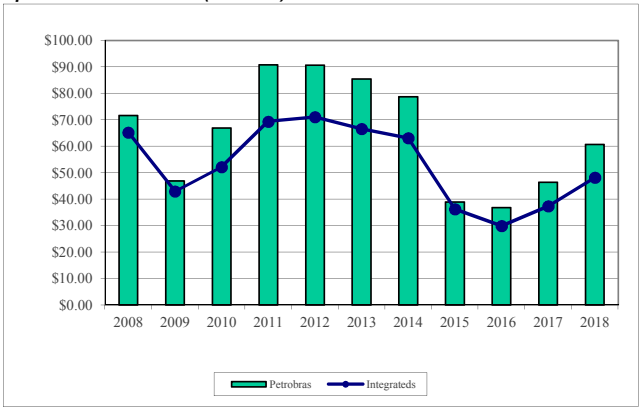
See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

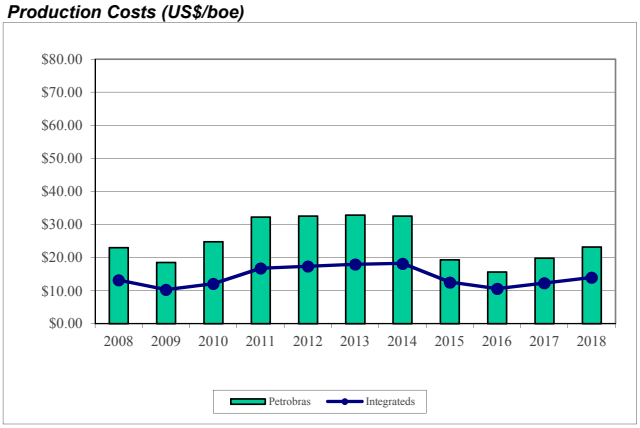
US$/boe, net

Total International

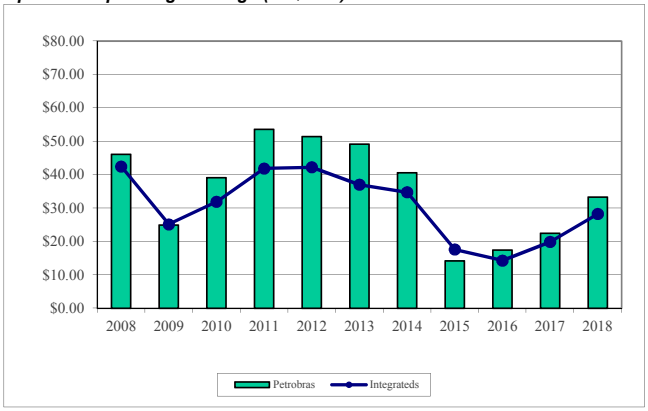
Upstream Net Revenue (US$/boe)



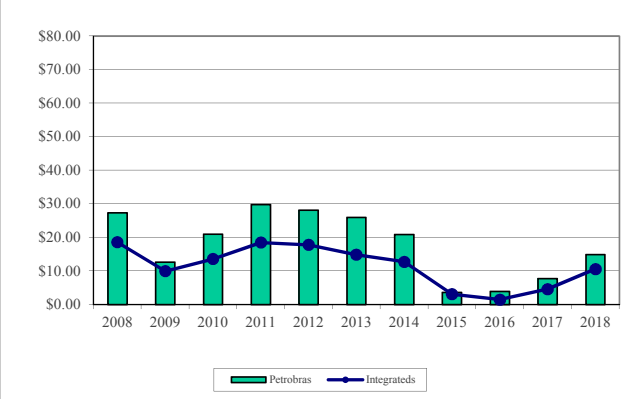
Production Costs (US$/boe)



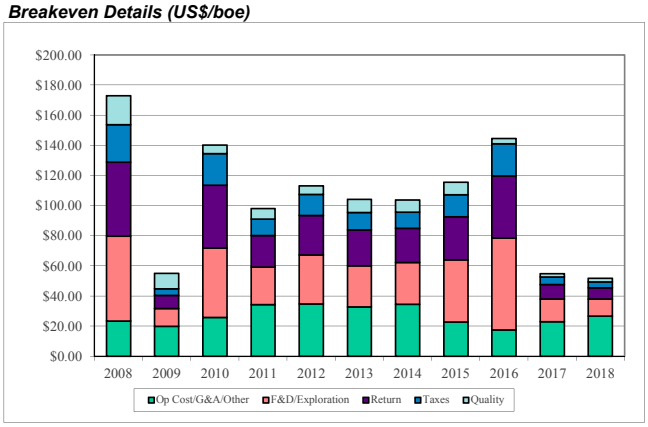
Upstream Operating Earnings (US$/boe)



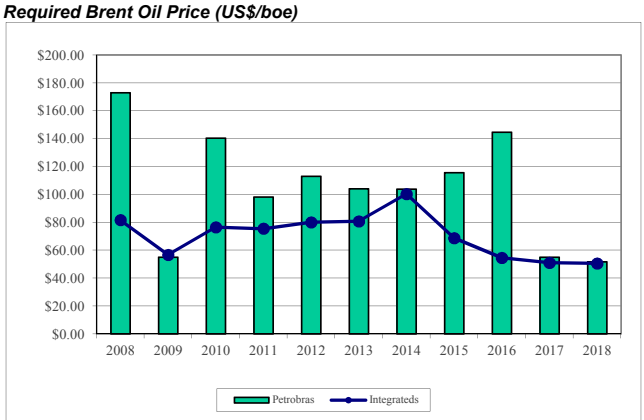
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



*Note: 2010 breakeven is adjusted to exclude $43 billion payment for assignment of pre-salt exploration and production rights offshore Brazil
Source: BMO Capital Markets, Company Reports

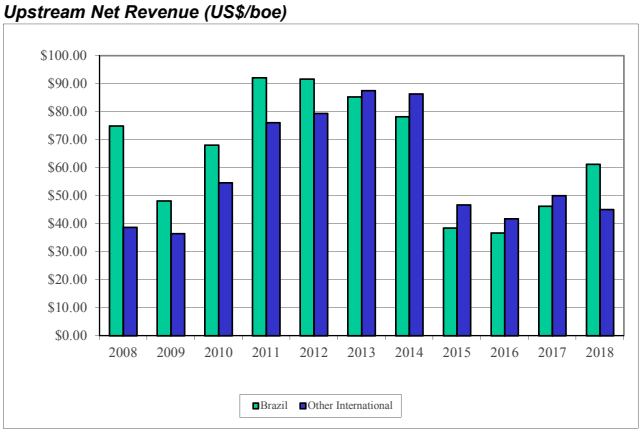
See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

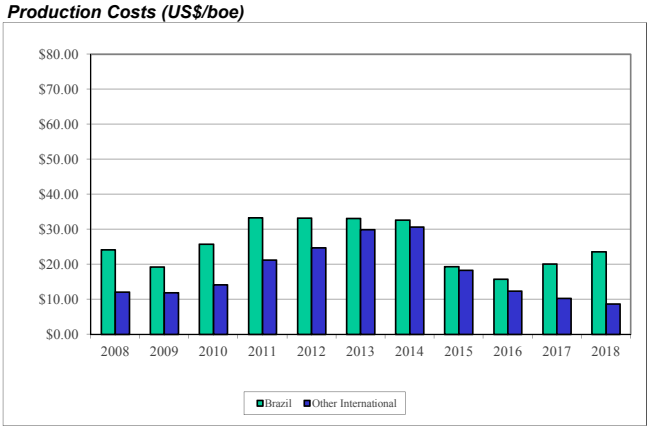
US$/boe, net

International Segments

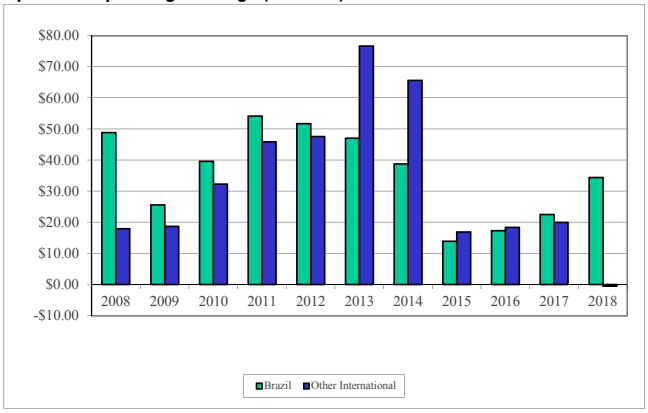
Upstream Net Revenue (US$/boe)



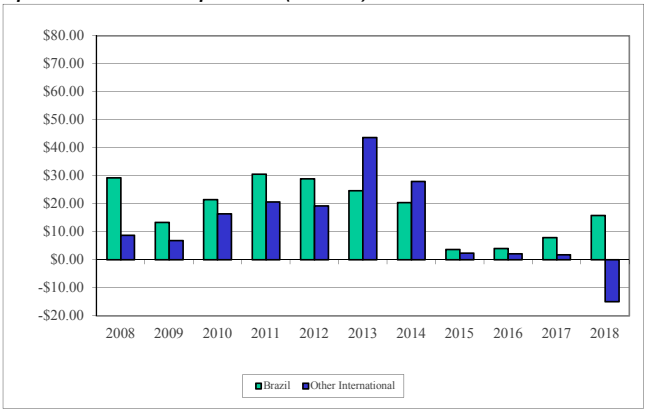
Production Costs (US$/boe)



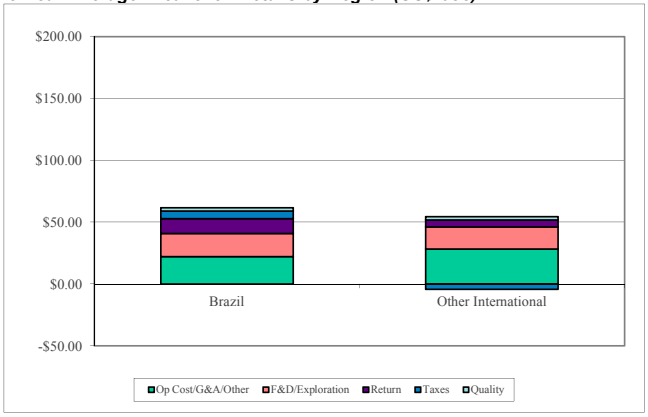
Upstream Operating Earnings (US$/boe)



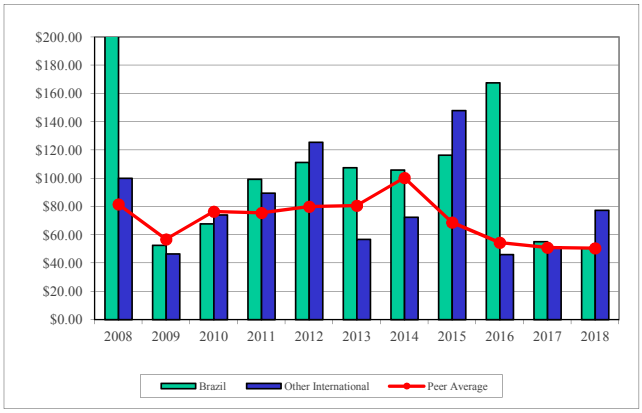
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	61,865	41,720	57,997	91,073	92,643	84,512	79,528	35,680	33,675	42,184	52,382
Midstream / Downstream Revenue	146,358	119,108	155,494	118,630	116,710	111,051	112,320	74,321	62,588	67,037	73,448
Other	(89,966)	(68,959)	(93,439)	(63,788)	(65,250)	(54,101)	(48,191)	(12,687)	(14,858)	(20,394)	(30,246)
Total Revenue and Other Income	118,257	91,869	120,052	145,915	144,103	141,462	143,657	97,314	81,405	88,827	95,584
Crude Oil and Product Purchases	72,865	49,251	70,694	99,595	107,534	108,254	109,477	67,485	55,417	60,147	61,517
Production and Transportation Expenses	-	-	-	-	-	-	-	-	-	-	-
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,775	1,702	1,981	2,630	3,994	2,959	3,058	1,911	1,761	800	524
General and Administrative	7,429	7,020	8,977	10,507	9,961	9,886	11,583	7,978	7,282	7,456	7,086
Depreciation, Depletion and Amortization	5,928	7,188	8,507	10,535	11,119	13,188	13,023	11,591	13,965	13,307	12,028
Interest, net	(793)	(604)	(987)	(76)	1,926	2,791	1,635	8,441	7,755	9,895	5,857
Other	4,061	5,251	5,049	(4,258)	(5,130)	(9,026)	13,705	9,656	(1,110)	(4,775)	(3,526)
Earnings Before Income Tax	26,992	22,061	25,831	26,982	14,699	13,410	(8,824)	(9,748)	(3,665)	1,997	12,098
Current Income Taxes	6,904	4,378	3,396	3,133	2,296	2,176	1,724	906	1,596	1,361	3,920
Future Income Taxes	2,355	860	2,960	3,599	1,266	402	(3,045)	(2,043)	(912)	467	764
Total Income Taxes	9,259	5,238	6,356	6,732	3,562	2,578	(1,321)	(1,137)	684	1,828	4,684
Minority Interest	1,146	(1,319)	(291)	(129)	(103)	262	136	161	-	-	-
Earnings From Continuing Operations	18,879	15,504	19,184	20,121	11,034	11,094	(7,367)	(8,450)	(4,349)	169	7,414
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	18,879	15,504	19,184	20,121	11,034	11,094	(7,367)	(8,450)	(4,349)	169	7,414
Preferred Stock Dividends	7,963	6,539	8,141	8,641	4,739	4,765	-	-	-	-	-
Net Earnings to Common Shareholders	10,916	8,965	11,043	11,480	6,295	6,329	(7,367)	(8,450)	(4,349)	169	7,414

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	18,879	15,504	19,184	20,121	11,034	11,094	(7,367)	(8,450)	(4,349)	169	7,414
Charges and Credits Not Impacting Cash	9,610	9,618	13,070	16,670	16,112	16,607	28,979	23,288	20,526	14,686	14,518
Other	1,703	(1,217)	128	3,967	7,288	3,200	11,640	13,278	12,286	14,406	6,850
Cash Flow From Operations	30,192	23,905	32,382	40,758	34,434	30,901	33,252	28,116	28,463	29,261	28,782
Changes in Working Capital/Other	(1,972)	1,015	(3,887)	(7,060)	(6,546)	(4,612)	(6,620)	(2,203)	(2,349)	(2,149)	(2,429)
Net Cash From Operating Activities	28,220	24,920	28,495	33,698	27,888	26,289	26,632	25,913	26,114	27,112	26,353
Total Capital Expenditures	(29,874)	(35,134)	(45,078)	(37,387)	(38,088)	(45,110)	(34,808)	(21,653)	(14,085)	(13,639)	(12,021)
Acquisitions, net	-	-	-	-	-	-			2,080	3,016	5,747
Other	408	14	(17,942)	2,768	(291)	9,485	(1,667)	8,860	702	(409)	1,512
Net Cash From Investing Activities	(29,466)	(35,120)	(63,020)	(34,619)	(38,379)	(35,625)	(36,475)	(12,793)	(11,303)	(11,032)	(4,762)
Net Change in Debt	5,295	26,000	10,751	15,201	13,858	21,087	21,019	2,611	(11,763)	(8,931)	(22,564)
Net Change in Common Stock	-	-	-	-	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(4,747)	(7,712)	(5,299)	(6,422)	(3,272)	(2,656)	(3,918)	-	-	-	(648)
Other	2,230	(1,353)	29,956	(4,547)	(4,517)	(5,136)	(6,093)	(6,205)	(7,351)	(5,707)	(6,381)
Net Cash From Financing Activities	2,778	16,935	35,408	4,232	6,069	13,295	11,008	(3,594)	(19,114)	(14,638)	(29,593)
Effect of Exchange Rate on Cash	(2,020)	2,935	603	(1,909)	(1,115)	(1,611)	(378)	(1,123)	450	(128)	(618)
Net Increase/(Decrease) in Cash	(488)	9,670	1,486	1,402	(5,537)	2,348	787	8,403	(3,853)	1,314	(8,620)
Cash and Equivalents, Beginning of Year	6,987	6,499	16,169	17,655	19,057	13,520	15,868	16,655	25,058	21,205	22,519
Cash and Equivalents, End of Year	6,499	16,169	17,655	19,057	13,520	15,868	16,655	25,058	21,205	22,519	13,899

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	26,758	42,644	63,863	64,592	57,794	52,655	50,827	50,827	44,769	47,131	37,062
Net Property, Plant and Equipment	84,719	136,167	218,567	182,465	204,901	227,901	218,730	161,297	175,470	176,650	157,383
Other Assets	14,218	21,459	26,253	72,353	68,950	40,867	29,130	18,397	26,744	27,585	27,623
Total Assets	125,695	200,270	308,683	319,410	331,645	321,423	298,687	230,521	246,983	251,366	222,068
Total Current Liabilities	24,756	30,965	33,552	36,364	34,070	35,226	31,118	28,573	24,903	24,948	25,051
Long-term Debt	16,031	48,149	60,471	72,718	88,484	106,235	120,274	111,521	108,371	102,045	80,508
Deferred Income Taxes	7,080	9,844	12,704	17,736	19,213	9,906	3,031	232	263	1,196	654
Other Liabilities and Deferred Credits	15,260	15,892	18,559	15,482	20,839	20,933	27,286	24,140	35,896	41,675	42,680
Total Liabilities	63,127	104,850	125,286	142,300	162,606	172,300	181,709	164,466	169,433	169,864	148,893
Minority Interests	659	1,362	1,903	1,272	1,152	596	706	819	771	1,700	1,631
Common Shares	21,088	21,088	63,906	107,355	107,362	107,371	107,101	107,101	107,101	107,101	107,101
Contributed Surplus (Paid-in Capital)	221	1,003	(86)	316	349	395	148	321	628	1,067	1,067
Preferred Stock	15,106	15,106	45,840	-	-	-	-	-	-	-	-
Retained Earnings	41,486	51,753	60,905	60,224	67,320	75,689	66,423	57,977	53,143	53,056	58,161
Other / Comprehensive Income (Loss)	(15,992)	5,108	10,929	7,943	(7,144)	(34,928)	(57,400)	(100,163)	(84,093)	(81,422)	(94,785)
Total Shareholders' Equity	61,909	94,058	181,494	175,838	167,887	148,527	116,272	65,236	76,779	79,802	71,544
Total Liabilities and Shareholders' Equity	125,695	200,270	308,683	319,410	331,645	321,423	298,687	230,521	246,983	251,366	222,068
Return on Capital Employed (ROCE)	**14.0%**	**8.2%**	**6.0%**	**5.3%**	**3.4%**	**3.7%**	**-2.6%**	**-0.5%**	**3.0%**	**0.6%**	**7.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	58,844	40,775	58,170	79,513	80,269	73,652	70,687	36,260	34,087	42,627	52,382	129,096	236,043
Production Costs	18,920	16,083	21,529	28,260	28,826	28,325	29,201	17,977	14,442	18,179	19,970	52,591	99,769
Exploration	1,776	1,706	1,901	2,624	3,974	2,966	3,347	1,941	1,765	801	524	3,090	8,378
DD&A	3,963	5,184	6,559	7,204	7,452	9,008	8,759	8,137	10,647	9,943	8,998	29,588	46,484
G&A/Other	289	1,301	827	1,751	1,932	-22	1,772	3,179	1,784	3,001	3,153	7,938	12,889
Pre-tax Results Of Operations	33,896	16,501	27,354	39,674	38,085	33,375	27,608	5,026	5,449	10,703	19,737	35,889	68,523
Income Taxes	11,420	5,505	9,116	13,616	13,188	10,989	8,849	1,686	1,869	3,640	6,910	12,419	22,954
Results Of Operations	22,476	10,996	18,238	26,058	24,897	22,386	18,759	3,340	3,580	7,063	12,827	23,470	45,569

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	58,844	40,775	58,170	79,513	80,269	73,652	70,687	36,260	34,087	42,627	52,382	129,096	236,043
Production Costs	18,920	16,083	21,529	28,260	28,826	28,325	29,201	17,977	14,442	18,179	19,970	52,591	99,769
Exploration	1,776	1,706	1,901	2,624	3,974	2,966	3,347	1,941	1,765	801	524	3,090	8,378
DD&A	3,963	5,184	6,559	7,204	7,452	9,008	8,759	8,137	10,647	9,943	8,998	29,588	46,484
G&A/Other	289	1,301	827	1,751	1,932	-22	1,772	3,179	1,784	3,001	3,153	7,938	12,889
Pre-tax Results Of Operations	33,896	16,501	27,354	39,674	38,085	33,375	27,608	5,026	5,449	10,703	19,737	35,889	68,523
Income Taxes	11,420	5,505	9,116	13,616	13,188	10,989	8,849	1,686	1,869	3,640	6,910	12,419	22,954
Results Of Operations	22,476	10,996	18,238	26,058	24,897	22,386	18,759	3,340	3,580	7,063	12,827	23,470	45,569

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Petrobras (PBR - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	71.62	46.90	66.97	90.80	90.67	85.43	78.75	38.90	36.83	46.35	60.74	47.68	52.02
Production Costs	23.03	18.50	24.78	32.27	32.56	32.85	32.53	19.29	15.61	19.77	23.15	19.42	21.99
Exploration	2.16	1.96	2.19	3.00	4.49	3.44	3.73	2.08	1.91	0.87	0.61	1.14	1.85
DD&A	4.82	5.96	7.55	8.23	8.42	10.45	9.76	8.73	11.51	10.81	10.43	10.93	10.25
G&A/Other	0.35	1.50	0.95	2.00	2.18	-0.03	1.97	3.41	1.93	3.26	3.66	2.93	2.84
Pre-tax Results Of Operations	41.26	18.98	31.49	45.30	43.02	38.71	30.76	5.39	5.89	11.64	22.88	13.26	15.10
Income Taxes	13.90	6.33	10.49	15.55	14.90	12.75	9.86	1.81	2.02	3.96	8.01	4.59	5.06
Results Of Operations	27.36	12.65	21.00	29.76	28.12	25.96	20.90	3.58	3.87	7.68	14.87	8.67	10.04

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	71.62	46.90	66.97	90.80	90.67	85.43	78.75	38.90	36.83	46.35	60.74	47.68	52.02
Production Costs	23.03	18.50	24.78	32.27	32.56	32.85	32.53	19.29	15.61	19.77	23.15	19.42	21.99
Exploration	2.16	1.96	2.19	3.00	4.49	3.44	3.73	2.08	1.91	0.87	0.61	1.14	1.85
DD&A	4.82	5.96	7.55	8.23	8.42	10.45	9.76	8.73	11.51	10.81	10.43	10.93	10.25
G&A/Other	0.35	1.50	0.95	2.00	2.18	-0.03	1.97	3.41	1.93	3.26	3.66	2.93	2.84
Pre-tax Results Of Operations	41.26	18.98	31.49	45.30	43.02	38.71	30.76	5.39	5.89	11.64	22.88	13.26	15.10
Income Taxes	13.90	6.33	10.49	15.55	14.90	12.75	9.86	1.81	2.02	3.96	8.01	4.59	5.06
Results Of Operations	27.36	12.65	21.00	29.76	28.12	25.96	20.90	3.58	3.87	7.68	14.87	8.67	10.04

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Brazil													
Net Revenue	74.92	48.07	68.07	92.10	91.65	85.27	78.22	38.43	36.61	46.24	61.23	47.78	51.78
Production Costs	24.13	19.24	25.74	33.25	33.23	33.08	32.66	19.35	15.76	20.06	23.61	19.74	22.16
Exploration	1.74	1.53	1.60	2.71	4.43	3.48	3.44	1.80	1.81	0.77	0.62	1.07	1.68
DD&A	4.75	5.55	7.22	7.90	8.01	9.77	9.15	8.41	11.36	10.61	10.43	10.81	10.00
G&A/Other	0.16	1.65	1.08	1.93	2.21	1.68	3.37	3.33	1.69	2.88	2.62	2.39	2.77
Pre-tax Results Of Operations	44.15	20.09	32.43	46.31	43.76	37.25	29.61	5.54	5.98	11.91	23.96	13.76	15.16
Income Taxes	14.93	6.79	11.03	15.74	14.87	12.66	9.20	1.89	2.04	4.05	8.14	4.68	4.99
Results Of Operations	29.22	13.30	21.40	30.56	28.89	24.59	20.40	3.66	3.95	7.86	15.82	9.08	10.17

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	38.64	36.48	54.63	76.02	79.36	87.49	86.29	46.72	41.76	49.99	45.00	45.06	57.25
Production Costs	12.05	11.89	14.11	21.20	24.74	29.90	30.70	18.25	12.32	10.30	8.67	10.72	18.33
Exploration	6.33	5.82	8.77	6.23	5.16	2.93	7.91	6.87	3.97	4.16	0.30	3.00	5.39
DD&A	5.61	9.64	11.27	11.92	13.20	19.20	18.45	14.04	14.60	17.24	10.68	14.28	15.41
G&A/Other	2.30	0.09	-0.51	2.73	1.87	-21.98	-17.95	4.73	7.03	15.54	36.55	17.72	4.24
Pre-tax Results Of Operations	12.35	9.04	20.97	33.94	34.39	57.44	47.19	2.83	3.84	2.75	-11.21	-0.66	13.88
Income Taxes	3.57	2.26	4.54	13.33	15.20	13.79	19.23	0.51	1.68	0.93	3.81	2.05	6.56
Results Of Operations	8.78	6.78	16.43	20.61	19.19	43.65	27.96	2.32	2.17	1.81	-15.02	-2.72	7.31

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	2,243.6	2,125.8	2,009.3	2,168.8	2,364.7	2,412.6	2,503.6	2,537.5	2,449.6	2,504.9	2,269.3	2,407.9	2,453.0
Liquids Production (b/d)	1,876,986	2,027,397	2,044,932	2,037,808	2,031,233	1,960,000	2,041,918	2,130,959	2,127,123	2,101,918	1,984,658	2,071,233	2,077,315
Total Production (boe/d)	2,250,913	2,381,689	2,379,817	2,399,269	2,425,342	2,362,100	2,459,178	2,553,881	2,535,388	2,519,406	2,362,877	2,472,557	2,486,146
% Gas Production	17%	15%	14%	15%	16%	17%	17%	17%	16%	17%	16%	16%	16%
% Oil Production	83%	85%	86%	85%	84%	83%	83%	83%	84%	83%	84%	84%	84%
Proven Reserves:													
Gas Reserves (bcf)	12,139	11,051	11,953	12,411	11,589	12,544	12,139	10,450	8,617	7,904	8,069	8,196.4	9,435.5
Oil Reserves (mmbbls)	9,106	10,308	10,766	10,813	10,962	11,041	11,118	8,775	8,236	8,435	8,262	8,310.9	8,965.0
Total Proven Reserves (mmboe)	11,128.7	12,150.0	12,757.8	12,881.3	12,893.3	13,131.7	13,140.6	10,516.4	9,672.2	9,752.1	9,606.5	9,676.9	10,537.6
% Gas Reserves	18%	15%	16%	16%	15%	16%	15%	17%	15%	14%	14%	14%	15%
% Oil Reserves	82%	85%	84%	84%	85%	84%	85%	83%	85%	86%	86%	86%	85%
Proven Reserve Life Index	13.5	14.0	14.7	14.7	14.6	15.2	14.6	11.3	10.5	10.6	11.1	10.7	11.6
Proven Reserve Additions:													
Gas Additions (bcf)	478.5	-388.2	1,635.6	1,261.3	41.1	1,834.8	495.5	-762.8	-938.7	201.4	994.2	256.9	(10.4)
Oil Additions (mmbbls)	237.8	1,893.6	1,203.0	791.5	890.4	794.8	821.7	-1,564.9	238.0	965.9	551.3	1,755.2	1,012.0
Total Additions (mmboe)	317.5	1,828.9	1,475.6	1,001.7	897.3	1,100.6	904.3	-1,692.0	81.6	999.5	717.0	1,798.0	1,010.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	102.9	177.2	1,042.3	221.0	400.4	1,202.9	318.6	515.5	103.2	116.5	378.2	597.9	1,432.0
Acquisitions	32.8	117.8	0.0	0.0	0.0	0.1	30.8	0.0	16.3	0.0	9.1	25.3	56.1
Dispositions	0.0	-110.3	-1.1	0.0	0.0	-53.5	-351.8	-91.5	-648.7	0.0	-195.2	(843.9)	(1,287.2)
Revisions of Estimates	192.5	1,651.7	439.5	780.7	496.8	15.8	718.1	-2,185.5	131.0	883.0	697.5	1,711.4	244.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	32.4%	9.7%	70.6%	22.1%	44.6%	109.3%	35.2%	-30.5%	126.5%	11.7%	52.7%	33.3%	141.7%
Acquisitions	10.3%	6.4%	0.0%	0.0%	0.0%	0.0%	3.4%	0.0%	19.9%	0.0%	1.3%	1.4%	5.5%
Dispositions	0.0%	-6.0%	-0.1%	0.0%	0.0%	-4.9%	-38.9%	5.4%	-795.5%	0.0%	-27.2%	-46.9%	-127.4%
Revisions of Estimates	60.6%	90.3%	29.8%	77.9%	55.4%	1.4%	79.4%	129.2%	160.6%	88.3%	97.3%	95.2%	24.2%
Additions as % of Production:													
Gas	58.4%	-50.0%	223.0%	159.3%	4.8%	208.4%	54.2%	-82.4%	-105.0%	22.0%	120.0%	9.7%	-0.2%
Oil	34.7%	255.9%	161.2%	106.4%	120.1%	111.1%	110.3%	-201.2%	30.7%	125.9%	76.1%	77.4%	26.7%
Total	38.7%	210.4%	169.9%	114.4%	101.4%	127.7%	100.7%	-181.5%	8.8%	108.7%	83.1%	66.4%	22.3%
Additions as % of Reserves:													
Gas	3.9%	-3.5%	13.7%	10.2%	0.4%	14.6%	4.1%	-7.3%	-10.9%	2.5%	12.3%	3.1%	-0.1%
Oil	2.6%	18.4%	11.2%	7.3%	8.1%	7.2%	7.4%	-17.8%	2.9%	11.5%	6.7%	21.1%	11.3%
Total	2.9%	15.1%	11.6%	7.8%	7.0%	8.4%	6.9%	-16.1%	0.8%	10.2%	7.5%	18.6%	9.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$3,933	$4,132	$5,345	$6,462	$6,640	$10,187	$5,727	$3,418	$1,515	$1,264	$787	$3,566.0	$12,711.0
Development	$13,291	$14,804	$16,010	$14,963	$17,878	$17,837	$19,760	$16,815	$13,142	$12,100	$9,946	$35,188.0	$71,763.0
Acquisitions	$595	$105	$43,857	$612	$617	$990	$143	$0	$98	$903	$832	$1,833.0	$1,976.0
Dispositions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	na	na
Total Expenditures	$17,819.0	$19,041.0	$65,212.0	$22,037.0	$25,135.0	$29,014.0	$25,630.0	$20,233.0	$14,755.0	$14,267.0	$11,565.0	$40,587.0	$86,450.0
Expenditures as % of Total:													
Exploration	22.1%	21.7%	8.2%	29.3%	26.4%	35.1%	22.3%	16.9%	10.3%	8.9%	6.8%	8.8%	14.7%
Development	74.6%	77.7%	24.6%	67.9%	71.1%	61.5%	77.1%	83.1%	89.1%	84.8%	86.0%	86.7%	83.0%
Acquisitions	3.3%	0.6%	67.3%	2.8%	2.5%	3.4%	0.6%	0.0%	0.7%	6.3%	7.2%	4.5%	2.3%
Cashflow (US$million)	$28,215	$17,886	$26,698	$35,886	$36,323	$34,360	$30,865	$13,418	$15,992	$17,807	$22,349	$56,148.2	$100,431.4
Cashflow (US$/boe)	$34.34	$20.58	$30.74	$40.98	$41.03	$39.85	$34.39	$14.39	$17.28	$19.36	$25.91	$20.74	$22.14
Recycle Ratio	0.6x	2.1x	0.7x	1.9x	1.5x	1.7x	1.4x	-1.2x	0.3x	1.4x	2.4x	1.2x	0.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$58.30	$10.35	$14.41	$21.39	$27.33	$23.00	$24.59	-$12.12	$62.61	$13.37	$9.98	$16.78	$50.40
Acquisition Costs	$18.13	$0.89	na	na	na	$14,850.00	$4.65	na	$6.03	na	$91.93	nm	$35.25
All Sources (incl. revisions)	$54.28	$9.78	$44.01	$22.00	$28.01	$23.81	$24.01	-$12.12	$58.93	$14.27	$10.66	$17.39	$49.91
All Sources - Adjusted (incl. revisions)*	$54.28	$9.78	$14.40	$22.00	$28.01	$23.81	$24.01	-$12.12	$58.93	$14.27	$10.66	$17.39	$49.91
Exploration & Development (excl. revisions)	$167.39	$106.84	$20.49	$96.93	$61.23	$23.30	$79.99	$39.25	$142.07	$114.71	$28.38	$64.82	$58.99
Acquisition Costs	$18.13	$0.89	na	na	na	$14,850.00	$4.65	na	$6.03	na	$91.93	nm	$35.25
All Sources (excl. revisions)	$131.30	$64.54	$62.56	$99.70	$62.77	$24.12	$73.36	$39.25	$123.56	$122.46	$29.87	$65.13	$58.10
Geographically Segmented Costs													
Brazil	$75.24	$8.28	$45.58	$21.70	$26.60	$23.47	$23.41	-$11.14	$67.98	$14.28	$10.70	$17.52	$52.80
Brazil - Adjusted*	$75.24	$8.28	$13.64	$21.70	$26.60	$23.47	$23.41	-$11.14	$67.98	$14.28	$10.70	$17.52	$52.80
Other International	$20.50	-$15.26	$24.14	$25.48	$43.66	$27.74	$34.79	$78.77	$18.82	$14.18	$9.21	$14.75	$26.72

Note: Reserve estimates reported after royalties; Adjusted F&D cost excludes $43 billion payment in 2010 for assignment of pre-salt exploration rights offshore Brazil
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	23.03	18.50	24.78	32.27	32.56	32.85	32.53	19.29	15.61	19.77	23.15	19.42	21.99
Exploration Expense	2.16	1.96	2.19	3.00	4.49	3.44	3.73	2.08	1.91	0.87	0.61	1.14	1.85
G&A/Other	0.35	1.50	0.95	2.00	2.18	(0.03)	1.97	3.41	1.93	3.26	3.66	2.93	2.84
F&D Costs	54.28	9.78	14.40	22.00	28.01	23.81	24.01	39.25	58.93	14.27	10.66	17.39	29.43
Return on Capital	49.10	8.79	13.62	20.90	26.29	23.80	22.68	28.72	41.27	9.53	7.43	11.74	21.64
Income Taxes	24.95	4.40	6.81	10.92	13.92	11.68	10.70	14.50	21.54	4.91	4.00	6.21	10.90
Breakeven Oil Price	153.87	44.93	62.76	91.09	107.46	95.56	95.63	107.25	141.18	52.62	49.51	58.84	88.64
Quality Differential	19.19	10.13	5.78	7.08	5.63	8.61	8.11	8.40	3.49	2.36	2.28	2.71	4.93
Required WTI Price	173.07	55.05	68.54	98.17	113.08	104.17	103.74	115.65	144.67	54.98	51.78	61.55	93.57

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	23.03	18.50	24.78	32.27	32.56	32.85	32.53	19.29	15.61	19.77	23.15	19.42	21.99
Exploration Expense	2.16	1.96	2.19	3.00	4.49	3.44	3.73	2.08	1.91	0.87	0.61	1.14	1.85
G&A/Other	0.35	1.50	0.95	2.00	2.18	(0.03)	1.97	3.41	1.93	3.26	3.66	2.93	2.84
F&D Costs	54.28	9.78	44.01	22.00	28.01	23.81	24.01	39.25	58.93	14.27	10.66	17.39	29.43
Return on Capital	49.10	8.79	41.75	20.90	26.29	23.80	22.68	28.72	41.27	9.53	7.43	11.74	21.64
Income Taxes	24.95	4.40	20.87	10.92	13.92	11.68	10.70	14.50	21.54	4.91	4.00	6.21	10.90
Breakeven Oil Price	153.87	44.93	134.55	91.09	107.46	95.56	95.63	107.25	141.18	52.62	49.51	58.84	88.64
Quality Differential	19.19	10.13	5.78	7.08	5.63	8.61	8.11	8.40	3.49	2.36	2.28	2.71	4.93
Required WTI Price	173.07	55.05	140.33	98.17	113.08	104.17	103.74	115.65	144.67	54.98	51.78	61.55	93.57

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Brazil													
Operating Costs	24.13	19.24	25.74	33.25	33.23	33.08	32.66	19.35	15.76	20.06	23.61	19.74	22.16
Exploration Expense	1.74	1.53	1.60	2.71	4.43	3.48	3.44	1.80	1.81	0.77	0.62	1.07	1.68
G&A/Other	0.16	1.65	1.08	1.93	2.21	1.68	3.37	3.33	1.69	2.88	2.62	2.39	2.77
F&D Costs	75.24	8.28	13.64	21.70	26.60	23.47	23.41	39.44	67.98	14.28	10.70	17.52	31.16
Return on Capital	70.43	7.92	13.43	21.71	25.92	23.92	23.18	28.60	50.35	9.62	7.58	12.03	23.44
Income Taxes	36.00	4.04	6.92	11.18	13.34	12.32	10.45	14.74	25.96	4.96	3.91	6.20	11.49
Breakeven Oil Price	207.70	42.67	62.40	92.48	105.73	97.95	96.51	107.25	163.55	52.57	49.04	58.97	92.70
Quality Differential	17.29	9.98	5.34	6.75	5.58	9.55	9.35	9.25	3.96	2.53	1.78	2.76	5.37
Required WTI Price	224.99	52.65	67.74	99.23	111.31	107.49	105.86	116.50	167.51	55.10	50.82	61.72	98.08

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other													
Operating Costs	12.05	11.89	14.11	21.20	24.74	29.90	30.70	18.25	12.32	10.30	8.67	10.72	18.33
Exploration Expense	6.33	5.82	8.77	6.23	5.16	2.93	7.91	6.87	3.97	4.16	0.30	3.00	5.39
G&A/Other	2.30	0.09	(0.51)	2.73	1.87	(21.98)	(17.95)	4.73	7.03	15.54	36.55	17.72	4.24
F&D Costs	20.50	11.04	24.14	25.48	43.66	27.74	34.79	78.77	18.82	14.18	9.21	14.75	31.16
Return on Capital	14.71	4.68	13.14	13.99	24.52	16.53	15.73	37.03	5.95	6.89	2.97	5.51	12.64
Income Taxes	5.99	1.56	3.63	9.04	19.43	5.23	10.82	8.19	4.60	3.55	1.53	(4.17)	11.34
Breakeven Oil Price	61.88	35.07	63.30	78.68	119.37	60.35	82.00	153.84	52.68	54.62	59.24	47.54	83.10
Quality Differential	38.23	11.40	10.74	10.87	6.22	(3.47)	(9.60)	(5.86)	(6.73)	(3.24)	18.07	2.70	(1.47)
Required WTI Price	100.10	46.48	74.03	89.54	125.59	56.88	72.41	147.98	45.96	51.38	77.30	50.24	81.63

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Petrobras (PBR - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	20.59	26.56	34.96	35.77	35.98	35.48	19.90	16.24	16.24	20.71	24.61	20.39	23.18
Exploration Expense	2.18	2.35	3.25	4.93	3.77	4.07	2.15	1.98	1.98	0.91	0.65	1.20	1.95
G&A/Other	1.67	1.02	2.17	2.40	(0.03)	2.15	3.52	2.01	2.01	3.42	3.89	3.08	2.99
F&D Costs (1-Year)	9.63	15.79	24.64	28.13	27.43	25.68	40.49	56.31	56.31	14.41	11.43	17.93	29.66
Return on Capital	8.63	14.72	23.26	26.62	27.68	24.46	29.58	39.74	39.74	9.71	8.11	12.19	21.95
Income Taxes	4.32	7.36	12.15	14.10	13.59	11.54	14.93	20.74	20.74	5.00	4.37	6.45	11.05
Breakeven Oil Price	**47.01**	**67.80**	**100.43**	**111.95**	**108.42**	**103.38**	**110.57**	**137.01**	**137.01**	**54.16**	**53.06**	**61.24**	**90.78**
Quality Differential	11.27	6.19	7.67	6.18	9.43	8.84	8.67	3.63	3.63	2.47	2.42	2.84	5.21
Required WTI Price	**58.28**	**73.99**	**108.10**	**118.13**	**117.85**	**112.23**	**119.24**	**140.64**	**140.64**	**56.63**	**55.48**	**64.08**	**95.99**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	20.59	26.56	34.96	35.77	35.98	35.48	19.90	16.24	16.24	20.71	24.61	20.39	23.18
Exploration Expense	2.18	2.35	3.25	4.93	3.77	4.07	2.15	1.98	1.98	0.91	0.65	1.20	1.95
G&A/Other	1.67	1.02	2.17	2.40	(0.03)	2.15	3.52	2.01	2.01	3.42	3.89	3.08	2.99
F&D Costs (1-Year)	11.94	37.41	26.48	107.53	31.69	18.41	25.05	17.35	17.35	17.15	10.35	14.50	17.66
Return on Capital	10.69	35.21	24.98	101.78	31.56	17.58	50.31	11.44	11.44	11.55	7.28	9.87	19.63
Income Taxes	5.35	17.60	13.05	53.91	15.49	8.29	25.39	5.97	5.97	5.95	3.92	5.22	9.89
Breakeven Oil Price	**52.42**	**120.14**	**104.88**	**306.33**	**118.47**	**85.98**	**126.31**	**55.00**	**55.00**	**59.70**	**50.70**	**54.26**	**75.30**
Quality Differential	11.27	6.19	7.67	6.18	9.43	8.84	8.67	3.63	3.63	2.47	2.42	2.84	5.21
Required WTI Price	**63.69**	**126.33**	**112.55**	**312.51**	**127.89**	**94.82**	**134.98**	**58.63**	**58.63**	**62.17**	**53.12**	**57.10**	**80.51**

Source: BMO Capital Markets, Company Reports

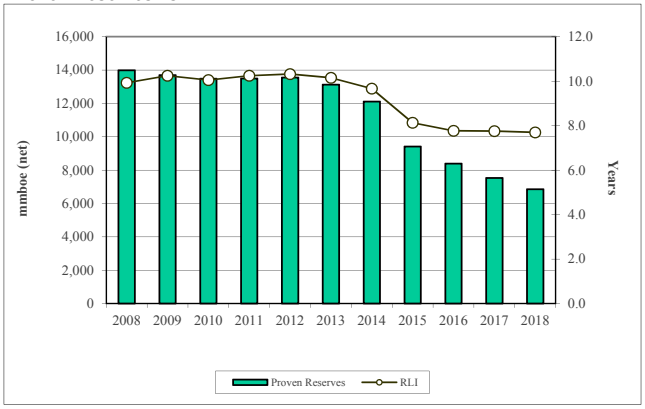
Pemex (PEMEX)

US$, net

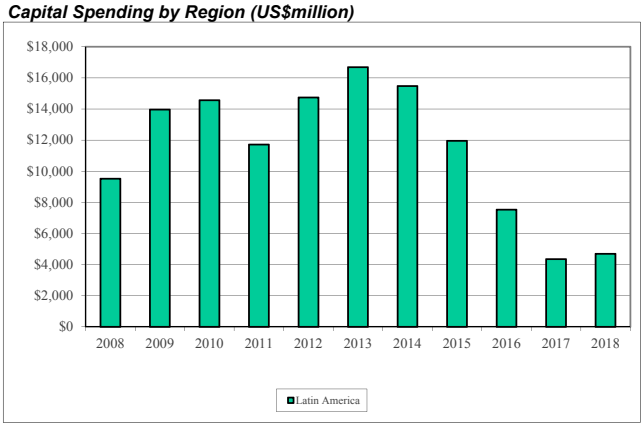
- Pemex reported results from operations of $8.19/boe compared to a loss of $5.89/boe in 2017.
- The company's F&D costs fell to $15.76/boe in 2018 from $27.46/boe last year. On a realized oil:gas price ratio basis F&D costs dropped to $21.93/boe from $40.03/boe, while the costs for PD reserves also followed the improving trend and came in at $21.13/boe, down from $27.76/boe the previous year.
- Pemex's implied required Brent breakeven oil price was $91.47/boe on a realized ratio basis while its PD cost assessment implied a Brent breakeven oil price of $90.28/boe.
- The company reported a loss on capital employed of 21.5% in 2018.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Euros to U.S. Dollars using average annual exchange rates.

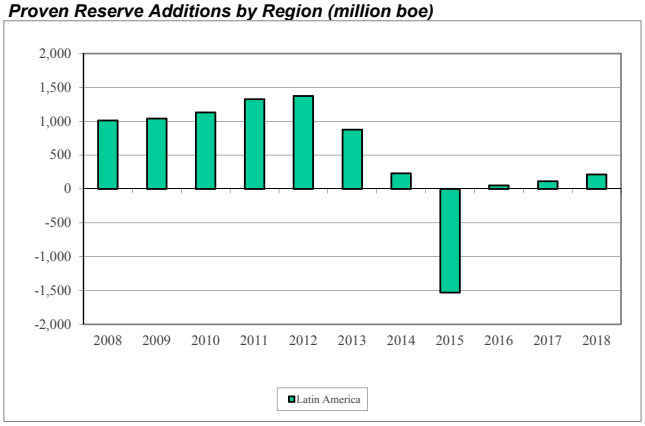
Proven Reserves vs RLI



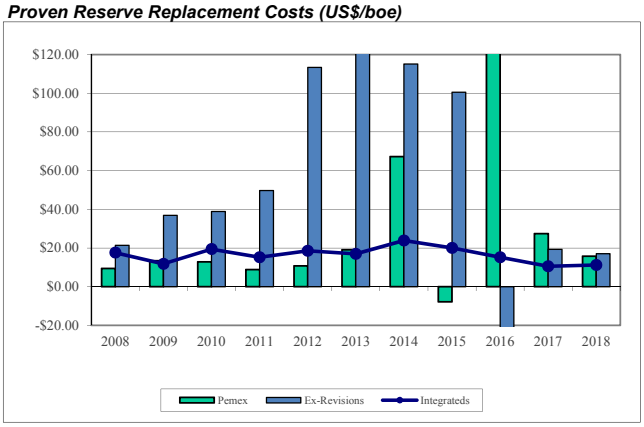
Capital Spending by Region (US$million)



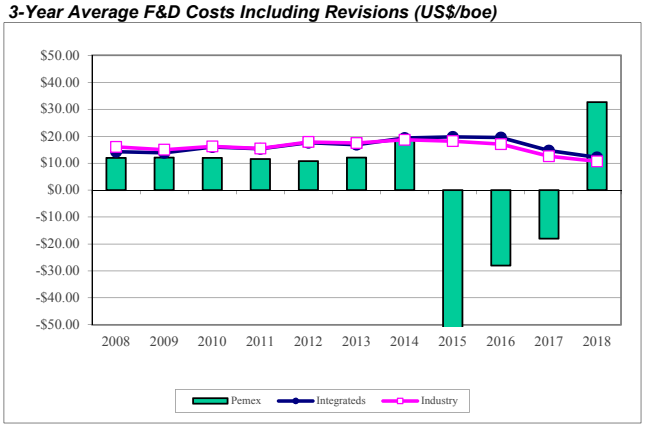
Proven Reserve Additions by Region (million boe)



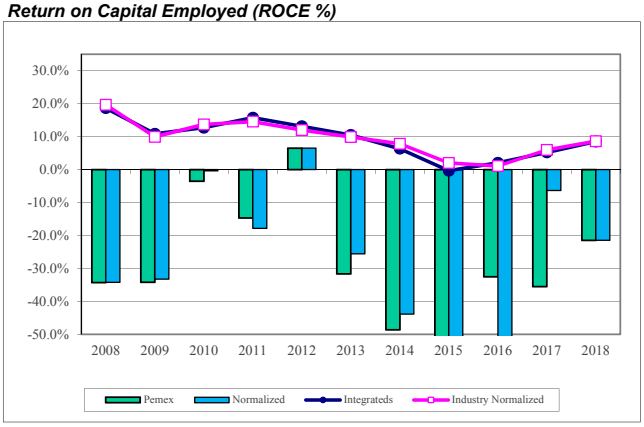
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

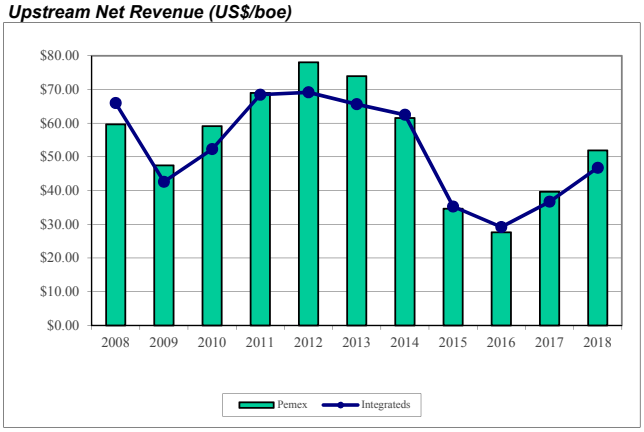
See pages F1 to F4 for analyst coverage.

Pemex (PEMEX)

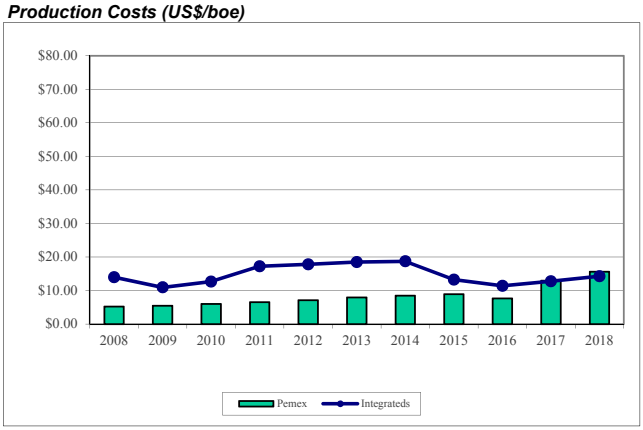
US$/boe, net

Worldwide

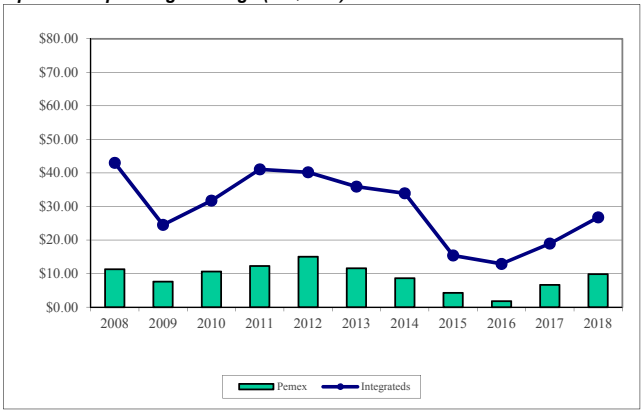
Upstream Net Revenue (US$/boe)



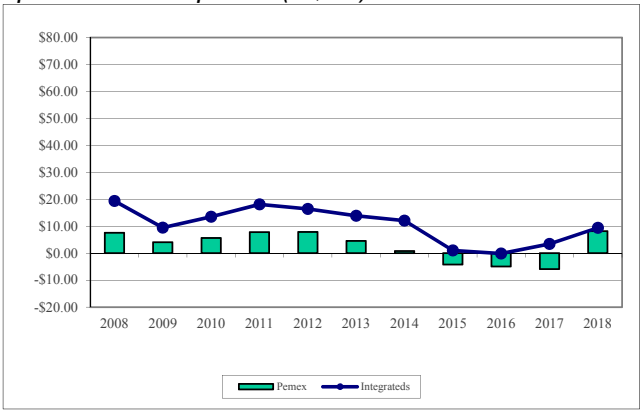
Production Costs (US$/boe)



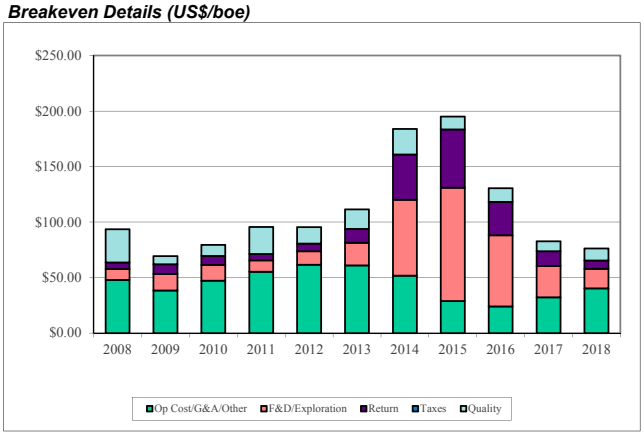
Upstream Operating Earnings (US$/boe)



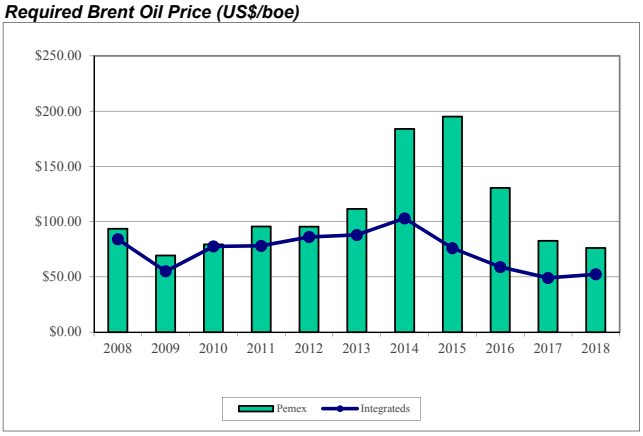
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

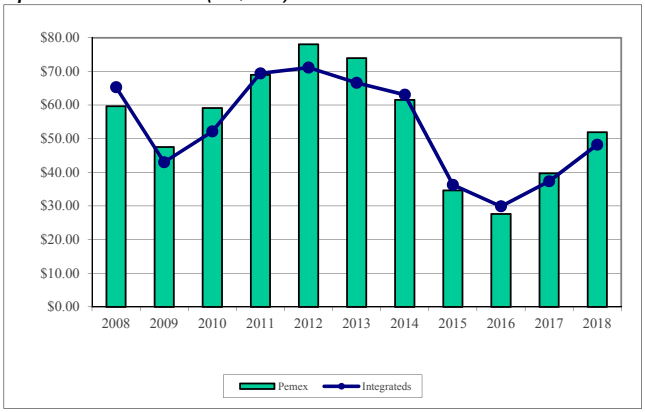
See pages F1 to F4 for analyst coverage.

Pemex (PEMEX)

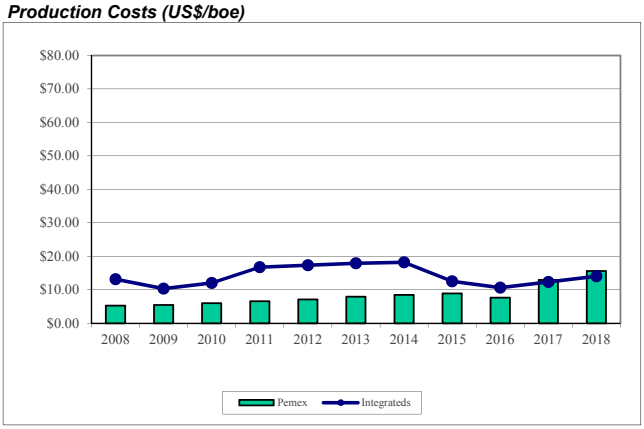
US$/boe, net

Total International

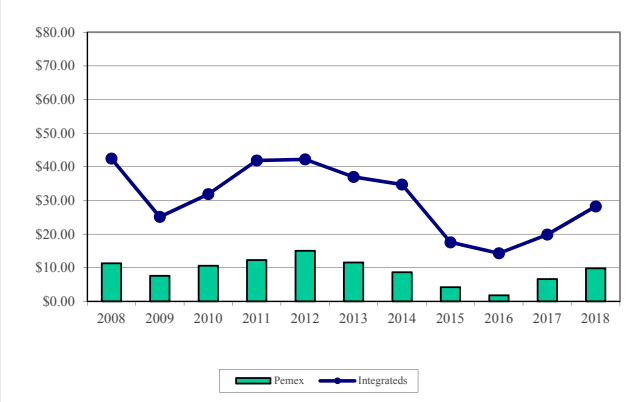
Upstream Net Revenue (US$/boe)



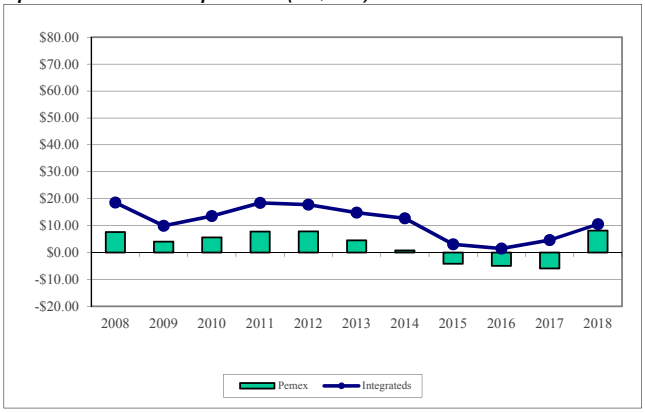
Production Costs (US$/boe)



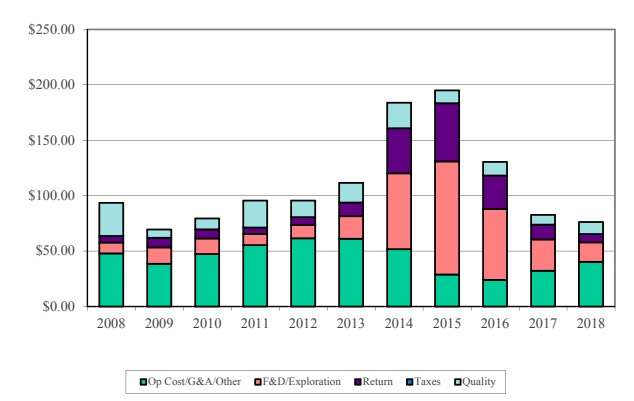
Upstream Operating Earnings (US$/boe)



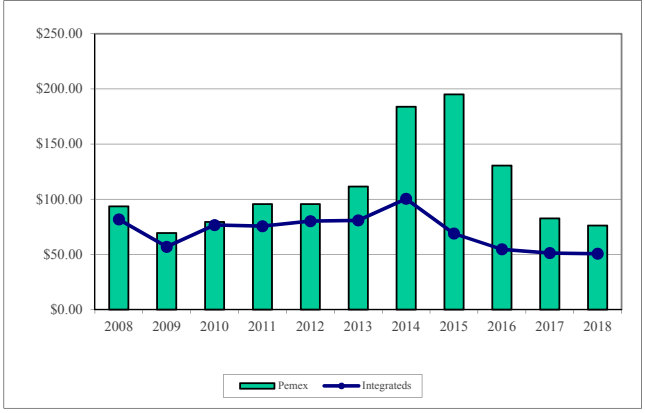
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



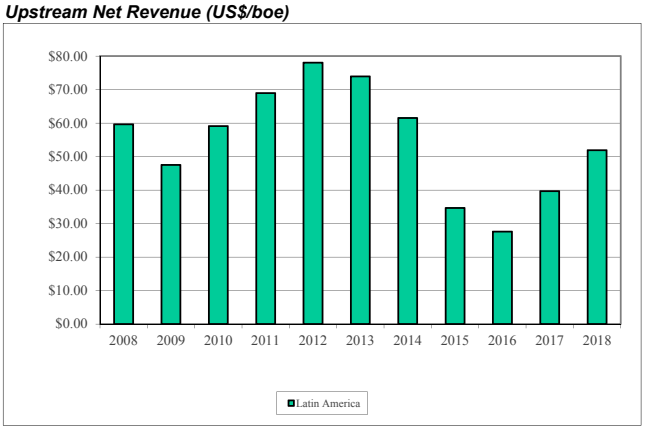
Source: BMO Capital Markets, Company Reports

Pemex (PEMEX)

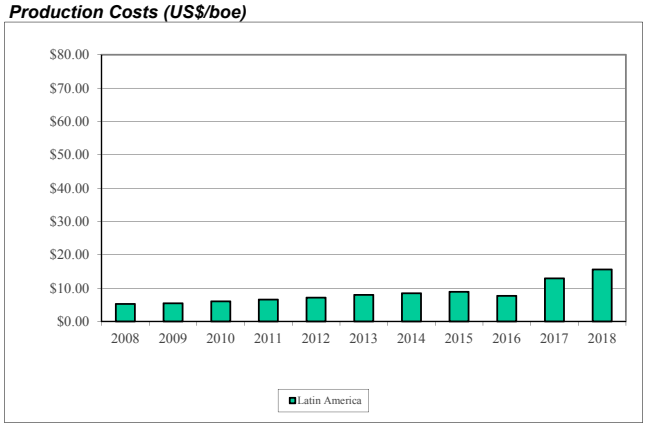
US$/boe, net

International Segments

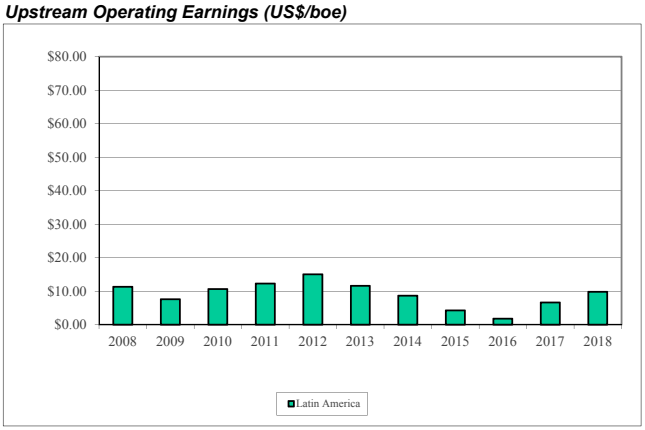
Upstream Net Revenue (US$/boe)



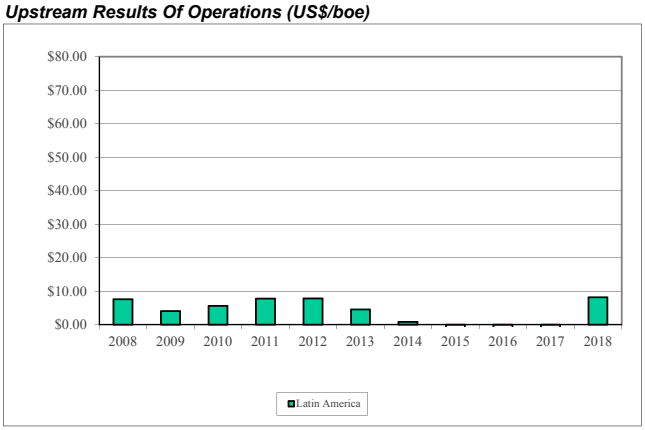
Production Costs (US$/boe)



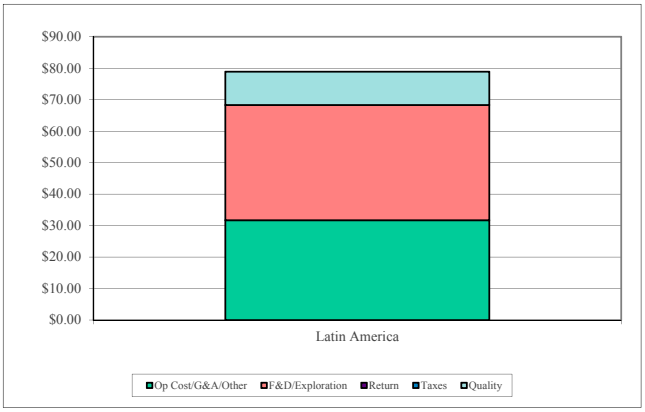
Upstream Operating Earnings (US$/boe)



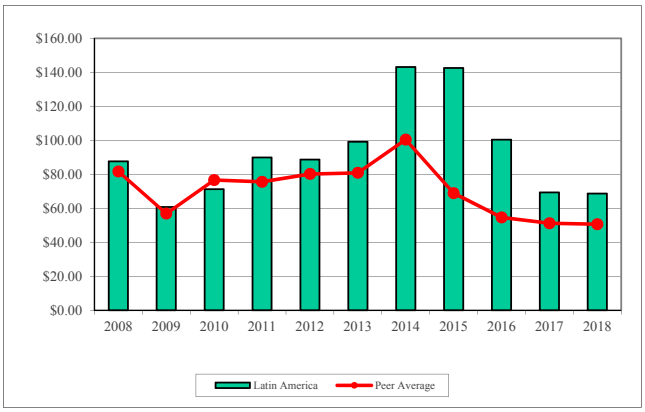
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Pemex (PEMEX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	84,039	63,456	79,270	90,836	102,478	95,648	77,079	40,135	29,829	38,543	46,255
Midstream / Downstream Revenue	97,813	82,981	103,408	110,945	126,039	122,196	107,036	67,786	51,545	70,042	38,714
Other	(83,691)	(62,974)	(78,926)	(90,389)	(101,929)	(94,860)	(76,307)	(39,388)	(29,131)	(37,980)	441
Total Revenue and Other Income	98,162	83,463	103,751	111,393	126,587	122,984	107,809	68,534	52,243	70,604	85,410
Crude Oil and Product Purchases	33,672	27,844	33,585	38,319	41,826	38,864	27,174	30,111	24,499	29,492	37,671
Production and Transportation Expenses	7,412	7,305	8,081	8,650	9,375	10,297	10,608	10,332	8,285	12,582	13,905
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	590	1,933	1,695	1,840	1,985	1,733	1,515	1,816	1,921	758	1,573
General and Administrative	7,668	7,697	8,437	6,889	9,078	10,026	9,751	8,218	6,673	1,106	6,824
Depreciation, Depletion and Amortization	6,636	5,888	7,808	6,987	10,802	11,356	9,721	9,761	7,280	7,920	7,793
Interest, net	2,692	2,297	2,601	2,347	3,823	2,259	3,298	3,068	4,118	5,129	4,530
Other	47,462	37,422	45,048	52,589	49,172	60,878	64,791	49,291	10,667	28,068	22,705
Earnings Before Income Tax	(7,970)	(6,923)	(3,502)	(6,230)	526	(12,428)	(19,050)	(44,062)	(11,200)	(14,450)	(9,591)
Current Income Taxes	295	334	316	381	372	715	663	432	(1,038)	(256)	(424)
Future Income Taxes	14	(8)	23	(71)	(46)	(138)	(1,671)	(3,081)	(912)	-	-
Total Income Taxes	309	326	339	309	327	577	(1,008)	(2,649)	(1,950)	(256)	(424)
Minority Interest	-	-	-	-	18	15	23	8	(24)	-	-
Earnings From Continuing Operations	(8,278)	(7,249)	(3,841)	(6,539)	218	(12,990)	(18,019)	(41,405)	(9,274)	(14,194)	(9,166)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(8,278)	(7,249)	(3,841)	(6,539)	218	(12,990)	(18,019)	(41,405)	(9,274)	(14,194)	(9,166)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(8,278)	(7,249)	(3,841)	(6,539)	218	(12,990)	(18,019)	(41,405)	(9,274)	(14,194)	(9,166)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(8,278)	(7,249)	(3,841)	(6,539)	218	(12,990)	(18,019)	(41,405)	(9,274)	(14,194)	(9,166)
Charges and Credits Not Impacting Cash	6,690	7,080	9,064	6,940	11,800	14,145	10,414	35,806	(9,464)	13,500	7,379
Other	63,003	49,607	54,135	71,430	777	3,744	11,506	16,953	19,472	6,872	5,614
Cash Flow From Operations	61,415	49,438	59,358	71,830	12,795	4,898	3,901	11,354	734	6,178	3,826
Change in Working Capital / Other	(58,928)	(36,179)	(46,400)	(59,156)	3,602	9,657	5,228	(5,407)	(2,741)	(2,974)	3,377
Net Cash From Operating Activities	2,486	13,258	12,958	12,674	16,397	14,556	9,129	5,948	(2,008)	3,204	7,204
Total Capital Expenditures	-	-	-	(296)	(141)	(110)	(108)	(331)	(7,327)	(4,642)	(4,776)
Acquisitions, net	(10,398)	(16,462)	(14,938)	(12,569)	(15,181)	(18,784)	(15,673)	(14,734)	(182)	-	207
Other	41	-	-	(1,443)	-	219	653	255	1,000	564	(567)
Net Cash From Investing Activities	(10,357)	(16,462)	(14,938)	(14,308)	(15,322)	(18,674)	(15,129)	(14,810)	(6,510)	(4,078)	(5,136)
Net Change in Debt	1,058	4,236	3,139	2,686	2,770	3,503	14,672	10,906	11,063	3,273	2,984
Net Change in Common Stock	2,619	36	0	-	-	121	(3,505)	581	3,557	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	(3,134)	(2,386)	(3,581)	(2,840)	(3,210)	(3,646)	(4,295)	(5,504)	(5,857)
Net Cash From Financing Activities	3,677	4,272	5	300	(811)	785	7,957	7,841	10,325	(2,231)	(2,873)
Effect of Exchange Rate on Cash	-	-	(143)	155	63	391	574	521	813	(108)	(4)
Net Increase/(Decrease) in Cash	(4,193)	1,069	(2,118)	(1,178)	327	(2,943)	2,530	(501)	2,621	(3,213)	(810)
Cash and Equivalents, Beginning of Year	12,631	8,747	12,929	9,548	8,837	9,118	5,486	6,857	5,293	8,265	4,971
Cash and Equivalents, End of Year	8,437	9,816	10,811	8,370	9,165	6,175	8,017	6,356	7,914	5,052	4,162

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pemex (PEMEX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	26,908	26,779	25,364	25,551	24,453	20,412	19,658	15,529	17,199	18,372	19,972
Net Property, Plant and Equipment	62,420	74,096	85,893	82,378	127,496	131,654	121,170	78,138	80,708	72,600	71,254
Other Assets	2,030	1,129	1,448	1,670	3,636	4,504	3,782	9,530	14,844	16,777	14,205
Total Assets	91,358	102,004	112,706	109,600	155,585	156,570	144,610	103,197	112,751	107,749	105,431
Total Current Liabilities	12,998	18,605	16,772	18,117	18,125	19,821	22,704	25,770	20,625	19,666	22,750
Long-term Debt	12,998	40,529	46,546	48,053	51,700	57,398	67,766	75,604	87,447	95,047	96,047
Deferred Income Taxes	520	531	584	444	2,163	2,069	293	127	200	215	229
Other Liabilities and Deferred Credits	62,857	47,457	58,012	56,846	104,433	91,448	106,008	82,601	64,149	68,749	60,551
Total Liabilities	89,373	107,122	121,914	123,461	176,421	170,737	196,772	184,102	172,420	183,677	179,577
Minority Interests	-	-	-	-	54	39	23	15	47	49	24
Common Shares	-	-	-	-	-	-	-	-	-	-	-
Contributed Surplus (Paid-in Capital)	20,713	21,510	22,444	19,824	17,551	17,583	12,117	13,851	19,371	20,229	20,336
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	(19,341)	(27,300)	(32,366)	(34,949)	(9,050)	(21,994)	1,522	(73,533)	(71,228)	(88,580)	(89,048)
Other / Comprehensive Income (Loss)	614	672	715	1,265	(29,389)	(9,793)	(65,824)	(21,238)	(7,859)	(7,626)	(5,458)
Total Shareholders' Equity	1,986	(5,118)	(9,208)	(13,861)	(20,889)	(14,205)	(52,185)	(80,919)	(59,717)	(75,976)	(74,170)
Total Liabilities and Shareholders' Equity	91,358	102,004	112,706	109,600	155,585	156,570	144,610	103,197	112,751	107,749	105,431

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

											Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	84,039	63,456	79,270	90,836	102,478	95,648	77,079	40,135	29,829	38,543	46,255	84,798	154,762
Production Costs	7,412	7,305	8,081	8,650	9,375	10,297	10,608	10,332	8,285	12,582	13,905	26,487	45,104
Exploration	590	1,933	1,695	1,840	1,985	1,733	1,515	1,816	1,921	758	1,573	2,330	6,067
DD&A	5,247	4,738	6,688	5,891	9,405	9,113	9,810	9,761	7,280	12,163	1,466	13,629	30,670
Other	60,098	44,045	55,252	64,194	71,398	68,641	54,125	23,075	17,695	18,760	22,018	40,778	81,549
Pre-tax Earnings	10,692	5,435	7,554	10,260	10,315	5,865	1,021	-4,848	-5,353	-5,720	7,293	1,573	-8,628
Income Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Earnings	10,692	5,435	7,554	10,260	10,315	5,865	1,021	-4,848	-5,353	-5,720	7,293	1,573	-8,628

											Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Net Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na

											Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	84,039	63,456	79,270	90,836	102,478	95,648	77,079	40,135	29,829	38,543	46,255	84,798	154,762
Production Costs	7,412	7,305	8,081	8,650	9,375	10,297	10,608	10,332	8,285	12,582	13,905	26,487	45,104
Exploration	590	1,933	1,695	1,840	1,985	1,733	1,515	1,816	1,921	758	1,573	2,330	6,067
DD&A	5,247	4,738	6,688	5,891	9,405	9,113	9,810	9,761	7,280	12,163	1,466	13,629	30,670
Other	60,098	44,045	55,252	64,194	71,398	68,641	54,125	23,075	17,695	18,760	22,018	40,778	81,549
Pre-tax Earnings	10,692	5,435	7,554	10,260	10,315	5,865	1,021	-4,848	-5,353	-5,720	7,293	1,573	-8,628
Income Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Net Earnings	10,692	5,435	7,554	10,260	10,315	5,865	1,021	-4,848	-5,353	-5,720	7,293	1,573	-8,628

Source: BMO Capital Markets, Company Reports

Pemex (PEMEX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$59.65	$47.50	$59.12	$68.98	$78.05	$73.94	$61.52	$34.64	$27.62	$39.67	$51.92	$38.96	$43.31
Production Costs	$5.26	$5.47	$6.03	$6.57	$7.14	$7.96	$8.47	$8.92	$7.67	$12.95	$15.61	$11.82	$10.41
Exploration	$0.42	$1.45	$1.26	$1.40	$1.51	$1.34	$1.21	$1.57	$1.78	$0.78	$1.77	$1.44	$1.42
DD&A	$3.72	$3.55	$4.99	$4.47	$7.16	$7.04	$7.83	$8.43	$6.74	$12.52	$1.65	$7.11	$7.56
Other	$42.66	$32.97	$41.21	$48.75	$54.38	$53.07	$43.20	$19.92	$16.38	$19.31	$24.72	$19.87	$25.34
Pre-tax Earnings	$7.59	$4.07	$5.63	$7.79	$7.86	$4.53	$0.82	-$4.18	-$4.96	-$5.89	$8.19	-$1.28	-$1.42
Income Taxes	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Net Earnings	$7.59	$4.07	$5.63	$7.79	$7.86	$4.53	$0.82	-$4.18	-$4.96	-$5.89	$8.19	-$1.28	-$1.42

	2008	2009	2010	2011	2012	2013	2014	2015	2015	2015	2015	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Net Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2015	2015	2015	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$59.65	$47.50	$59.12	$68.98	$78.05	$73.94	$61.52	$34.64	$27.62	$39.67	$51.92	$38.96	$43.31
Production Costs	$5.26	$5.47	$6.03	$6.57	$7.14	$7.96	$8.47	$8.92	$7.67	$12.95	$15.61	$11.82	$10.41
Exploration	$0.42	$1.45	$1.26	$1.40	$1.51	$1.34	$1.21	$1.57	$1.78	$0.78	$1.77	$1.44	$1.42
DD&A	$3.72	$3.55	$4.99	$4.47	$7.16	$7.04	$7.83	$8.43	$6.74	$12.52	$1.65	$7.11	$7.56
Other	$42.66	$32.97	$41.21	$48.75	$54.38	$53.07	$43.20	$19.92	$16.38	$19.31	$24.72	$19.87	$25.34
Pre-tax Earnings	$7.59	$4.07	$5.63	$7.79	$7.86	$4.53	$0.82	-$4.18	-$4.96	-$5.89	$8.19	-$1.28	-$1.42
Income Taxes	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Net Earnings	$7.59	$4.07	$5.63	$7.79	$7.86	$4.53	$0.82	-$4.18	-$4.96	-$5.89	$8.19	-$1.28	-$1.42

Regional Breakdown:

	2008	2009	2010	2011	2012	2013	2014	2015	2015	2015	2015	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Net Revenue	$59.65	$47.50	$59.12	$68.98	$78.05	$73.94	$61.52	$34.64	$27.62	$39.67	$51.92	$38.96	$43.31
Production Costs	$5.26	$5.47	$6.03	$6.57	$7.14	$7.96	$8.47	$8.92	$7.67	$12.95	$15.61	$11.82	$10.41
Exploration	$0.42	$1.45	$1.26	$1.40	$1.51	$1.34	$1.21	$1.57	$1.78	$0.78	$1.77	$1.44	$1.42
DD&A	$3.72	$3.55	$4.99	$4.47	$7.16	$7.04	$7.83	$8.43	$6.74	$12.52	$1.65	$7.11	$7.56
Other	$42.66	$32.97	$41.21	$48.75	$54.38	$53.07	$43.20	$19.92	$16.38	$19.31	$24.72	$19.87	$25.34
Pre-tax Earnings	$7.59	$4.07	$5.63	$7.79	$7.86	$4.53	$0.82	-$4.18	-$4.96	-$5.89	$8.19	-$1.28	-$1.42
Income Taxes	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Net Earnings	$7.59	$4.07	$5.63	$7.79	$7.86	$4.53	$0.82	-$4.18	-$4.96	-$5.89	$8.19	-$1.28	-$1.42

Source: BMO Capital Markets, Company Reports

Pemex (PEMEX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	4,501.4	4,504.1	4,632.9	4,386.3	4,274.0	4,216.4	4,139.7	3,674.0	3,106.8	2,737.0	2,430.1	2,758.0	3,217.5
Liquids Production (b/d)	3,109,589	2,909,589	2,901,370	2,876,712	2,884,932	2,841,096	2,742,466	2,561,644	2,441,096	2,205,479	2,035,616	2,227,397	2,397,260
Total Production (boe/d)	3,859,817	3,660,274	3,673,516	3,607,763	3,597,260	3,543,836	3,432,420	3,173,973	2,958,904	2,661,644	2,440,639	2,687,062	2,933,516
% Gas Production	19%	21%	21%	20%	20%	20%	20%	19%	18%	17%	17%	17%	18%
% Oil Production	81%	79%	79%	80%	80%	80%	80%	81%	83%	83%	83%	83%	82%
Proven Reserves:													
Gas Reserves (bcf)	12,702.0	11,966.0	12,494.0	12,734.0	12,713.0	12,273.0	10,859.0	8,610.0	6,985.0	6,594.0	6,371.0	6,650.0	7,883.8
Oil Reserves (mmbbls)	11,867.0	11,693.0	11,395.0	11,363.0	11,426.0	11,081.0	10,294.0	7,979.0	7,222.0	6,431.0	5,791.0	6,481.3	7,543.4
Total Proven Reserves (mmboe)	13,984.0	13,687.3	13,477.3	13,485.3	13,544.8	13,126.5	12,103.8	9,414.0	8,386.2	7,530.0	6,852.8	7,589.7	8,857.4
% Gas Reserves	15%	15%	15%	16%	16%	16%	15%	15%	14%	15%	15%	15%	15%
% Oil Reserves	85%	85%	85%	84%	84%	84%	85%	85%	86%	85%	85%	85%	85%
Proven Reserve Life Index	9.9	10.2	10.1	10.2	10.3	10.1	9.7	8.1	7.8	7.8	7.7	7.7	8.2
Proven Reserve Additions:													
Gas Additions (bcf)	1,184.0	908.0	2,219.0	1,841.0	1,539.0	1,099.0	97.0	(908.0)	(491.0)	608.0	664.0	781.0	(30.0)
Oil Additions (mmbbls)	814.0	888.0	761.0	1,018.0	1,116.0	692.0	214.0	(1,380.0)	134.0	14.0	103.0	251.0	(915.0)
Total Additions (mmboe)	1,011.3	1,039.3	1,130.8	1,324.8	1,372.5	875.2	230.2	(1,531.3)	52.2	115.3	213.7	381.2	-920.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	445.7	378.3	374.3	235.5	130.0	76.8	134.5	118.8	-106.3	225.0	274.8	393.5	646.8
Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Dispositions	-	-	-	-	-	-	-	-	-	(42.8)	(83.7)	(126.5)	(126.5)
Revisions of Estimates	565.7	661.0	756.5	1,089.3	1,242.5	798.3	95.7	-1,650.2	158.5	-66.8	22.5	114.2	(1,440.3)
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	44.1%	36.4%	33.1%	17.8%	9.5%	8.8%	58.4%	-7.8%	-203.8%	195.1%	128.6%	103.2%	-70.3%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dispositions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-37.1%	-39.2%	-33.2%	13.8%
Revisions of Estimates	55.9%	63.6%	66.9%	82.2%	90.5%	91.2%	41.6%	107.8%	303.8%	-57.9%	10.5%	30.0%	156.6%
Additions as % of Production:													
Gas	72.1%	55.2%	131.2%	115.0%	98.7%	71.4%	6.4%	-67.7%	-43.3%	60.9%	74.9%	25.9%	-0.5%
Oil	71.7%	83.6%	71.9%	97.0%	106.0%	66.7%	21.4%	-147.6%	15.0%	1.7%	13.9%	10.3%	-20.9%
Total	71.8%	77.8%	84.3%	100.6%	104.5%	67.7%	18.4%	-132.2%	4.8%	11.9%	24.0%	13.0%	-17.2%
Additions as % of Reserves:													
Gas	9.3%	7.6%	17.8%	14.5%	12.1%	9.0%	0.9%	-10.5%	-7.0%	9.2%	10.4%	11.7%	-0.4%
Oil	6.9%	7.6%	6.7%	9.0%	9.8%	6.2%	2.1%	-17.3%	1.9%	0.2%	1.8%	3.9%	-12.1%
Total	7.2%	7.6%	8.4%	9.8%	10.1%	6.7%	1.9%	-16.3%	0.6%	1.5%	3.1%	5.0%	-10.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,825.9	$2,367.3	$2,385.1	$2,342.0	$2,563.0	$2,795.3	$2,640.8	$2,566.8	$2,016.1	$1,641.5	$1,839.6	$5,497.3	$10,704.8
Development	$7,689.6	$11,599.8	$12,174.4	$9,371.8	$12,177.1	$13,893.0	$12,838.1	$9,382.1	$5,511.8	$2,701.8	$2,847.2	$11,060.8	$33,281.0
Acquisitions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	na	na
Total Expenditures	$9,515.5	$13,967.1	$14,559.4	$11,713.8	$14,740.2	$16,688.3	$15,478.8	$11,948.9	$7,527.9	$4,343.4	$4,686.8	$16,558.1	$43,985.8
Expenditures as % of Total (US$million):													
Exploration	19.2%	16.9%	16.4%	20.0%	17.4%	16.7%	17.1%	21.5%	26.8%	37.8%	39.3%	33.2%	24.3%
Development	80.8%	83.1%	83.6%	80.0%	82.6%	83.3%	82.9%	78.5%	73.2%	62.2%	60.7%	66.8%	75.7%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$15,939.8	$10,172.6	$14,242.2	$16,151.1	$19,720.1	$14,977.4	$10,831.5	$4,912.7	$1,927.7	$6,442.9	$8,759.0	$17,129.6	$32,873.7
Cashflow (US$/boe)	$11.31	$7.61	$10.62	$12.27	$15.02	$11.58	$8.65	$4.24	$1.78	$6.63	$9.83	$5.82	$6.14
Recycle Ratio	1.2x	0.6x	0.8x	1.4x	1.4x	0.6x	0.1x	-0.5x	0.0x	0.2x	0.6x	0.2x	-0.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$9.41	$13.44	$12.87	$8.84	$10.74	$19.07	$67.25	-$7.80	$144.31	$27.46	$15.76	$32.62	-$55.43
Acquisition Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
All Sources (incl. Revisions)	$9.41	$13.44	$12.87	$8.84	$10.74	$19.07	$67.25	-$7.80	$144.31	$27.46	$15.76	$32.62	-$55.43
Exploration & Development (excl. revisions)	$21.35	$36.92	$38.89	$49.74	$113.39	$217.20	$115.08	$100.55	-$70.80	$19.30	$17.05	$42.08	$68.00
Acquisition Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
All Sources (excl. revisions)	$21.35	$36.92	$38.89	$49.74	$113.39	$217.20	$115.08	$100.55	-$70.80	$19.30	$17.05	$42.08	$68.00
Geographically Segmented Costs													
Latin America	$9.41	$13.44	$12.87	$8.84	$10.74	$19.07	$67.25	-$7.80	$144.31	$27.46	$15.76	$32.62	-$55.43

Source: BMO Capital Markets, Company Reports

Pemex (PEMEX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	5.26	5.47	6.03	6.57	7.14	7.96	8.47	8.92	7.67	12.95	12.95	11.82	10.41
Exploration Expense	0.42	1.45	1.26	1.40	1.51	1.34	1.21	1.57	1.78	0.78	0.78	1.44	1.42
G&A/Other	42.66	32.97	41.21	48.75	54.38	53.07	43.20	19.92	16.38	19.31	19.31	19.87	25.34
F&D Costs	9.41	13.44	12.87	8.84	10.74	19.07	67.25	100.55	62.29	27.46	27.46	35.17	54.66
Return on Capital	5.85	8.65	8.18	5.69	6.85	12.40	40.74	52.50	30.05	13.30	13.30	17.03	29.15
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	63.60	61.98	69.55	71.24	80.62	93.83	160.87	183.45	118.18	73.80	73.80	85.33	120.97
Quality Differential	29.90	7.41	9.88	24.38	14.89	17.67	23.02	11.62	12.29	8.83	8.83	10.63	13.31
Required WTI Price	93.49	69.39	79.43	95.63	95.51	111.50	183.90	195.07	130.46	82.63	82.63	95.97	134.28
	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D/Exploration	9.83	14.89	14.14	10.24	12.25	20.41	68.46	102.12	64.07	28.24	28.24	36.62	56.08
Op Cost/G&A/Other	47.92	38.44	47.23	55.32	61.52	61.03	51.67	28.84	24.06	32.26	32.26	31.69	35.75

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Operating Costs	5.26	5.47	6.03	6.57	7.14	7.96	8.47	8.92	7.67	12.95	12.95	11.82	10.41
Exploration Expense	0.42	1.45	1.26	1.40	1.51	1.34	1.21	1.57	1.78	0.78	0.78	1.44	1.42
G&A/Other	42.66	32.97	41.21	48.75	54.38	53.07	43.20	19.92	16.38	19.31	19.31	19.87	25.34
F&D Costs	9.41	13.44	12.87	8.84	10.74	19.07	67.25	100.55	62.29	27.46	27.46	35.17	54.66
Return on Capital	5.85	8.65	8.18	5.69	6.85	12.40	40.74	52.50	30.05	13.30	13.30	17.03	29.15
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	63.60	61.98	69.55	71.24	80.62	93.83	160.87	183.45	118.18	73.80	73.80	85.33	120.97
Quality Differential	29.90	7.41	9.88	24.38	14.89	17.67	23.02	11.62	12.29	8.83	8.83	10.63	13.31
Required WTI Price	93.49	69.39	79.43	95.63	95.51	111.50	183.90	195.07	130.46	82.63	82.63	95.97	134.28

Source: BMO Capital Markets, Company Reports

Pemex (PEMEX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.18	6.94	7.69	8.41	9.25	9.68	9.93	8.42	8.42	14.08	17.39	17.50	14.98
Exploration Expense	1.63	1.46	1.64	1.78	1.56	1.38	1.75	1.95	1.95	0.85	1.97	2.16	2.03
G&A/Other	37.25	47.43	57.07	64.07	61.68	49.36	22.19	17.98	17.98	20.99	27.54	29.51	34.46
F&D Costs (1-Year)	14.63	16.18	10.61	12.53	22.36	70.32	35.07	80.46	80.46	40.03	21.93	39.83	49.56
Return on Capital	9.79	10.64	7.06	8.34	14.67	44.21	18.25	39.80	39.80	19.64	10.63	19.52	28.06
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	**69.49**	**82.65**	**84.06**	**95.13**	**109.52**	**174.94**	**87.19**	**148.60**	**148.60**	**95.60**	**79.46**	**108.51**	**129.09**
Quality Differential	8.38	11.37	28.54	17.54	20.53	26.31	12.95	13.48	13.48	9.60	12.01	11.70	14.87
Required WTI Price	**77.86**	**94.01**	**112.61**	**112.67**	**130.05**	**201.25**	**100.13**	**162.08**	**162.08**	**105.20**	**91.47**	**120.21**	**143.96**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.18	6.94	7.69	8.41	9.25	9.68	9.93	8.42	8.42	14.08	17.39	17.50	14.98
Exploration Expense	1.63	1.46	1.64	1.78	1.56	1.38	1.75	1.95	1.95	0.85	1.97	2.16	2.03
G&A/Other	37.25	47.43	57.07	64.07	61.68	49.36	22.19	17.98	17.98	20.99	27.54	29.51	34.46
F&D Costs (1-Year)	20.36	17.91	12.32	11.46	25.33	18.61	41.71	83.05	83.05	27.76	21.13	41.37	38.45
Return on Capital	13.59	11.77	8.25	7.55	16.75	11.67	21.70	41.08	41.08	13.59	10.24	20.27	20.14
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	**79.01**	**85.51**	**86.97**	**93.27**	**114.57**	**90.70**	**97.27**	**152.47**	**152.47**	**77.27**	**78.27**	**110.81**	**110.05**
Quality Differential	8.38	11.37	28.54	17.54	20.53	26.31	12.95	13.48	13.48	9.60	12.01	11.70	14.87
Required WTI Price	**87.39**	**96.87**	**115.51**	**110.81**	**135.10**	**117.01**	**110.22**	**165.95**	**165.95**	**86.87**	**90.28**	**122.50**	**124.92**

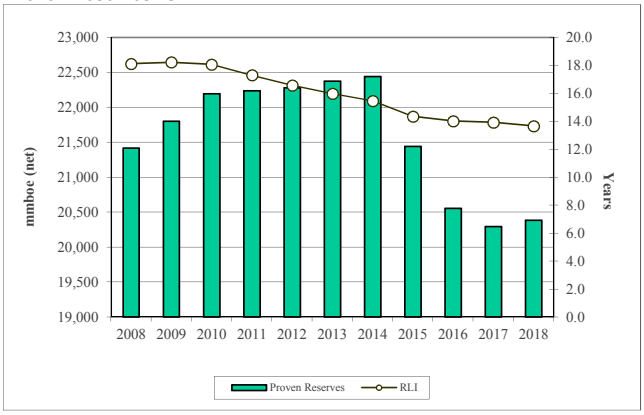
Source: BMO Capital Markets, Company Reports

PetroChina Company Limited (PTR - NYSE) US$, net

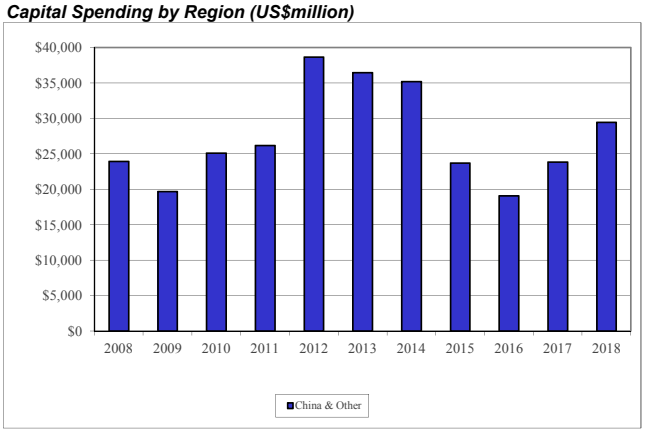
- PetroChina reported results from operations of $11.28/boe in 2018 compared to $4.66/boe in 2017.
- The company's F&D costs declined to $18.63/boe from $19.93/boe last year. On realized oil:gas price ratio basis, F&D costs were $21.35/boe, up from $20.99/boe while the costs for PD reserves came in at $18.36/boe compared to $15.28/boe the previous year.
- PetroChina's operations in 2018 imply a required Brent breakeven oil price of $65.98/boe on a realized ratio basis on total proved reserves, while its PD costs imply a Brent breakeven oil price of $71.62/boe.
- The company reported ROCE of 5.2% in 2018 versus 3.0% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Yuan to U.S. Dollars using average annual exchange rates.

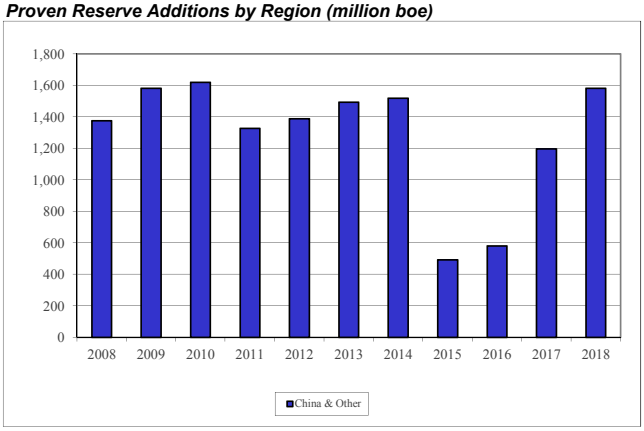
Proven Reserves vs RLI



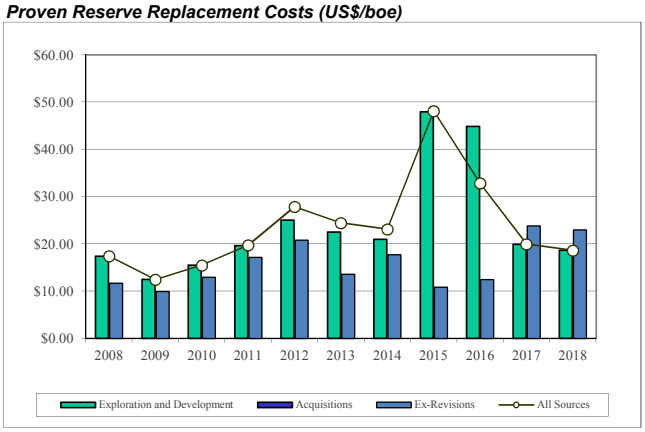
Capital Spending by Region (US$million)



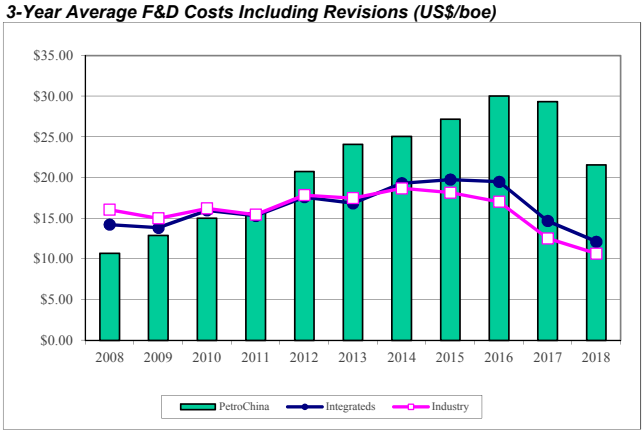
Proven Reserve Additions by Region (million boe)



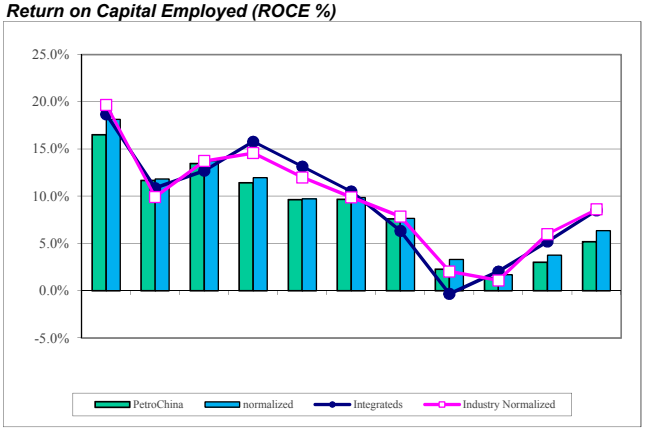
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

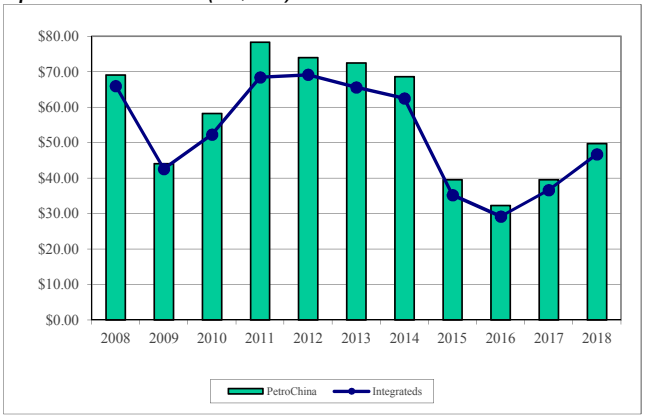
See pages F1 to F4 for analyst coverage.

PetroChina Company Limited (PTR - NYSE)

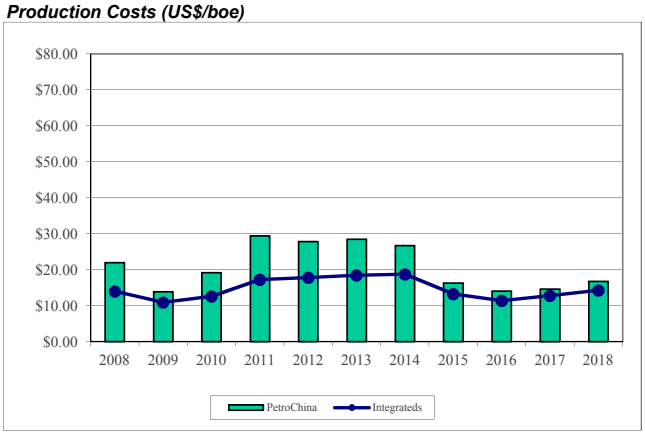
US$/boe, net

Worldwide

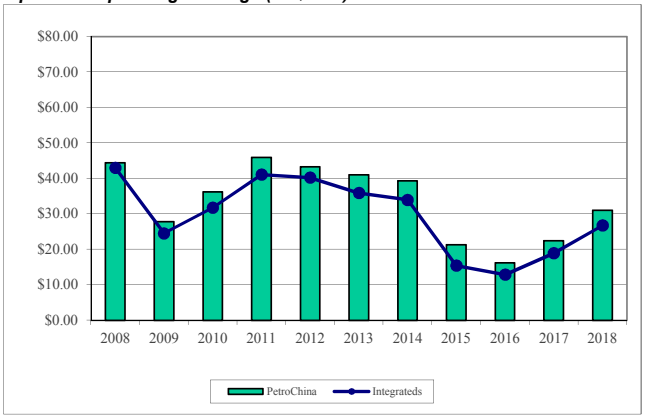
Upstream Net Revenue (US$/boe)



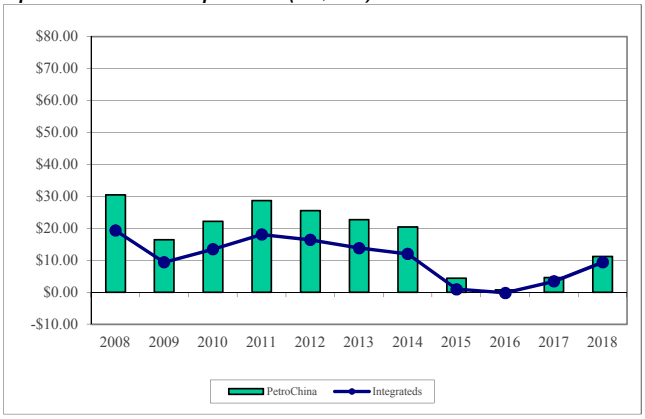
Production Costs (US$/boe)



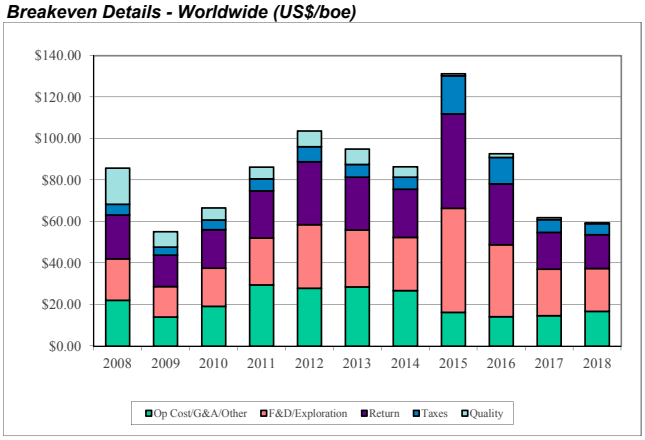
Upstream Operating Earnings (US$/boe)



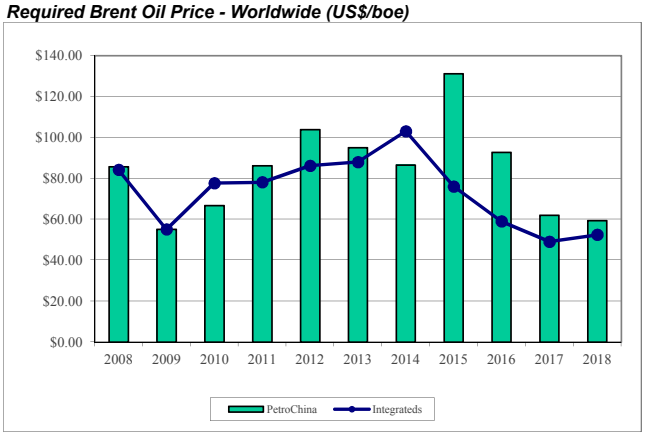
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

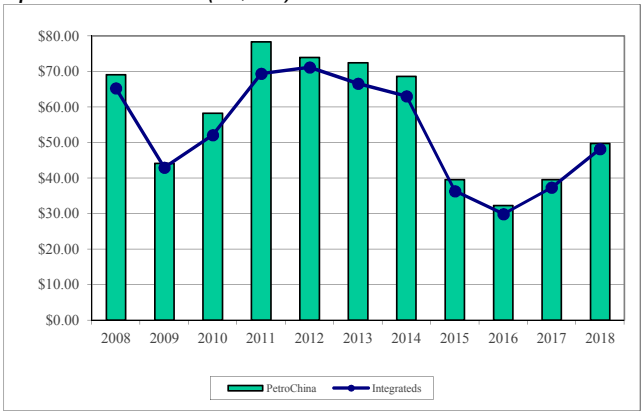
See pages F1 to F4 for analyst coverage.

PetroChina Company Limited (PTR - NYSE)

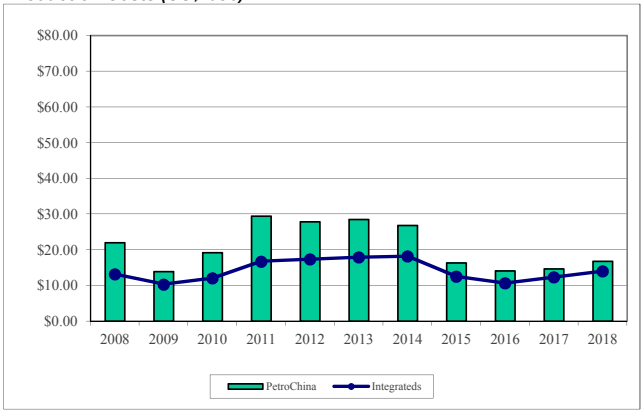
US$/boe, net

Total International

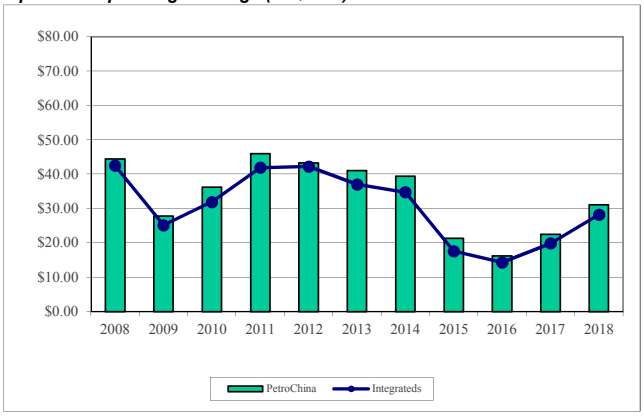
Upstream Net Revenue (US$/boe)



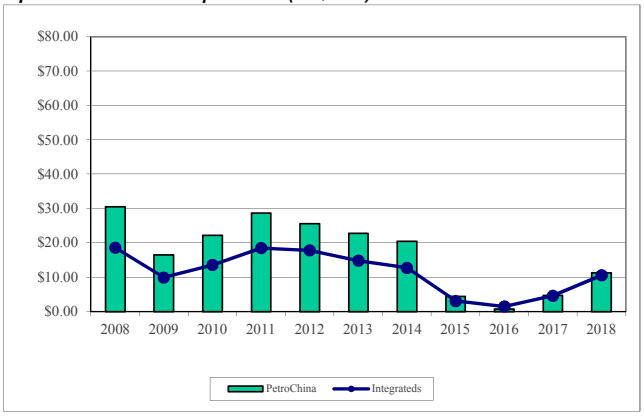
Production Costs (US$/boe)



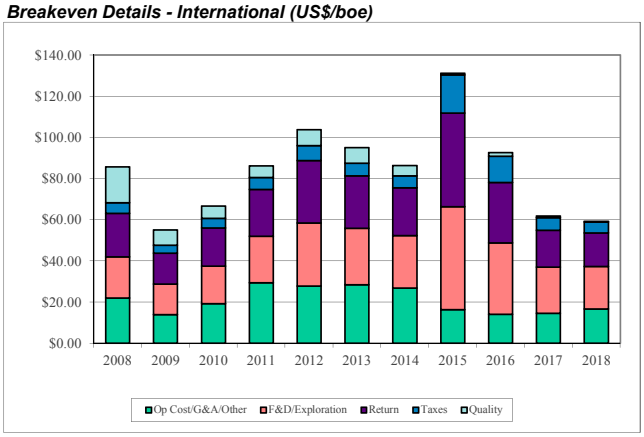
Upstream Operating Earnings (US$/boe)



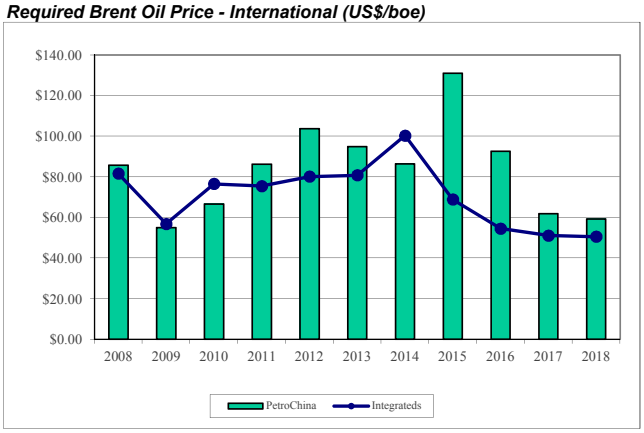
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

PetroChina Company Limited (PTR - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	89,913	59,333	80,506	119,872	125,196	127,468	126,193	75,644	62,079	74,785	99,578
Midstream / Downstream Revenue	64,206	89,871	136,007	190,158	222,785	239,816	244,310	198,894	181,265	223,491	256,216
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	154,119	149,204	216,512	310,030	347,981	367,284	370,503	274,538	243,344	298,275	355,794
Crude Oil and Product Purchases	70,106	65,997	111,890	181,928	215,203	227,657	229,317	155,956	133,835	172,480	213,192
Production and Transportation Expenses	28,632	29,620	38,214	54,751	55,280	57,904	57,463	51,597	46,061	47,057	52,306
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	3,148	2,840	3,393	3,699	3,800	4,115	3,581	2,924	2,796	3,534	2,831
General and Administrative	17,485	15,432	17,888	20,124	22,028	24,495	23,987	22,693	21,060	29,951	32,957
Depreciation, Depletion and Amortization	13,612	13,212	16,099	20,060	23,862	25,946	28,235	28,300	31,552	35,123	35,061
Interest, net	99	554	(152)	(435)	1,274	1,810	2,042	(446)	(1,252)	2,886	2,809
Other	(2,246)	1,090	1,226	1,392	93	(3,598)	437	4,315	2,489	(611)	(778)
Earnings Before Income Tax	23,284	20,459	27,953	28,511	26,441	28,954	25,440	9,199	6,801	7,855	17,416
Current Income Taxes	6,243	3,639	5,706	6,126	5,693	8,476	6,655	3,023	2,974	3,527	5,288
Future Income Taxes	(1,182)	1,248	(14)	(205)	44	(2,655)	(531)	(509)	(600)	(1,115)	1,180
Total Income Taxes	5,061	4,888	5,691	5,921	5,737	5,821	6,123	2,514	2,375	2,411	6,469
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	18,223	15,572	22,262	22,590	20,705	23,134	19,317	6,685	4,427	5,444	10,947
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	18,223	15,572	22,262	22,590	20,705	23,134	19,317	6,685	4,427	5,444	10,947
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	18,223	15,572	22,262	22,590	20,705	23,134	19,317	6,685	4,427	5,444	10,947

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	18,223	15,572	22,262	22,590	20,705	23,134	19,317	6,685	4,427	5,444	10,947
Charges and Credits Not Impacting Cash	13,652	14,212	16,060	20,339	23,200	22,769	27,207	30,949	31,443	34,725	36,869
Other	(450)	1,796	2,279	2,573	5,234	6,175	6,275	3,238	3,141	4,673	4,307
Cash Flow From Operations	31,425	31,579	40,601	45,502	49,139	52,077	52,800	40,872	39,011	44,842	52,124
Change in Working Capital / Other	(6,892)	6,769	6,501	(610)	(11,209)	(5,148)	5,053	706	898	9,409	1,023
Net Cash From Operating Activities	24,533	38,348	47,101	44,892	37,930	46,929	57,853	41,578	39,909	54,251	53,146
Total Capital Expenditures	(30,995)	(40,069)	(42,149)	(44,000)	(49,415)	(49,462)	(49,750)	(34,647)	(27,249)	(33,919)	(40,396)
Acquisitions, net	(1,913)	(2,239)	(5,296)	(2,170)	(2,259)	5,163	282	(1,697)	(703)	(426)	(162)
Other	2,124	4,036	3,224	2,286	(988)	951	2,268	1,994	1,481	(1,691)	85
Net Cash From Investing Activities	(30,783)	(38,272)	(44,221)	(43,884)	(52,662)	(43,348)	(47,200)	(34,349)	(26,471)	(36,036)	(40,473)
Net Change in Debt	8,518	15,267	(75)	13,342	20,072	8,829	7,168	1,912	(5,477)	(6,490)	(9,681)
Net Change in Common Stock	-	-	-	-	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(8,110)	(8,809)	(9,730)	(12,697)	(14,631)	(9,576)	(10,978)	(5,461)	(1,633)	(4,771)	(6,436)
Other	720	1,312	801	787	6,504	(1,244)	(3,381)	(3,682)	(2,974)	(2,755)	(2,555)
Net Cash From Financing Activities	1,129	7,770	(9,004)	1,433	11,945	(1,991)	(7,191)	(7,230)	(10,085)	(14,016)	(18,672)
Effect of Exchange Rate on Cash	(16)	26	35	(48)	(31)	(288)	169	(159)	432	(523)	378
Net Increase/(Decrease) in Cash	(5,138)	7,872	(6,090)	2,392	(2,818)	1,303	3,631	(160)	3,786	3,676	(5,620)
Cash and Equivalents, Beginning of Year	8,445	3,307	11,179	5,090	7,482	4,664	5,967	9,598	9,438	13,224	16,900
Cash and Equivalents, End of Year	3,307	11,179	5,090	7,482	4,664	5,967	9,598	9,438	13,224	16,900	11,280

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

PetroChina Company Limited (PTR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	32,298	43,287	42,829	59,631	66,264	70,094	63,506	55,585	57,441	62,908	65,476
Net Property, Plant and Equipment	129,337	157,430	183,001	212,274	248,846	268,181	283,633	284,002	261,801	251,854	257,885
Other Assets	10,186	11,646	18,895	24,770	28,676	42,669	43,246	41,305	41,454	41,029	44,326
Total Assets	171,821	212,363	244,725	296,676	343,787	380,944	390,385	380,892	360,696	355,792	367,688
Total Current Liabilities	38,033	56,877	63,493	86,648	91,105	104,989	94,101	75,007	75,139	85,325	88,644
Long-term Debt	4,723	12,511	19,407	27,954	46,567	49,260	60,096	69,131	56,119	42,888	40,729
Deferred Income Taxes	1,793	3,146	3,165	3,198	3,520	2,467	2,580	2,088	2,053	1,873	1,914
Other Liabilities and Deferred Credits	5,385	6,897	9,420	11,384	15,430	17,673	19,745	20,813	20,788	21,323	23,150
Total Liabilities	49,934	79,432	95,485	129,183	156,621	174,389	176,522	167,039	154,099	151,409	154,437
Minority Interests	8,099	8,831	10,499	12,328	18,486	22,316	23,027	26,145	27,648	27,787	29,686
Common Shares	26,334	26,791	27,041	28,317	29,011	29,768	29,703	29,121	27,545	27,080	27,667
Contributed Surplus (Paid-in Capital)	-	17,036	17,116	17,464	18,368	45,609	46,345	45,338	44,368	44,102	45,213
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	87,454	80,274	94,585	109,383	121,301	108,862	114,788	113,250	107,035	105,414	110,685
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	113,788	124,100	138,742	155,164	168,680	184,239	190,836	187,708	178,948	176,596	183,565
Total Liabilities and Shareholders' Equity	171,821	212,363	244,725	296,676	343,787	380,944	390,385	380,892	360,696	355,792	367,688
Return on Capital Employed (ROCE)	**16.5%**	**11.7%**	**13.5%**	**11.4%**	**9.6%**	**9.7%**	**7.6%**	**2.3%**	**1.4%**	**3.0%**	**5.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	81,674	52,735	71,469	100,624	99,385	101,415	99,505	59,051	47,309	57,607	74,120	179,036	337,593
Production Costs	25,998	16,609	23,572	37,837	37,409	39,904	38,816	24,313	20,679	21,332	24,965	66,975	130,104
Exploration	3,148	2,840	3,393	3,699	3,800	4,115	3,581	2,924	2,796	3,534	2,831	9,160	15,666
DD&A	7,564	8,632	10,503	12,954	15,649	17,729	20,140	22,478	22,179	23,614	24,046	69,838	112,455
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	44,963	24,655	34,002	46,134	42,527	39,667	36,969	9,336	1,656	9,128	22,279	33,063	79,368
Income Taxes	8,967	4,974	6,766	9,248	8,181	7,755	7,348	2,692	498	2,333	5,458	8,289	18,329
Results Of Operations	35,996	19,681	27,236	36,886	34,345	31,912	29,621	6,644	1,158	6,795	16,821	24,774	61,039

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	81,674	52,735	71,469	100,624	99,385	101,415	99,505	59,051	47,309	57,607	74,120	179,036	337,593
Production Costs	25,998	16,609	23,572	37,837	37,409	39,904	38,816	24,313	20,679	21,332	24,965	66,975	130,104
Exploration	3,148	2,840	3,393	3,699	3,800	4,115	3,581	2,924	2,796	3,534	2,831	9,160	15,666
DD&A	7,564	8,632	10,503	12,954	15,649	17,729	20,140	22,478	22,179	23,614	24,046	69,838	112,455
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax Results Of Operations	44,963	24,655	34,002	46,134	42,527	39,667	36,969	9,336	1,656	9,128	22,279	33,063	79,368
Income Taxes	8,967	4,974	6,766	9,248	8,181	7,755	7,348	2,692	498	2,333	5,458	8,289	18,329
Results Of Operations	35,996	19,681	27,236	36,886	34,345	31,912	29,621	6,644	1,158	6,795	16,821	24,774	61,039

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

PetroChina Company Limited (PTR - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$69.12	$44.09	$58.19	$78.29	$73.97	$72.45	$68.61	$39.53	$32.26	$39.52	$49.70	$40.55	$45.87
Production Costs	$22.00	$13.89	$19.19	$29.44	$27.84	$28.51	$26.76	$16.28	$14.10	$14.64	$16.74	$15.17	$17.68
Exploration	$2.66	$2.37	$2.76	$2.88	$2.83	$2.94	$2.47	$1.96	$1.91	$2.42	$1.90	$2.07	$2.13
DD&A	$6.40	$7.22	$8.55	$10.08	$11.65	$12.66	$13.89	$15.05	$15.12	$16.20	$16.12	$15.82	$15.28
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$38.05	$20.61	$27.68	$35.89	$31.65	$28.34	$25.49	$6.25	$1.13	$6.26	$14.94	$7.49	$10.78
Income Taxes	$7.59	$4.16	$5.51	$7.19	$6.09	$5.54	$5.07	$1.80	$0.34	$1.60	$3.66	$1.88	$2.49
Results Of Operations	$30.46	$16.46	$22.18	$28.70	$25.56	$22.80	$20.42	$4.45	$0.79	$4.66	$11.28	$5.61	$8.29

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$69.12	$44.09	$58.19	$78.29	$73.97	$72.45	$68.61	$39.53	$32.26	$39.52	$49.70	$40.55	$45.87
Production Costs	$22.00	$13.89	$19.19	$29.44	$27.84	$28.51	$26.76	$16.28	$14.10	$14.64	$16.74	$15.17	$17.68
Exploration	$2.66	$2.37	$2.76	$2.88	$2.83	$2.94	$2.47	$1.96	$1.91	$2.42	$1.90	$2.07	$2.13
DD&A	$6.40	$7.22	$8.55	$10.08	$11.65	$12.66	$13.89	$15.05	$15.12	$16.20	$16.12	$15.82	$15.28
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$38.05	$20.61	$27.68	$35.89	$31.65	$28.34	$25.49	$6.25	$1.13	$6.26	$14.94	$7.49	$10.78
Income Taxes	$7.59	$4.16	$5.51	$7.19	$6.09	$5.54	$5.07	$1.80	$0.34	$1.60	$3.66	$1.88	$2.49
Results Of Operations	$30.46	$16.46	$22.18	$28.70	$25.56	$22.80	$20.42	$4.45	$0.79	$4.66	$11.28	$5.61	$8.29

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Mainland China & Other													
Net Revenue	$69.12	$44.09	$58.19	$78.29	$73.97	$72.45	$68.61	$39.53	$32.26	$39.52	$49.70	$40.55	$45.87
Production Costs	$22.00	$13.89	$19.19	$29.44	$27.84	$28.51	$26.76	$16.28	$14.10	$14.64	$16.74	$15.17	$17.68
Exploration	$2.66	$2.37	$2.76	$2.88	$2.83	$2.94	$2.47	$1.96	$1.91	$2.42	$1.90	$2.07	$2.13
DD&A	$6.40	$7.22	$8.55	$10.08	$11.65	$12.66	$13.89	$15.05	$15.12	$16.20	$16.12	$15.82	$15.28
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$38.05	$20.61	$27.68	$35.89	$31.65	$28.34	$25.49	$6.25	$1.13	$6.26	$14.94	$7.49	$10.78
Income Taxes	$7.59	$4.16	$5.51	$7.19	$6.09	$5.54	$5.07	$1.80	$0.34	$1.60	$3.66	$1.88	$2.49
Results Of Operations	$30.46	$16.46	$22.18	$28.70	$25.56	$22.80	$20.42	$4.45	$0.79	$4.66	$11.28	$5.61	$8.29

Source: BMO Capital Markets, Company Reports

PetroChina Company Limited (PTR - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	5,106.8	5,786.3	6,084.9	6,564.4	7,011.0	7,676.4	8,298.1	8,578.1	8,971.2	9,379.2	9,884.9	9,411.8	9,022.3
Liquids Production (b/d)	2,386,301	2,312,329	2,350,685	2,427,397	2,512,329	2,555,890	2,590,411	2,662,740	2,522,466	2,430,137	2,438,356	2,463,653	2,528,822
Total Production (boe/d)	3,237,443	3,276,712	3,364,840	3,521,461	3,680,822	3,835,297	3,973,425	4,092,420	4,017,671	3,993,333	4,085,845	4,032,283	4,032,539
% Gas Production	26%	29%	30%	31%	32%	33%	35%	35%	37%	39%	40%	39%	37%
% Oil Production	74%	71%	70%	69%	68%	67%	65%	65%	63%	61%	60%	61%	63%
Proven Reserves:													
Gas Reserves (bcf)	61,189.0	63,244.0	65,503.0	66,653.0	67,581.0	69,322.4	71,097.3	77,524.5	78,711.6	76,887.4	76,466.4	77,355.1	76,137.4
Oil Reserves (mmbbls)	11,221.0	11,263.0	11,278.0	11,128.0	11,018.0	10,820.3	10,593.4	8,521.1	7,437.8	7,481.3	7,641.3	7,520.1	8,335.0
Total Proven Reserves (mmboe)	21,419.2	21,803.7	22,195.2	22,236.8	22,281.5	22,374.0	22,443.0	21,441.9	20,556.4	20,295.9	20,385.7	20,412.7	21,024.6
% Gas Reserves	48%	48%	49%	50%	51%	52%	53%	60%	64%	63%	63%	63%	60%
% Oil Reserves	52%	52%	51%	50%	49%	48%	47%	40%	36%	37%	37%	37%	40%
Proven Reserve Life Index	18.1	18.2	18.1	17.3	16.6	16.0	15.5	14.4	14.0	13.9	13.7	13.9	14.3
Proven Reserve Additions:													
Gas Additions (bcf)	5,942.0	4,167.0	4,480.0	3,546.0	3,487.0	4,543.3	4,803.7	9,558.2	4,461.6	1,599.2	3,187.0	9,247.8	23,609.7
Oil Additions (mmbbls)	386.0	886.0	873.0	736.0	807.0	735.2	718.6	-1,100.4	-162.6	930.5	1,050.0	1,817.9	1,436.1
Total Additions (mmboe)	1,376.3	1,580.5	1,619.7	1,327.0	1,388.2	1,492.4	1,519.2	492.6	581.0	1,197.0	1,581.2	3,359.2	5,371.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	2,056.5	1,984.7	1,940.3	1,528.3	1,859.3	2,685.7	1,991.5	2,189.9	1,379.8	1,002.6	1,284.8	3,667.2	7,848.5
Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	156.0	0.0	0.0	156.0	156.0
Dispositions	0.0	0.0	0.0	0.0	0.0	0.0	-4.9	0.0	0.0	0.0	0.0	-	(4.9)
Revisions of Estimates	(680.2)	(404.2)	(320.7)	(201.3)	(471.2)	(1,193.2)	(467.3)	(1,697.2)	(954.8)	194.4	296.3	(464.0)	(2,628.6)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	149.4%	125.6%	119.8%	115.2%	133.9%	180.0%	131.1%	444.5%	237.5%	83.8%	81.3%	109.2%	146.1%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	26.9%	0.0%	0.0%	4.6%	2.9%
Dispositions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.3%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.1%
Revisions of Estimates	-49.4%	-25.6%	-19.8%	-15.2%	-33.9%	-80.0%	-30.8%	-344.5%	-164.3%	16.2%	18.7%	-13.8%	-48.9%
Additions as % of Production:													
Gas	318.8%	197.3%	201.7%	148.0%	136.3%	162.2%	158.6%	305.3%	136.3%	46.7%	88.3%	89.7%	143.4%
Oil	44.3%	105.0%	101.7%	83.1%	88.0%	78.8%	76.0%	-113.2%	-17.7%	104.9%	118.0%	67.4%	31.1%
Total	116.5%	132.1%	131.9%	103.2%	103.3%	106.6%	104.8%	33.0%	39.6%	82.1%	106.0%	76.1%	73.0%
Additions as % of Reserves:													
Gas	9.7%	6.6%	6.8%	5.3%	5.2%	6.6%	6.8%	12.3%	5.7%	2.1%	4.2%	12.0%	31.0%
Oil	3.4%	7.9%	7.7%	6.6%	7.3%	6.8%	6.8%	-12.9%	-2.2%	12.4%	13.7%	24.2%	17.2%
Total	6.4%	7.2%	7.3%	6.0%	6.2%	6.7%	6.8%	2.3%	2.8%	5.9%	7.8%	16.5%	25.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$5,419.8	$4,791.8	$5,942.3	$5,805.5	$6,487.6	$7,041.0	$5,909.2	$4,702.3	$4,379.2	$4,819.0	$5,315.8	$14,514.0	$25,125.4
Development	$18,540.4	$14,891.1	$19,166.0	$20,288.0	$28,273.2	$26,568.2	$26,001.2	$18,924.8	$14,697.1	$19,042.7	$24,139.1	$57,878.9	$102,804.9
Acquisitions	$0.0	$0.0	$0.0	$79.1	$3,897.2	$2,879.1	$3,311.7	$72.6	$0.0	$0.0	$0.0	$0.0	$3,384.3
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$23,960.2	$19,682.9	$25,108.3	$26,172.5	$38,657.9	$36,488.2	$35,222.0	$23,699.6	$19,076.3	$23,861.7	$29,454.9	$72,392.9	$131,314.5
Expenditures as % of Total:													
Exploration	22.6%	24.3%	23.7%	22.2%	16.8%	19.3%	16.8%	19.8%	23.0%	20.2%	18.0%	20.0%	19.1%
Development	77.4%	75.7%	76.3%	77.5%	73.1%	72.8%	73.8%	79.9%	77.0%	79.8%	82.0%	80.0%	78.3%
Acquisitions	0.0%	0.0%	0.0%	0.3%	10.1%	7.9%	9.4%	0.3%	0.0%	0.0%	0.0%	0.0%	2.6%
Cashflow (US$million)	$46,708.4	$31,152.3	$41,130.8	$53,538.8	$53,794.6	$53,755.9	$53,341.3	$32,046.3	$26,132.0	$33,942.7	$43,697.6	$103,772.3	$189,159.9
Cashflow (US$/boe)	$39.53	$26.05	$33.49	$41.65	$40.04	$38.40	$36.78	$21.45	$17.82	$23.29	$29.30	$23.50	$25.70
Recycle Ratio	2.3x	2.1x	2.2x	2.1x	1.4x	1.6x	1.6x	0.4x	0.5x	1.2x	1.6x	1.1x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$17.41	$12.45	$15.50	$19.66	$25.04	$22.52	$20.94	$47.96	$44.89	$19.93	$18.63	$22.60	$24.51
Acquisition Costs	na	na	na	na	na	na	na	na	$0.00	na	na	na	na
All Sources (incl. revisions)	$17.41	$12.45	$15.50	$19.72	$27.85	$24.45	$23.11	$48.11	$32.83	$19.93	$18.63	$21.55	$24.43
Exploration & Development (excl. revisions)	$11.65	$9.92	$12.94	$17.07	$18.70	$12.51	$16.02	$10.79	$13.83	$23.80	$22.93	$19.74	$16.30
Acquisition Costs	na	na	na	na	na	na	na	na	$0.00	na	na	na	na
All Sources (excl. revisions)	$11.65	$9.92	$12.94	$17.12	$20.79	$13.59	$17.69	$10.82	$12.42	$23.80	$22.93	$18.93	$16.40
Geographically Segmented Costs													
China	$17.41	$12.45	$15.50	$19.72	$27.85	$24.45	$23.11	$48.11	$32.83	$19.93	$18.63	$21.55	$24.43

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

PetroChina Company Limited (PTR - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	22.00	13.89	19.19	29.44	27.84	28.51	26.76	16.28	14.10	14.64	14.64	15.17	17.68
Exploration Expense	2.66	2.37	2.76	2.88	2.83	2.94	2.47	1.96	1.91	2.42	2.42	2.07	2.13
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	17.41	12.45	15.50	19.72	27.85	24.45	23.11	48.11	32.83	19.93	19.93	21.55	24.43
Return on Capital	21.02	15.10	18.64	22.75	30.32	25.43	23.22	45.53	29.36	17.83	17.83	19.19	22.90
Income Taxes	5.24	3.82	4.63	5.70	7.22	6.18	5.76	18.45	12.64	6.12	6.12	6.42	6.88
Breakeven Oil Price	68.34	47.63	60.72	80.50	96.06	87.51	81.32	130.32	90.84	60.95	60.95	64.41	74.01
Quality Differential	17.35	7.46	5.88	5.70	7.65	7.48	5.09	0.82	1.77	0.92	0.92	1.03	1.80
Required WTI Price	85.69	55.09	66.60	86.20	103.71	94.99	86.41	131.15	92.62	61.87	61.87	65.44	75.81
	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D/Exploration	20.07	14.83	18.26	22.60	30.68	27.39	25.58	50.07	34.74	22.36	22.36	23.63	26.55
Op Cost/G&A/Other	22.00	13.89	19.19	29.44	27.84	28.51	26.76	16.28	14.10	14.64	14.64	15.17	17.68

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D/Exploration													
Op Cost/G&A/Other													

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	22.00	13.89	19.19	29.44	27.84	28.51	26.76	16.28	14.10	14.64	14.64	15.17	17.68
Exploration Expense	2.66	2.37	2.76	2.88	2.83	2.94	2.47	1.96	1.91	2.42	2.42	2.07	2.13
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	17.41	12.45	15.50	19.72	27.85	24.45	23.11	48.11	32.83	19.93	19.93	21.55	24.43
Return on Capital	21.02	15.10	18.64	22.75	30.32	25.43	23.22	45.53	29.36	17.83	17.83	19.19	22.90
Income Taxes	5.24	3.82	4.63	5.70	7.22	6.18	5.76	18.45	12.64	6.12	6.12	6.42	6.88
Breakeven Oil Price	68.34	47.63	60.72	80.50	96.06	87.51	81.32	130.32	90.84	60.95	60.95	64.41	74.01
Quality Differential	17.35	7.46	5.88	5.70	7.65	7.48	5.09	0.82	1.77	0.92	0.92	1.03	1.80
Required WTI Price	85.69	55.09	66.60	86.20	103.71	94.99	86.41	131.15	92.62	61.87	61.87	65.44	75.81

Source: BMO Capital Markets, Company Reports

PetroChina Company Limited (PTR - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.10	22.96	38.03	35.92	36.63	33.85	16.53	14.53	14.53	16.06	19.77	16.68	19.62
Exploration Expense	2.75	3.30	3.72	3.65	3.78	3.12	1.99	1.96	1.96	2.66	2.24	2.28	2.36
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	15.68	20.69	29.17	39.59	36.89	33.78	56.09	36.54	36.54	20.99	21.35	23.83	29.16
Return on Capital	16.80	21.34	27.08	34.91	33.14	29.45	51.80	32.17	32.17	17.69	16.71	19.89	25.50
Income Taxes	4.25	5.30	6.79	8.31	8.05	7.31	20.99	13.85	13.85	6.07	5.42	6.65	7.66
Breakeven Oil Price	**55.58**	**73.59**	**104.78**	**122.38**	**118.49**	**107.52**	**147.40**	**99.05**	**99.05**	**63.48**	**65.50**	**69.33**	**84.29**
Quality Differential	8.65	7.03	7.36	9.87	9.62	6.43	0.84	1.82	1.82	1.00	0.48	1.10	2.12
Required WTI Price	**64.23**	**80.63**	**112.14**	**132.25**	**128.11**	**113.95**	**148.24**	**100.87**	**100.87**	**64.49**	**65.98**	**70.44**	**86.41**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.10	22.96	38.03	35.92	36.63	33.85	16.53	14.53	14.53	16.06	19.77	16.68	19.62
Exploration Expense	2.75	3.30	3.72	3.65	3.78	3.12	1.99	1.96	1.96	2.66	2.24	2.28	2.36
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	20.55	32.51	28.96	40.94	37.22	25.46	20.73	43.03	43.03	15.28	18.36	20.06	24.57
Return on Capital	21.99	33.57	26.50	36.10	32.19	21.79	18.95	37.88	37.88	12.89	23.24	18.53	24.66
Income Taxes	5.56	8.34	6.64	8.60	7.82	5.40	7.68	16.30	16.30	4.43	7.54	6.20	7.40
Breakeven Oil Price	**66.96**	**100.68**	**103.84**	**125.20**	**117.63**	**89.62**	**65.88**	**113.71**	**113.71**	**51.32**	**71.14**	**63.75**	**78.61**
Quality Differential	8.65	7.03	7.36	9.87	9.62	6.43	0.84	1.82	1.82	1.00	0.48	1.10	2.12
Required WTI Price	**75.61**	**107.72**	**111.21**	**135.07**	**127.25**	**96.05**	**66.71**	**115.53**	**115.53**	**52.32**	**71.62**	**64.86**	**80.73**

Source: BMO Capital Markets, Company Reports

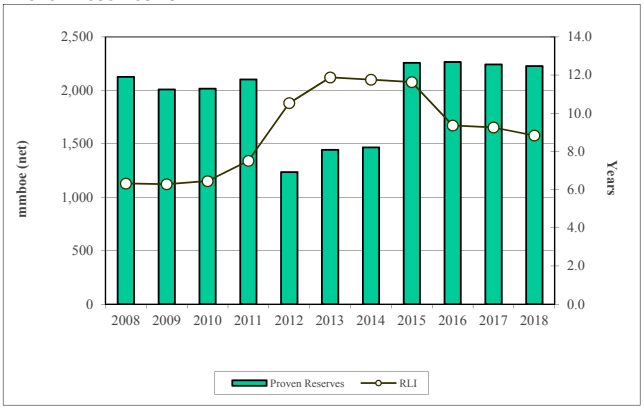
Repsol (REP - XMAD)

US$, net

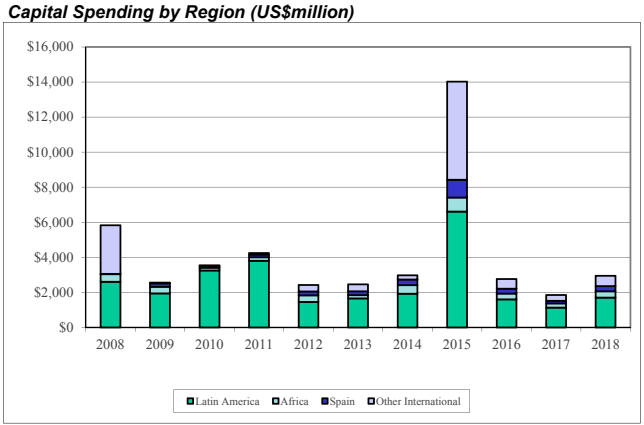
- Repsol reported results from operations of $3.56/boe in 2018 versus a loss of $0.35/boe in 2017.
- F&D costs increased $13.74/boe compared to $10.19/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $21.29/boe from $14.51/boe in 2017 while the costs for PD reserves also increased to $19.91/boe versus $13.19/boe the previous year.
- The company's 2018 operations imply a required Brent breakeven oil price of $81.62/boe on a realized ratio basis on total proved reserves, while its PD costs imply a Brent breakeven oil price of $78.88/boe.
- Repsol reported ROCE of 7.4% in 2018 versus 6.4% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

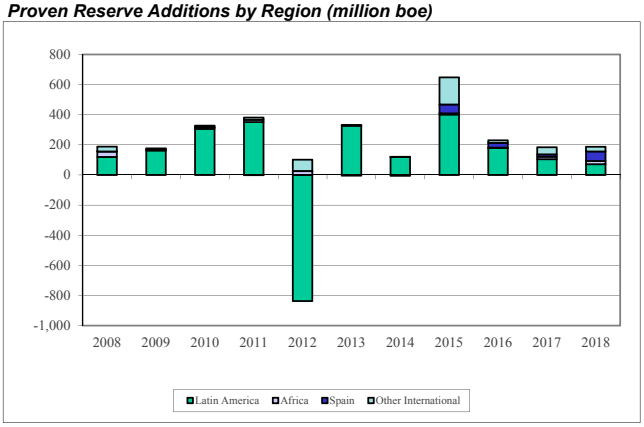
Proven Reserves vs RLI



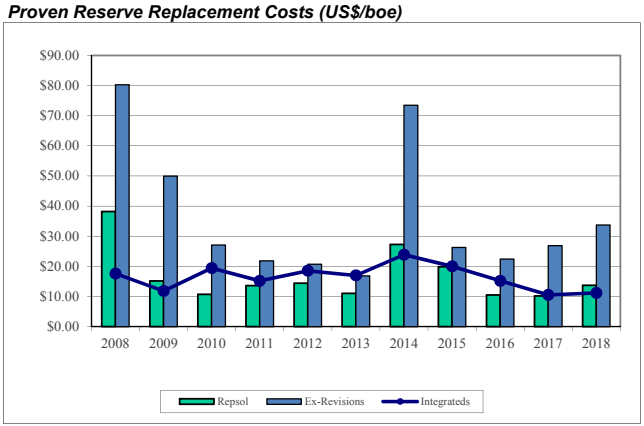
Capital Spending by Region (US$million)



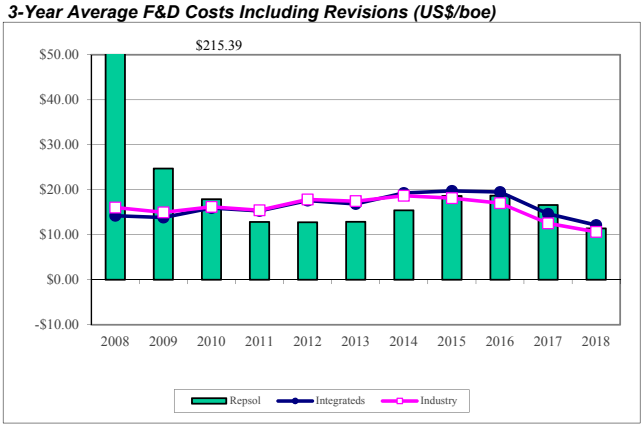
Proven Reserve Additions by Region (million boe)



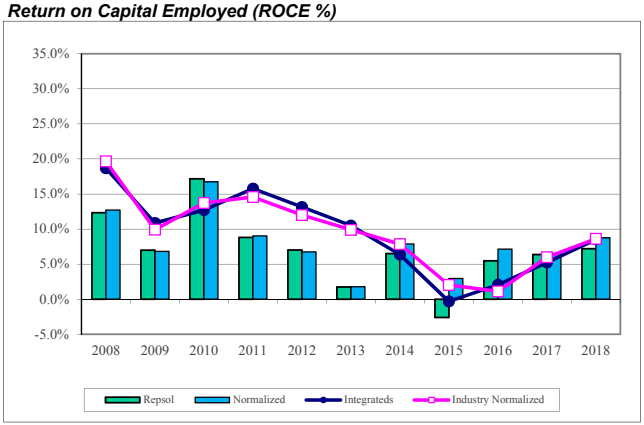
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



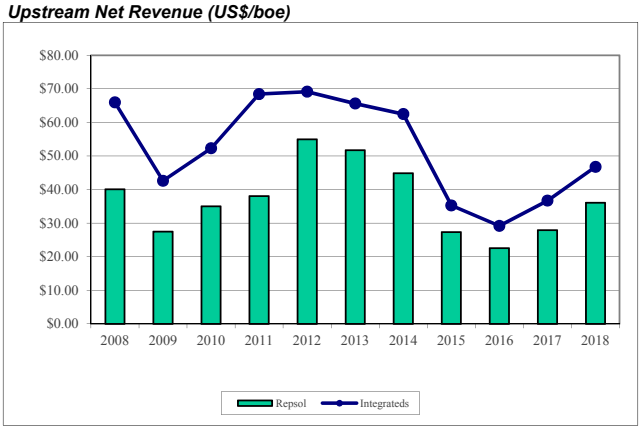
Source: BMO Capital Markets, Company Reports

Repsol (REP - XMAD)

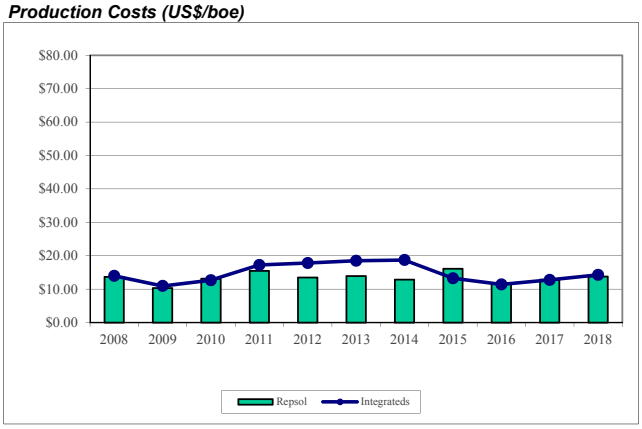
US$/boe, net

Worldwide

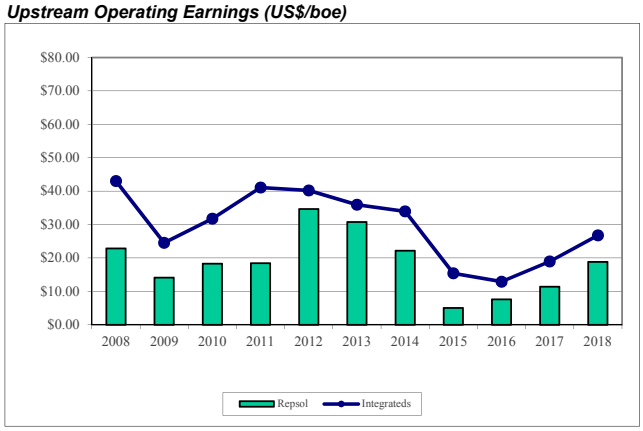
Upstream Net Revenue (US$/boe)



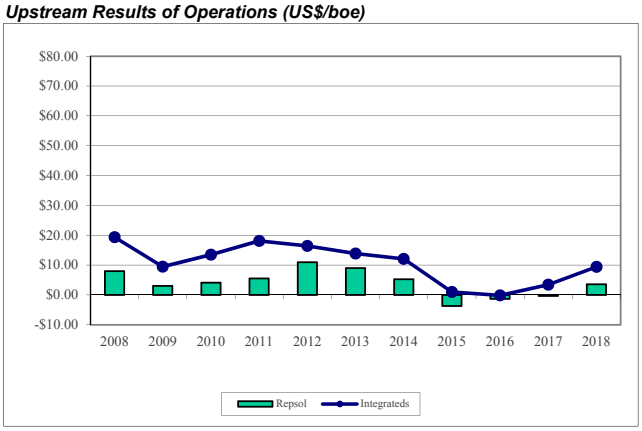
Production Costs (US$/boe)



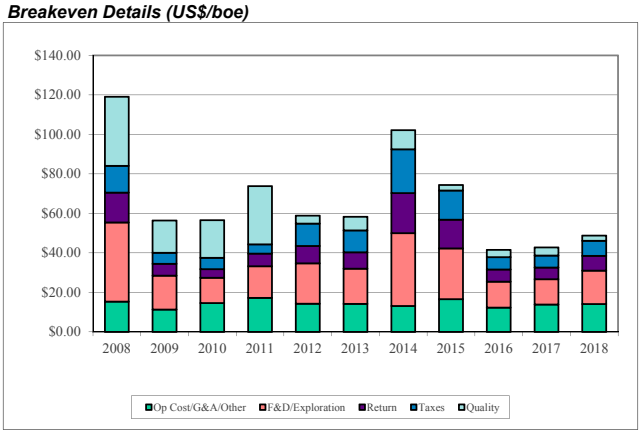
Upstream Operating Earnings (US$/boe)



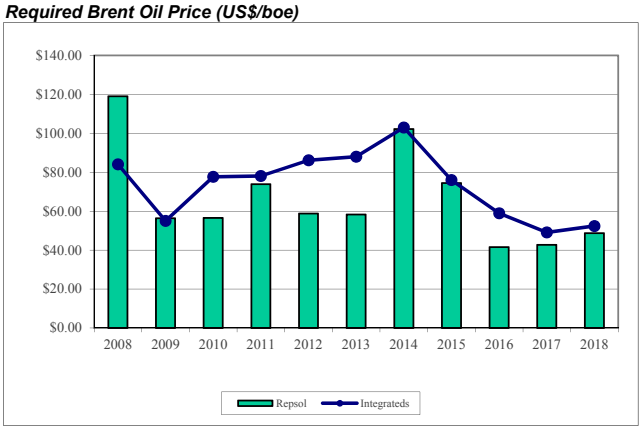
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



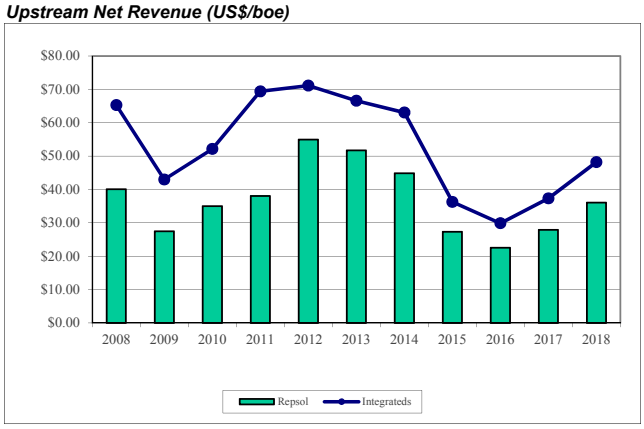
Source: BMO Capital Markets, Company Reports

Repsol (REP - XMAD)

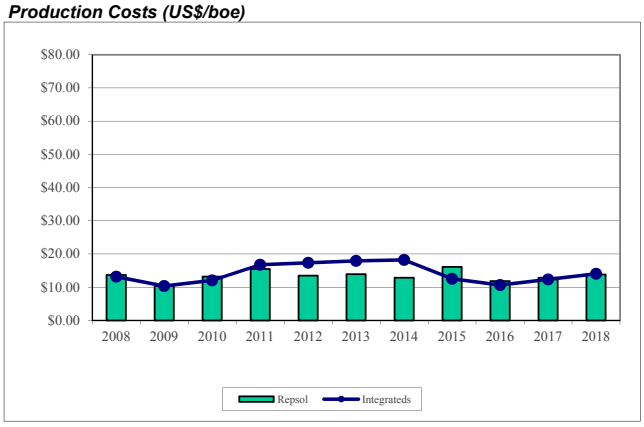
US$/boe, net

International

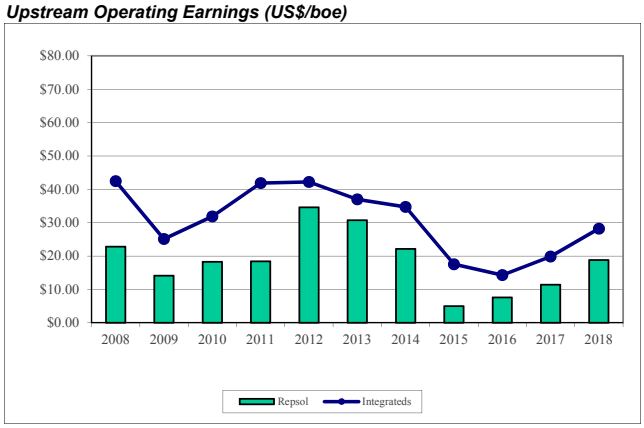
Upstream Net Revenue (US$/boe)



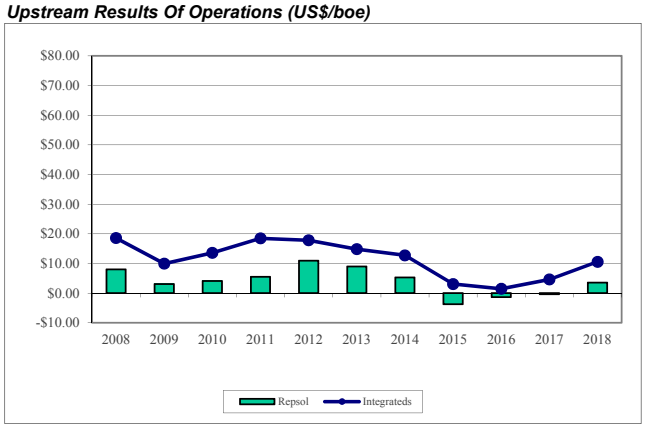
Production Costs (US$/boe)



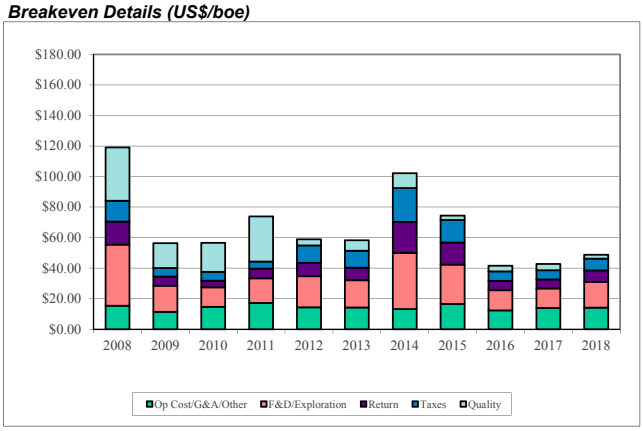
Upstream Operating Earnings (US$/boe)



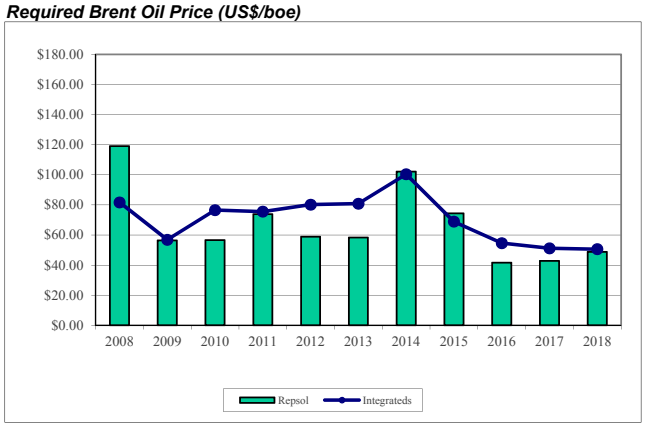
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

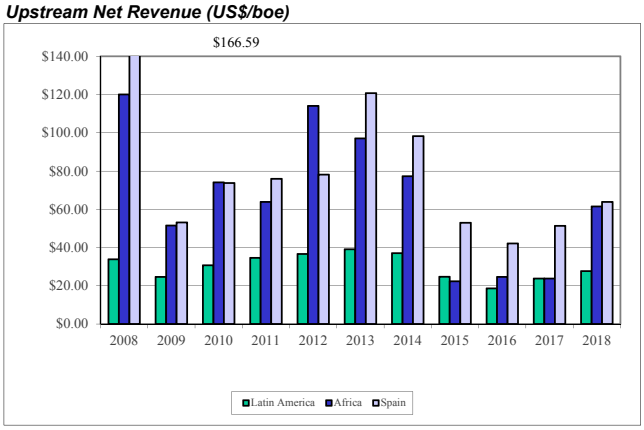
See pages F1 to F4 for analyst coverage.

Repsol (REP - XMAD)

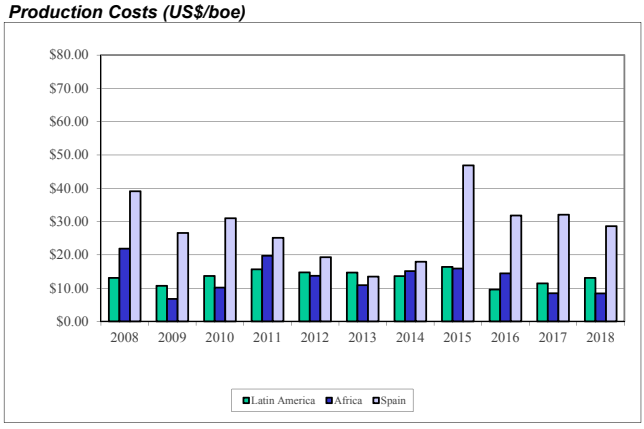
US$/boe, net

International Segments

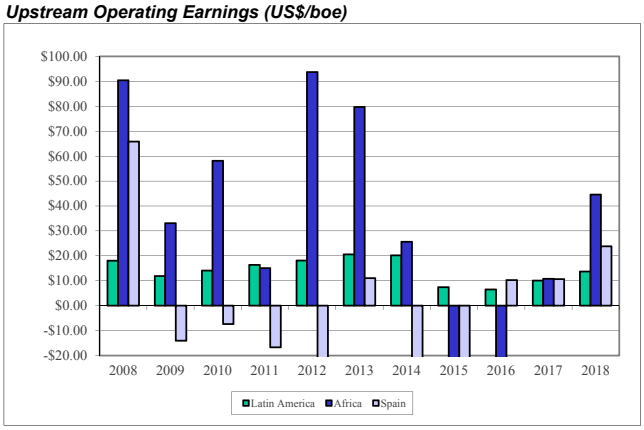
Upstream Net Revenue (US$/boe)



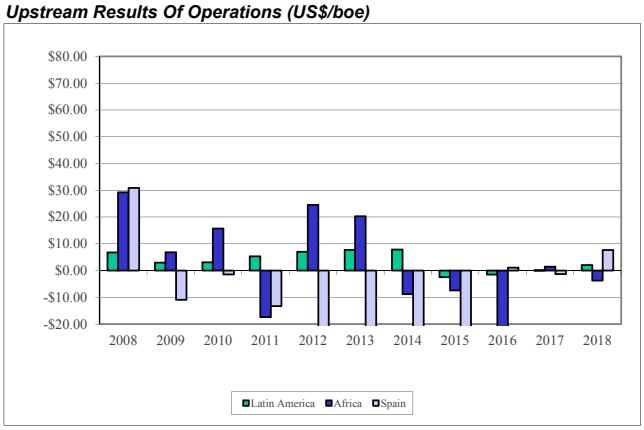
Production Costs (US$/boe)



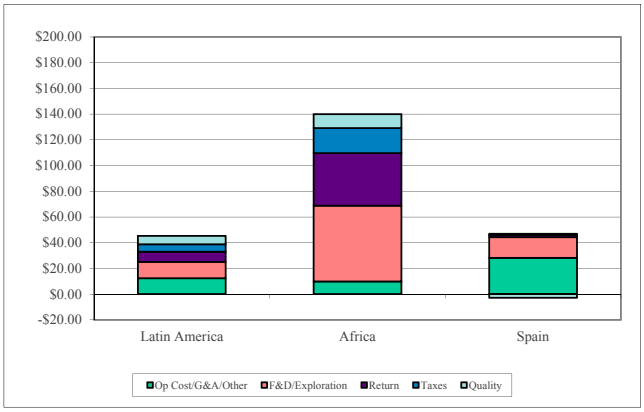
Upstream Operating Earnings (US$/boe)



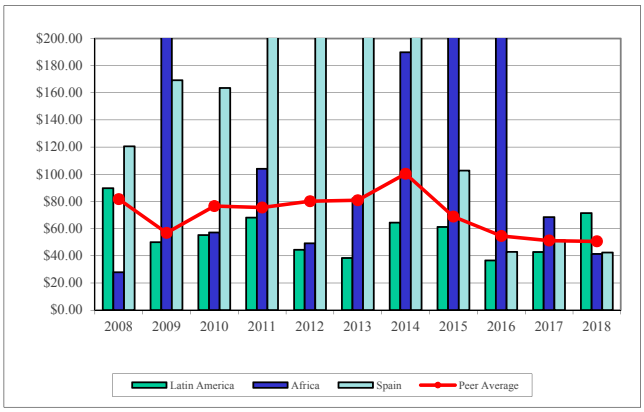
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Repsol (REP - XMAD)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	7,229	8,781	10,945	10,655	6,448	6,285	5,596	5,310	5,464	6,763	9,096
Midstream / Downstream Revenue	85,745	59,035	69,127	77,507	67,139	67,771	55,307	38,807	32,934	40,321	49,813
Other	(3,269)	576	97	590	810	733	1,926	2,225	3,037	2,011	1,748
Total Revenue and Other Income	89,705	68,392	80,169	88,752	74,397	74,789	62,830	46,342	41,435	49,095	60,658
Crude Oil and Product Purchases	60,114	43,844	48,003	59,747	56,255	57,349	50,822	32,011	26,140	34,183	44,951
Production and Transportation Expenses	4,605	3,299	4,118	4,327	7,491	7,700	6,439	7,261	6,564	5,870	4,402
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	641	650	666	688	709	822	549	351	226	418	472
General and Administrative	2,966	2,911	3,199	3,591	2,540	2,709	2,297	2,364	2,768	2,138	2,214
Depreciation, Depletion and Amortization	4,547	5,049	5,236	4,900	2,505	2,577	2,386	3,317	2,799	2,711	2,528
Interest, net	547	1,170	1,230	1,078	1,061	1,064	587	631	625	546	555
Other	9,354	7,476	8,944	8,874	104	92	(1,742)	2,721	241	(591)	1,598
Earnings Before Income Tax	6,931	3,992	8,773	5,547	3,733	2,476	1,491	(2,314)	2,071	3,820	3,937
Current Income Taxes	3,529	1,629	2,158	2,484	1,766	1,158	116	(190)	567	705	1,425
Future Income Taxes	(675)	(53)	153	(376)	42	100	78	(808)	(134)	673	213
Total Income Taxes	2,854	1,576	2,311	2,108	1,808	1,258	194	(998)	433	1,379	1,637
Minority Interest	(88)	(258)	101	104	(96)	(50)	52	(47)	(48)	(45)	(21)
Earnings From Continuing Operations	3,988	2,158	6,563	3,543	1,829	1,168	1,348	(1,362)	1,591	2,397	2,279
Discontinued Operations/Extraordinary Items	-	17	-	-	820	(909)	793	-	331	-	487
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	3,988	2,175	6,563	3,543	2,649	259	2,142	(1,362)	1,922	2,397	2,765
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	3,988	2,175	6,563	3,543	2,649	259	2,142	(1,362)	1,922	2,397	2,765

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	3,988	2,158	6,563	3,543	1,829	1,168	1,348	(1,362)	1,591	2,397	2,279
Charges and Credits Not Impacting Cash	3,872	5,646	6,055	5,212	3,256	3,499	3,013	2,860	2,891	3,802	3,213
Other	615	(335)	(2,887)	100	2,829	1,480	(1,530)	2,366	396	(297)	377
Cash Flow From Operations	8,475	7,469	9,731	8,855	7,914	6,147	2,831	3,864	4,878	5,902	5,868
Change in Working Capital / Other	1,380	(823)	(2,246)	(3,118)	802	(667)	1,283	1,521	(572)	(124)	(459)
Net Cash From Operating Activities	9,855	6,646	7,485	5,737	8,716	5,480	4,115	5,385	4,306	5,778	5,409
Total Capital Expenditures	(7,229)	(5,384)	(6,774)	(8,711)	(4,047)	(5,275)	(5,580)	(13,485)	(4,039)	(3,496)	(6,498)
Acquisitions, net	1,537	(5,649)	6,064	1,322	489	907	6,366	3,084	4,490	106	4,124
Other	(1,245)	78	(36)	3	(1,273)	3,081	716	548	(18)	238	769
Net Cash From Investing Activities	(6,937)	(10,955)	(746)	(7,386)	(4,831)	(1,287)	1,503	(9,852)	433	(3,152)	(1,605)
Net Change in Debt	658	6,507	647	1,193	918	(1,760)	(4,230)	1,393	(1,007)	(1,314)	(940)
Net Change in Common Stock	(360)	321	-	(3,561)	1,785	1,347	(109)	956	(102)	(331)	(1,884)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(2,366)	(2,699)	(1,069)	(2,348)	(1,218)	(701)	(2,274)	(542)	(465)	(375)	(351)
Other	(462)	(635)	(865)	1,230	(1,112)	(967)	(631)	163	(698)	(647)	(406)
Net Cash From Financing Activities	(2,530)	3,494	(1,287)	(3,486)	373	(2,082)	(7,245)	1,971	(2,272)	(2,668)	(3,581)
Effect of Exchange Rate on Cash	62	(42)	40	(117)	(109)	(77)	195	66	12	(55)	(4)
Net Increase/(Decrease) in Cash	450	(856)	5,492	(5,251)	4,149	2,034	(1,432)	(2,431)	2,478	(97)	219
Cash and Equivalents, Beginning of Year	3,252	3,702	2,846	8,338	3,087	7,235	9,269	7,837	5,406	7,884	7,787
Cash and Equivalents, End of Year	3,702	2,846	8,338	3,087	7,235	9,269	7,837	5,406	7,884	7,787	8,006

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Repsol (REP - XMAD)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	21,850	20,606	29,024	28,310	25,927	29,895	22,640	14,156	17,631	16,691	20,428
Net Property, Plant and Equipment	37,864	44,496	44,555	51,190	36,300	34,864	22,773	31,571	30,215	27,798	30,039
Other Assets	13,005	15,915	16,143	19,314	21,261	21,704	23,525	24,302	23,936	23,149	21,324
Total Assets	72,719	81,017	89,722	98,813	83,488	86,464	68,937	70,029	71,782	67,637	71,791
Total Current Liabilities	16,214	16,728	20,925	23,819	17,117	19,686	13,608	16,073	16,313	13,599	15,131
Long-term Debt	15,175	21,496	19,820	21,369	19,676	17,436	9,996	11,747	10,496	11,390	11,094
Deferred Income Taxes	3,757	4,736	4,493	5,346	3,939	4,453	2,237	1,725	1,526	1,188	1,214
Other Liabilities and Deferred Credits	6,280	8,220	10,009	10,620	7,428	7,798	5,691	8,633	9,010	7,490	7,836
Total Liabilities	41,427	51,180	55,248	61,154	48,159	49,373	31,533	38,178	37,345	33,667	35,275
Minority Interests	1,721	2,009	2,449	4,881	990	947	288	253	270	305	338
Common Shares	1,796	1,703	1,620	1,700	1,649	1,759	1,827	1,601	1,656	1,758	1,841
Contributed Surplus (Paid-in Capital)	9,457	8,966	8,528	8,951	8,266	8,539	8,540	7,136	7,115	7,264	7,593
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	16,811	17,602	17,656	23,933	23,746	26,283	25,939	21,478	19,530	21,432	22,847
Other / Comprehensive Income (Loss)	1,506	(442)	4,221	(1,806)	678	(438)	810	1,382	5,866	3,211	3,897
Total Shareholders' Equity	29,571	27,829	32,025	32,778	34,339	36,143	37,116	31,598	34,167	33,666	36,178
Total Liabilities and Shareholders' Equity	72,719	81,017	89,722	98,813	83,488	86,464	68,937	70,029	71,782	67,637	71,791

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	13,482	8,781	10,945	10,655	6,448	6,285	5,596	5,310	5,464	6,763	9,096	15,859	26,633
Production Costs	4,605	3,299	4,118	4,327	1,580	1,691	1,604	3,130	2,867	3,115	3,481	6,596	12,593
Exploration	641	650	666	688	709	822	1,200	1,123	639	649	794	1,442	3,204
DD&A	2,585	2,643	2,741	2,487	1,120	1,193	1,391	2,427	2,327	2,836	3,071	5,907	10,661
Other	550	321	440	487	96	35	31	85	121	237	76	313	519
Pre-tax Earnings	5,101	1,868	2,980	2,665	2,942	2,544	1,371	-1,454	-489	-75	1,675	1,600	-343
Income Taxes	2,413	897	1,694	1,122	1,659	1,452	715	-733	-170	10	778	788	-114
Net Earnings	2,688	971	1,286	1,543	1,283	1,092	656	-722	-319	-85	897	812	-229

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Net Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	13,482	8,157	10,063	9,557	5,366	5,265	4,580	4,455	4,650	5,778	7,999	13,777	22,882
Production Costs	4,605	3,250	4,056	4,268	1,571	1,642	1,577	2,925	2,543	2,747	3,082	5,829	11,297
Exploration	641	580	602	507	527	671	1,015	824	525	485	718	1,203	2,551
DD&A	2,585	2,193	2,274	2,089	718	788	854	2,046	1,954	2,208	2,364	4,572	8,571
Other	550	319	439	486	93	33	29	79	113	169	17	186	378
Pre-tax Earnings	5,101	1,815	2,692	2,207	2,458	2,131	1,104	-1,419	-484	168	1,819	1,987	85
Income Taxes	2,413	869	1,576	955	1,483	1,259	615	-721	-168	95	816	911	22
Net Earnings	2,688	946	1,116	1,252	975	871	489	-698	-316	73	1,003	1,076	63

Note: Converted to US$ from Euros
Source: BMO Capital Markets, Company Reports

Repsol (REP - XMAD)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue	$40.07	$27.48	$35.01	$38.07	$54.95	$51.73	$44.89	$27.35	$22.56	$27.93	$36.07	$28.95	$30.54
Production Costs	$13.69	$10.32	$13.17	$15.46	$13.47	$13.92	$12.86	$16.12	$11.84	$12.86	$13.80	$12.85	$13.45
Exploration	$1.91	$2.03	$2.13	$2.46	$6.04	$6.77	$9.62	$5.78	$2.64	$2.68	$3.15	$2.83	$4.17
DD&A	$7.68	$8.27	$8.77	$8.89	$9.55	$9.82	$11.16	$12.50	$9.61	$11.71	$12.18	$11.18	$11.42
Other	$1.64	$1.00	$1.41	$1.74	$0.82	$0.28	$0.25	$0.44	$0.50	$0.98	$0.30	$0.59	$0.52
Pre-tax Earnings	$15.16	$5.85	$9.53	$9.52	$25.08	$20.94	$11.00	-$7.49	-$2.02	-$0.31	$6.64	$1.51	$0.97
Income Taxes	$7.17	$2.81	$5.42	$4.01	$14.14	$11.95	$5.73	-$3.77	-$0.70	$0.04	$3.09	$0.84	$0.57
Net Earnings	$7.99	$3.04	$4.11	$5.51	$10.94	$8.99	$5.26	-$3.72	-$1.32	-$0.35	$3.56	$0.67	$0.40

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Net Earnings	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Net Revenue	$40.07	$27.48	$35.01	$38.07	$54.95	$51.73	$44.89	$27.35	$22.56	$27.93	$36.07	$28.95	$30.54
Production Costs	$13.69	$10.32	$13.17	$15.46	$13.47	$13.92	$12.86	$16.12	$11.84	$12.86	$13.80	$12.85	$13.45
Exploration	$1.91	$2.03	$2.13	$2.46	$6.04	$6.77	$9.62	$5.78	$2.64	$2.68	$3.15	$2.83	$4.17
DD&A	$7.68	$8.27	$8.77	$8.89	$9.55	$9.82	$11.16	$12.50	$9.61	$11.71	$12.18	$11.18	$11.42
Other	$1.64	$1.00	$1.41	$1.74	$0.82	$0.28	$0.25	$0.44	$0.50	$0.98	$0.30	$0.59	$0.52
Pre-tax Earnings	$15.16	$5.85	$9.53	$9.52	$25.08	$20.94	$11.00	-$7.49	-$2.02	-$0.31	$6.64	$1.51	$0.97
Income Taxes	$7.17	$2.81	$5.42	$4.01	$14.14	$11.95	$5.73	-$3.77	-$0.70	$0.04	$3.09	$0.84	$0.57
Net Earnings	$7.99	$3.04	$4.11	$5.51	$10.94	$8.99	$5.26	-$3.72	-$1.32	-$0.35	$3.56	$0.67	$0.40

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Latin America													
Net Revenue	$33.84	$24.65	$30.76	$34.61	$36.65	$39.13	$37.07	$24.69	$18.67	$23.82	$27.67	$23.39	$25.68
Production Costs	$13.06	$10.69	$13.64	$15.65	$14.72	$14.70	$13.64	$16.36	$9.59	$11.44	$13.09	$11.37	$12.63
Exploration	$1.06	$1.00	$1.50	$0.80	$2.85	$3.59	$3.04	$0.56	$0.81	$0.86	$0.97	$0.88	$1.15
DD&A	$7.89	$7.19	$7.70	$7.78	$6.46	$5.85	$7.06	$11.59	$9.05	$10.05	$10.35	$9.82	$9.73
Other	$1.65	$1.10	$1.53	$1.82	$1.00	$0.27	$0.17	$0.33	$1.76	$1.43	-$0.11	$1.03	$0.77
Pre-tax Earnings	$10.19	$4.68	$6.39	$8.56	$11.63	$14.73	$13.17	-$4.14	-$2.53	$0.04	$3.36	$0.29	$1.41
Income Taxes	$3.45	$1.73	$3.32	$3.22	$4.64	$6.98	$5.29	-$1.66	-$1.02	$0.02	$1.35	$0.11	$0.57
Net Earnings	$6.75	$2.95	$3.07	$5.34	$6.98	$7.75	$7.87	-$2.47	-$1.51	$0.02	$2.02	$0.18	$0.85

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Africa													
Net Revenue	$120.08	$51.49	$74.11	$63.83	$114.10	$97.10	$77.34	$22.33	$24.61	$23.81	$61.52	$43.42	$46.19
Production Costs	$21.88	$6.76	$10.18	$19.73	$13.72	$10.87	$15.09	$15.87	$14.46	$8.47	$8.42	$9.31	$10.87
Exploration	$7.77	$11.56	$5.65	$28.78	$6.57	$6.31	$36.29	$61.32	$27.35	$4.58	$8.54	$9.91	$19.33
DD&A	$5.10	$4.95	$5.28	$6.03	$5.50	$4.76	$4.58	$4.68	$31.06	$8.64	$7.61	$11.34	$9.62
Other	$0.00	$0.08	$0.15	$0.23	$0.07	$0.21	$0.34	$0.59	$3.71	$0.00	$0.00	$0.53	$0.51
Pre-tax Earnings	$85.34	$28.15	$52.85	$9.05	$88.23	$74.95	$21.03	-$60.13	-$51.96	$2.12	$36.95	$12.33	$5.85
Income Taxes	$56.13	$21.32	$37.17	$26.46	$63.73	$54.66	$29.85	-$52.70	-$16.80	$0.68	$40.72	$18.86	$12.82
Net Earnings	$29.21	$6.83	$15.69	-$17.41	$24.51	$20.29	-$8.82	-$7.43	-$35.16	$1.43	-$3.78	-$6.53	-$6.97

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Spain													
Net Revenue	$166.59	$53.10	$73.74	$75.93	$78.12	$120.79	$98.31	$52.96	$42.14	$51.32	$63.84	$53.10	$54.35
Production Costs	$39.08	$26.55	$30.97	$25.13	$19.29	$13.49	$17.94	$46.85	$31.80	$32.06	$28.62	$30.68	$32.63
Exploration	$8.23	$40.60	$44.25	$62.63	$81.02	$93.20	$151.45	$30.25	$7.93	$8.62	$11.40	$9.45	$16.43
DD&A	$16.45	$15.62	$8.85	$22.27	$35.69	$73.58	$39.86	$28.08	$8.58	$12.80	$12.04	$11.16	$14.39
Other	$53.47	$0.00	$5.90	$4.88	$3.86	$3.07	$4.65	$2.84	-$7.88	$0.00	$0.00	-$2.52	-$1.55
Pre-tax Earnings	$49.36	-$29.67	-$16.22	-$38.98	-$61.73	-$62.54	-$115.58	-$55.05	$1.70	-$2.15	$11.78	$4.33	-$7.55
Income Taxes	$18.51	-$18.74	-$14.75	-$25.70	-$36.65	-$38.01	-$43.18	-$20.99	$0.65	-$0.82	$4.12	$1.51	-$2.97
Net Earnings	$30.85	-$10.93	-$1.47	-$13.28	-$25.08	-$24.53	-$72.41	-$34.06	$1.05	-$1.33	$7.65	$2.82	-$4.58

Note: Converted to US$ from Euros
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Repsol (REP - XMAD)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	2,866.0	2,625.4	2,502.5	2,298.6	1,074.0	1,158.9	1,243.8	1,975.3	2,517.8	2,468.5	2,567.1	2,517.8	2,154.5
Liquids Production (b/d)	444,085	437,841	439,521	383,562	142,466	139,726	134,247	202,740	243,836	252,055	263,014	252,968	219,178
Total Production (boe/d)	921,747	875,411	856,597	766,667	321,461	332,877	341,553	531,963	663,470	663,470	690,868	672,603	578,265
% Gas Production	52%	50%	49%	50%	56%	58%	61%	62%	63%	62%	62%	62%	62%
% Oil Production	48%	50%	51%	50%	44%	42%	39%	38%	37%	38%	38%	38%	38%
Proven Reserves:													
Gas Reserves (bcf)	7,341.1	6,744.3	6,642.9	6,746.9	4,857.8	6,135.8	6,161.8	10,023.8	10,091.8	9,755.8	9,547.8	9,798.4	9,116.2
Oil Reserves (mmbbls)	902.3	883.3	908.0	977.0	426.0	420.0	439.0	587.0	583.0	616.0	636.0	611.7	572.2
Total Proven Reserves (mmboe)	2,125.9	2,007.3	2,015.2	2,101.5	1,235.7	1,442.7	1,466.0	2,257.7	2,265.0	2,242.0	2,227.3	2,244.8	2,091.6
% Gas Reserves	58%	56%	55%	54%	66%	71%	70%	74%	74%	73%	71%	73%	73%
% Oil Reserves	42%	44%	45%	46%	34%	29%	30%	26%	26%	27%	29%	27%	27%
Proven Reserve Life Index	6.3	6.3	6.4	7.5	10.5	11.9	11.8	11.6	9.4	9.3	8.8	9.1	10.2
Proven Reserve Additions:													
Gas Additions (bcf)	231.0	361.5	812.0	943.0	(1,497.1)	1,701.0	480.0	4,583.0	987.0	565.0	729.0	2,281.0	7,344.0
Oil Additions (mmbbls)	112.9	140.7	185.2	209.0	(499.0)	45.0	68.0	222.0	85.0	125.0	116.0	326.0	616.0
Total Additions (mmboe)	151.4	201.0	320.5	366.2	(748.5)	328.5	148.0	985.8	249.5	219.2	237.5	706.2	1,840.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	72.6	56.6	101.5	211.2	142.7	223.8	55.0	62.5	138.2	83.5	73.7	295.3	412.8
Acquisitions	0.0	4.3	38.3	17.7	29.5	0.0	0.0	700.0	3.3	4.2	26.7	34.2	734.2
Dispositions	(1.1)	-	(32.7)	(1.0)	(995.9)	(13.2)	(0.3)	(21.2)	(53.0)	(11.8)	(8.8)	(73.7)	(95.2)
Revisions of Estimates	79.9	140.1	213.3	138.3	75.2	117.8	93.3	244.5	161.0	143.3	146.0	450.3	788.2
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	47.9%	28.2%	31.7%	57.7%	-19.1%	68.1%	37.2%	6.3%	55.4%	38.1%	31.0%	41.8%	22.4%
Acquisitions	0.0%	2.2%	12.0%	4.8%	-3.9%	0.0%	0.0%	71.0%	1.3%	1.9%	11.2%	4.8%	39.9%
Dispositions	-0.7%	0.0%	-10.2%	-0.3%	133.0%	-4.0%	-0.2%	-2.1%	-21.2%	-5.4%	-3.7%	-10.4%	-5.2%
Revisions of Estimates	52.8%	69.7%	66.6%	37.8%	-10.0%	35.9%	63.1%	24.8%	64.5%	65.4%	61.5%	63.8%	42.8%
Additions as % of Production:													
Gas	22.1%	37.7%	88.9%	112.4%	-381.9%	402.1%	105.7%	635.6%	107.4%	62.7%	77.8%	82.7%	186.8%
Oil	69.6%	88.1%	115.4%	149.3%	-959.6%	88.2%	138.8%	300.0%	95.5%	135.9%	120.8%	117.7%	154.0%
Total	45.0%	62.9%	102.5%	130.9%	-637.9%	270.4%	118.7%	507.7%	103.0%	90.5%	94.2%	95.9%	174.4%
Additions as % of Reserves:													
Gas	3.1%	5.4%	12.2%	14.0%	-30.8%	27.7%	7.8%	45.7%	9.8%	5.8%	7.6%	23.3%	80.6%
Oil	12.5%	15.9%	20.4%	21.4%	-117.1%	10.7%	15.5%	37.8%	14.6%	20.3%	18.2%	53.3%	107.6%
Total	7.1%	10.0%	15.9%	17.4%	-60.6%	22.8%	10.1%	43.7%	11.0%	9.8%	10.7%	31.5%	88.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$762.1	$1,220.5	$1,085.2	$1,753.3	$1,036.5	$1,305.9	$1,914.4	$1,646.5	$702.9	$650.9	$750.1	$2,103.8	$5,664.7
Development	$2,520.1	$1,729.6	$2,287.1	$3,247.5	$1,830.0	$1,792.1	$2,055.3	$2,488.0	$2,408.6	$1,697.2	$2,570.3	$6,676.2	$11,219.4
Acquisitions	$2,540.7	$93.5	$412.6	$0.0	$697.0	$672.2	$71.7	$15,908.3	$59.8	$5.6	$63.8	$129.2	$16,109.3
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	na	na
Total Expenditures	$5,822.9	$3,043.6	$3,784.9	$5,000.7	$3,563.5	$3,770.1	$4,041.4	$20,042.8	$3,171.3	$2,353.8	$3,384.1	$8,909.2	$32,993.4
Expenditures as % of Total (US$million):													
Exploration	13.1%	40.1%	28.7%	35.1%	29.1%	34.6%	47.4%	8.2%	22.2%	27.7%	22.2%	23.6%	17.2%
Development	43.3%	56.8%	60.4%	64.9%	51.4%	47.5%	50.9%	12.4%	76.0%	72.1%	76.0%	74.9%	34.0%
Acquisitions	43.6%	3.1%	10.9%	0.0%	19.6%	17.8%	1.8%	79.4%	1.9%	0.2%	1.9%	1.5%	48.8%
Cashflow (US$million)	$5,272.7	$3,614.0	$4,026.4	$4,030.1	$2,403.5	$2,284.9	$2,047.3	$1,705.0	$2,007.4	$2,751.7	$3,967.7	$8,726.7	$12,479.0
Cashflow (US$/boe)	$15.67	$11.31	$12.88	$14.40	$20.48	$18.81	$16.42	$8.78	$8.29	$11.36	$15.73	$11.85	$11.82
Recycle Ratio	0.4x	0.7x	1.2x	1.1x	1.4x	1.7x	0.6x	0.4x	0.8x	1.1x	1.1x	1.0x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$21.53	$15.00	$10.71	$14.31	$13.16	$9.07	$26.76	$13.47	$10.40	$10.35	$15.12	$11.77	$14.06
Acquisition Costs	na	$21.61	$10.76	$0.00	$23.63	na	na	$22.73	$17.93	$1.36	$2.39	$3.78	$21.94
All Sources (incl. Revisions)	$38.19	$15.14	$10.72	$13.62	$14.41	$11.03	$27.25	$19.90	$10.48	$10.19	$13.74	$11.42	$17.05
Exploration & Development (excl. revisions)	$45.23	$52.12	$33.22	$23.68	$20.09	$13.84	$72.18	$66.15	$22.52	$28.12	$45.07	$29.73	$40.90
Acquisition Costs	na	$21.61	$10.76	$0.00	$23.63	na	na	$22.73	$17.93	$1.36	$2.39	$3.78	$21.94
All Sources (excl. revisions)	$80.25	$49.96	$27.06	$21.85	$20.70	$16.84	$73.48	$26.29	$22.41	$26.85	$33.73	$27.04	$28.76
Geographically Segmented Costs													
Spain	$61.11	$37.47	$116.56	$885.68	$679.01	$187.88	$320.18	$17.35	$9.19	$9.52	$4.76	$6.68	$12.20
Latin America	$21.60	$11.92	$9.57	$10.83	$9.17	$5.04	$16.13	$16.46	$8.04	$10.55	$24.01	$11.76	$14.44
Africa	$12.09	$87.80	$15.95	$13.61	$14.59	$1,123.87	-$81.71	$102.90	$116.03	$14.94	$16.19	$22.62	$52.03
Other International	$86.90	$10.65	$3.22	$6.29	$4.81	$49.65	$175.37	$31.19	$10.81	$5.85	$18.68	$10.58	$22.91

Notes: Reserve estimates reported after royalties; Dollar amounts have been converted from Euros to U.S. Dollars at average annual exchange rates
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Repsol (REP - XMAD)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	13.69	10.32	13.17	15.46	13.47	13.92	12.86	16.12	11.84	12.86	12.86	12.85	13.45
Exploration Expense	1.91	2.03	2.13	2.46	6.04	6.77	9.62	5.78	2.64	2.68	2.68	2.83	4.17
G&A/Other	1.64	1.00	1.41	1.74	0.82	0.28	0.25	0.44	0.50	0.98	0.98	0.59	0.52
F&D Costs	38.19	15.14	10.72	13.62	14.41	11.03	27.25	19.90	10.48	10.19	10.19	11.42	17.05
Return on Capital	15.12	5.99	4.35	6.40	8.77	8.31	20.34	14.57	6.15	5.91	5.91	6.54	10.90
Income Taxes	13.57	5.54	5.73	4.66	11.33	11.05	22.15	14.78	6.24	6.00	6.00	6.64	11.22
Breakeven Oil Price	84.10	40.03	37.51	44.34	54.84	51.37	92.46	71.59	37.85	38.63	38.63	40.87	57.31
Quality Differential	34.94	16.34	19.05	29.50	4.00	6.91	9.70	2.82	3.71	4.13	4.13	3.47	4.59
Required WTI Price	119.04	56.37	56.56	73.85	58.83	58.28	102.17	74.42	41.56	42.75	42.75	44.34	61.90

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	13.69	10.32	13.17	15.46	13.47	13.92	12.86	16.12	11.84	12.86	12.86	12.85	13.45
Exploration Expense	1.91	2.03	2.13	2.46	6.04	6.77	9.62	5.78	2.64	2.68	2.68	2.83	4.17
G&A/Other	1.64	1.00	1.41	1.74	0.82	0.28	0.25	0.44	0.50	0.98	0.98	0.59	0.52
F&D Costs	38.19	15.14	10.72	13.62	14.41	11.03	27.25	19.90	10.48	10.19	10.19	11.42	17.05
Return on Capital	15.12	5.97	4.39	6.49	9.20	8.94	21.75	14.88	6.29	5.90	5.90	6.54	11.13
Income Taxes	13.57	5.52	5.78	4.72	11.89	11.89	23.69	15.09	6.38	5.99	5.99	6.64	11.45
Breakeven Oil Price	84.10	39.99	37.59	44.50	55.83	52.84	95.42	72.21	38.13	38.61	38.61	40.86	57.78
Quality Differential	34.94	16.95	19.69	30.57	3.94	6.71	10.44	2.23	3.55	4.49	4.49	3.43	4.59
Required WTI Price	119.04	56.94	57.28	75.07	59.77	59.55	105.86	74.45	41.68	43.09	43.09	44.30	62.37

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Operating Costs	13.06	10.69	13.64	15.65	14.72	14.70	13.64	16.36	9.59	11.44	13.09	11.37	12.63
Exploration Expense	1.06	1.00	1.50	0.80	2.85	3.59	3.04	0.56	0.81	0.86	0.97	0.88	1.15
G&A/Other	1.65	1.10	1.53	1.82	1.00	0.27	0.17	0.33	1.76	1.43	(0.11)	1.03	0.77
F&D Costs	21.60	11.92	9.57	10.83	9.17	5.04	16.13	16.46	8.04	10.55	24.01	11.76	14.44
Return on Capital	8.31	4.63	3.85	4.90	6.00	4.39	13.28	13.56	5.62	7.07	15.33	7.91	10.58
Income Taxes	4.25	2.72	4.16	2.96	3.99	3.95	8.92	10.02	4.15	5.22	11.33	5.84	7.67
Breakeven Oil Price	49.92	32.05	34.24	36.96	37.73	31.93	55.17	57.28	29.97	36.56	64.62	38.79	47.24
Quality Differential	39.79	17.90	21.03	31.12	6.70	6.37	9.24	3.90	6.53	6.13	6.86	6.51	6.53
Required WTI Price	89.71	49.95	55.27	68.09	44.43	38.30	64.41	61.19	36.50	42.69	71.48	45.30	53.77

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	21.88	6.76	10.18	19.73	13.72	10.87	15.09	15.87	14.46	8.47	8.42	9.31	10.87
Exploration Expense	7.77	11.56	5.65	28.78	6.57	6.31	36.29	61.32	27.35	4.58	8.54	9.91	19.33
G&A/Other	-	0.08	0.15	0.23	0.07	0.21	0.34	0.59	3.71	-	-	0.53	0.51
F&D Costs	12.09	87.80	15.95	13.61	14.59	18.76	52.72	102.90	116.03	14.94	16.19	49.06	60.56
Return on Capital	5.02	49.97	7.48	6.74	7.55	12.66	56.44	165.46	179.64	8.87	6.39	40.81	59.07
Income Taxes	9.65	155.94	17.72	16.71	19.64	34.11	24.19	70.91	85.83	4.24	3.06	19.50	27.04
Breakeven Oil Price	56.41	312.09	57.13	85.80	62.14	82.92	185.08	417.04	427.01	41.10	42.60	129.11	177.38
Quality Differential	(28.52)	3.14	0.01	18.19	(12.93)	(0.70)	4.77	13.44	6.49	27.31	(1.32)	10.82	10.14
Required WTI Price	27.89	315.24	57.15	103.99	49.22	82.22	189.85	430.48	433.49	68.41	41.28	139.94	187.52

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Spain													
Operating Costs	39.08	26.55	30.97	25.13	19.29	13.49	17.94	46.85	31.80	32.06	28.62	30.68	32.63
Exploration Expense	8.23	40.60	44.25	62.63	81.02	93.20	151.45	30.25	7.93	8.62	11.40	9.45	16.43
G&A/Other	53.47	-	5.90	4.88	3.86	3.07	4.65	2.84	(7.88)	-	-	(2.52)	(1.55)
F&D Costs	67.54	47.42	49.02	70.68	347.82	187.88	320.18	17.35	9.19	9.52	4.76	6.68	12.20
Return on Capital	15.29	22.49	22.98	25.45	193.19	28.18	44.05	5.68	2.09	2.20	1.42	1.68	2.96
Income Taxes	9.17	38.56	19.61	49.28	282.35	43.68	26.27	3.50	1.29	1.35	0.88	1.04	1.81
Breakeven Oil Price	192.77	175.62	172.72	238.05	927.52	369.48	564.54	106.46	44.42	53.75	47.08	47.00	64.48
Quality Differential	(72.22)	(6.36)	(9.22)	0.34	9.89	(18.70)	1.07	(3.74)	(1.50)	(2.36)	(4.70)	(2.85)	(2.25)
Required WTI Price	120.55	169.26	163.51	238.38	937.41	350.79	565.61	102.72	42.92	51.39	42.38	44.15	62.24

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Repsol (REP - XMAD)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.96	16.01	17.77	18.25	18.48	17.08	23.75	17.79	17.79	19.06	20.20	19.02	19.70
Exploration Expense	2.36	2.59	2.82	8.18	8.99	12.78	8.52	3.96	3.96	3.97	4.61	4.18	5.97
G&A/Other	1.16	1.71	2.00	1.11	0.38	0.33	0.65	0.75	0.75	1.45	0.44	0.88	0.77
F&D Costs (1-Year)	19.63	16.58	20.07	27.09	31.35	44.40	38.38	17.82	17.82	14.51	21.29	17.85	29.66
Return on Capital	7.19	6.21	9.04	14.40	19.42	30.88	25.33	9.25	9.25	7.41	10.46	9.34	16.69
Income Taxes	6.65	8.18	6.57	18.61	25.83	33.63	25.70	9.38	9.38	7.52	10.62	9.47	17.18
Breakeven Oil Price	**48.95**	**51.27**	**58.27**	**87.64**	**104.45**	**139.09**	**122.32**	**58.96**	**58.96**	**53.92**	**67.62**	**60.74**	**89.98**
Quality Differential	38.97	44.61	64.39	28.26	34.74	36.70	9.06	9.80	9.80	12.29	14.00	12.03	16.37
Required WTI Price	**87.91**	**95.88**	**122.66**	**115.90**	**139.19**	**175.78**	**131.38**	**68.77**	**68.77**	**66.20**	**81.62**	**72.77**	**106.35**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.96	16.01	17.77	18.25	18.48	17.08	23.75	17.79	17.79	19.06	20.20	19.02	19.70
Exploration Expense	2.36	2.59	2.82	8.18	8.99	12.78	8.52	3.96	3.96	3.97	4.61	4.18	5.97
G&A/Other	1.16	1.71	2.00	1.11	0.38	0.33	0.65	0.75	0.75	1.45	0.44	0.88	0.77
F&D Costs (1-Year)	13.06	20.31	27.74	49.18	63.76	36.49	40.49	17.85	17.85	13.19	19.91	16.93	25.58
Return on Capital	4.81	7.56	12.49	26.25	39.50	23.90	25.93	9.26	9.26	6.76	9.79	8.60	14.32
Income Taxes	4.44	9.96	9.08	33.93	52.52	26.03	26.31	9.40	9.40	6.86	9.93	8.73	14.73
Breakeven Oil Price	**37.79**	**58.14**	**71.90**	**136.90**	**183.62**	**116.59**	**125.64**	**59.01**	**59.01**	**51.28**	**64.88**	**58.34**	**81.08**
Quality Differential	38.97	44.61	64.39	28.26	34.74	36.70	9.06	9.80	9.80	12.29	14.00	12.03	16.37
Required WTI Price	**76.76**	**102.75**	**136.29**	**165.16**	**218.36**	**153.29**	**134.70**	**68.82**	**68.82**	**63.57**	**78.88**	**70.37**	**97.45**

Source: BMO Capital Markets, Company Reports

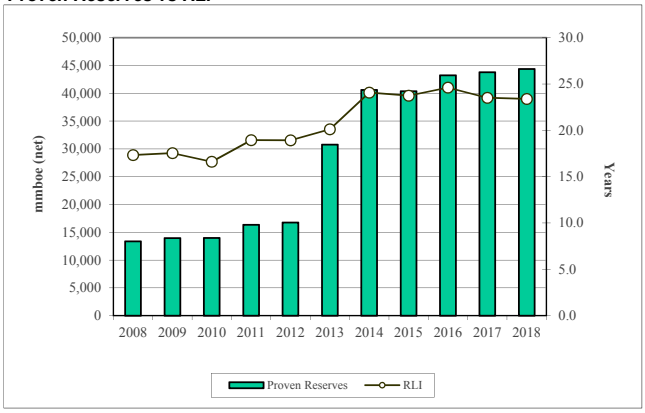
Rosneft OAO (ROSN - LN)

US$, net

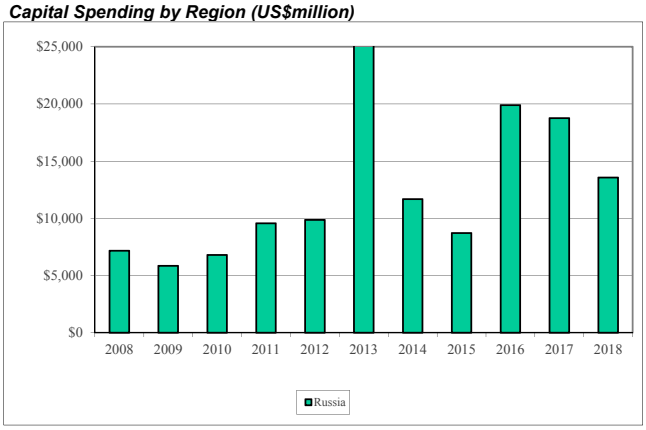
- Rosneft's results from operations improved to $6.82/boe in 2018 compared to results of $3.81/boe in 2017.
- F&D costs came in at $5.49/boe, down from $7.73/boe in 2017. On a realized oil:gas price ratio basis, F&D costs lowered to $6.80/boe from $9.36/boe while costs for PD reserves also decreased to $7.32/boe in 2018 from $9.94/boe last year.
- The company's 2018 operations imply a required Brent breakeven oil price of $77.29/boe on a realized ratio basis on total proved reserves, while its PD costs imply a Brent breakeven oil price of $78.45/boe.
- Rosneft reported ROCE of 10.4% in 2018 versus 6.1% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

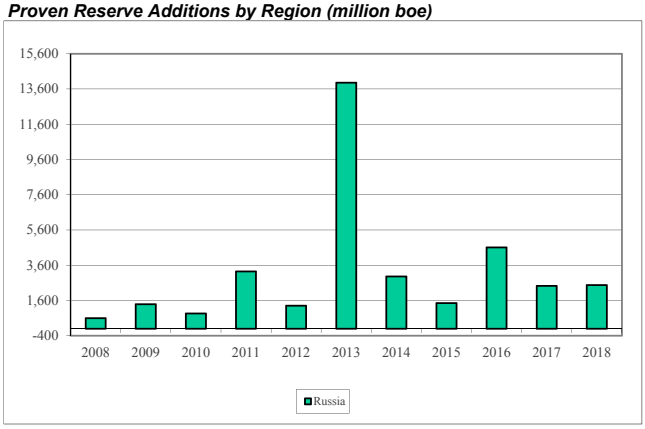
Proven Reserves vs RLI



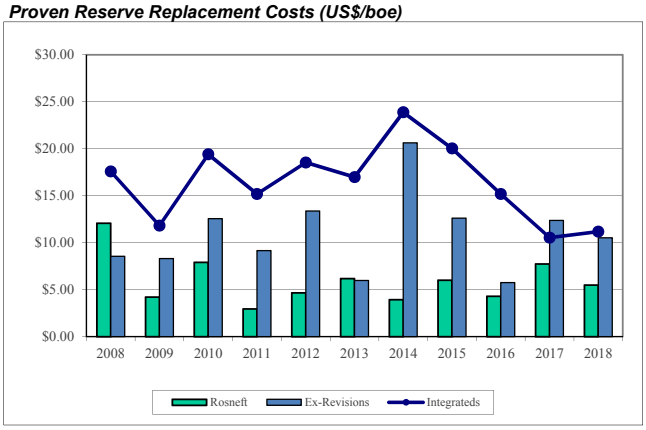
Capital Spending by Region (US$million)



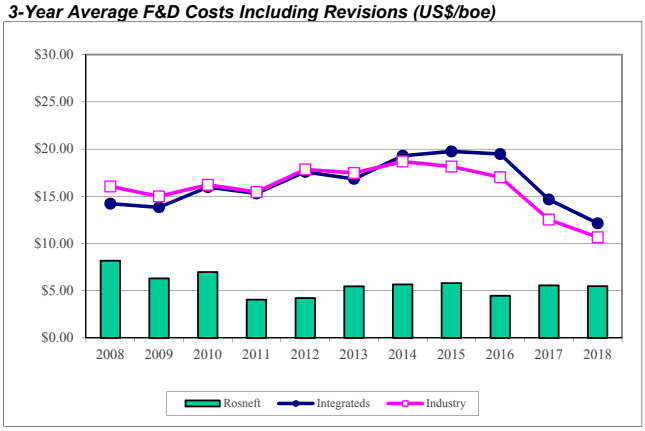
Proven Reserve Additions by Region (million boe)



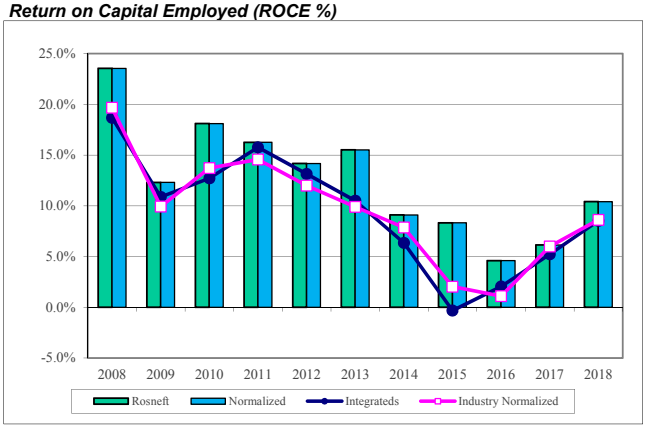
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



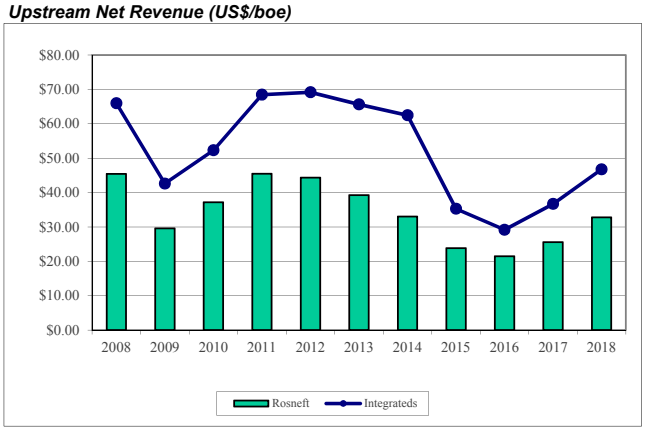
Source: BMO Capital Markets, Company Reports

Rosneft OAO (ROSN - LN)

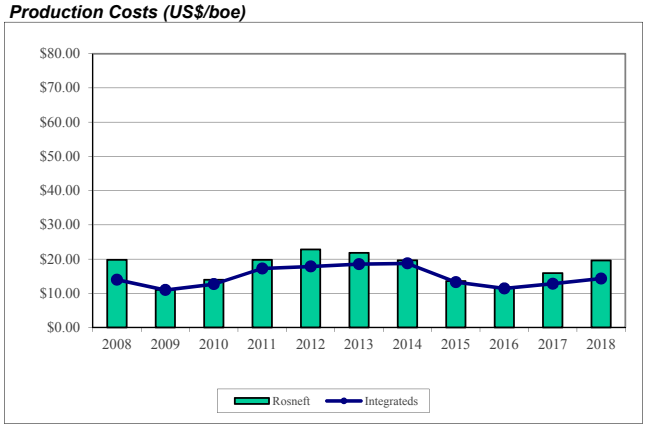
US$/boe, net

Worldwide

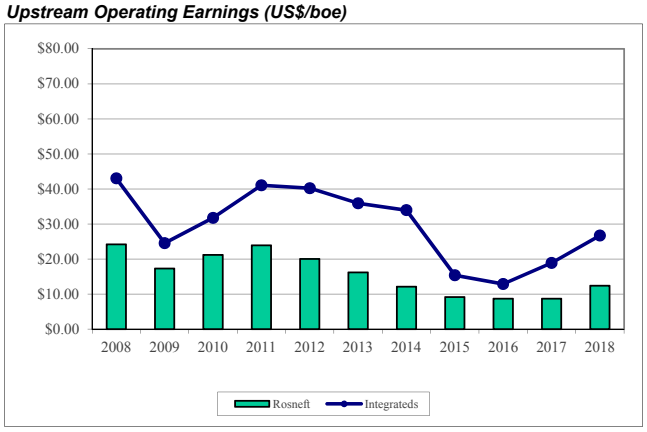
Upstream Net Revenue (US$/boe)



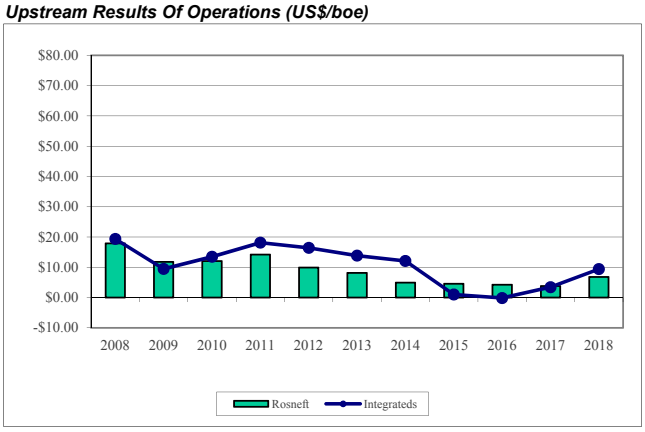
Production Costs (US$/boe)



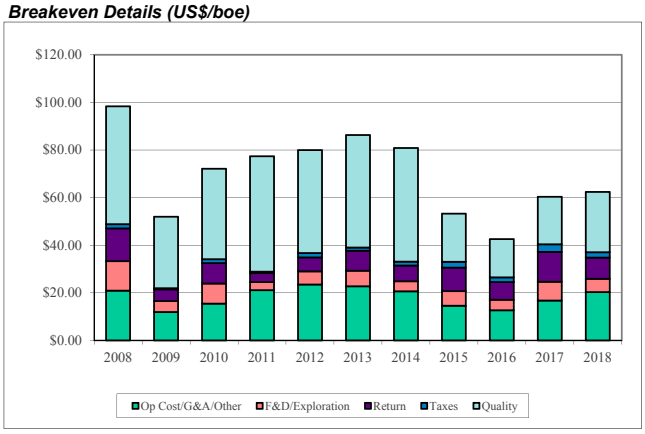
Upstream Operating Earnings (US$/boe)



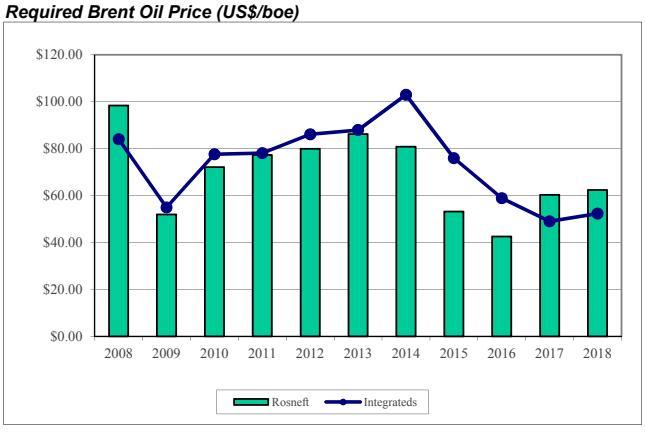
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



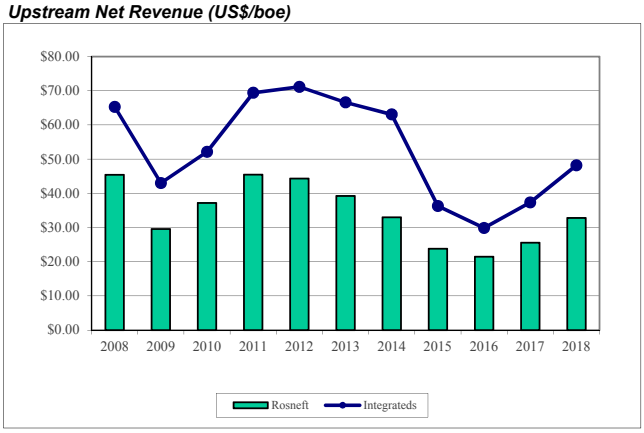
Source: BMO Capital Markets, Company Reports

Rosneft OAO (ROSN - LN)

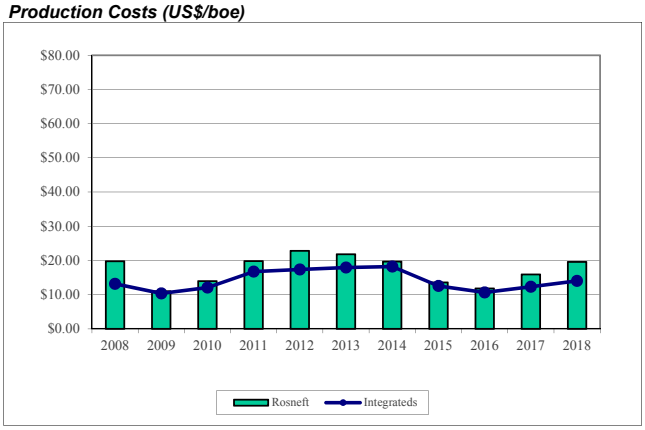
US$/boe, net

Total International

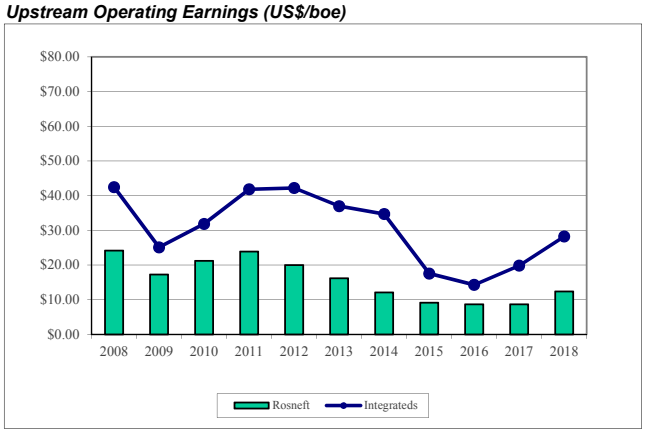
Upstream Net Revenue (US$/boe)



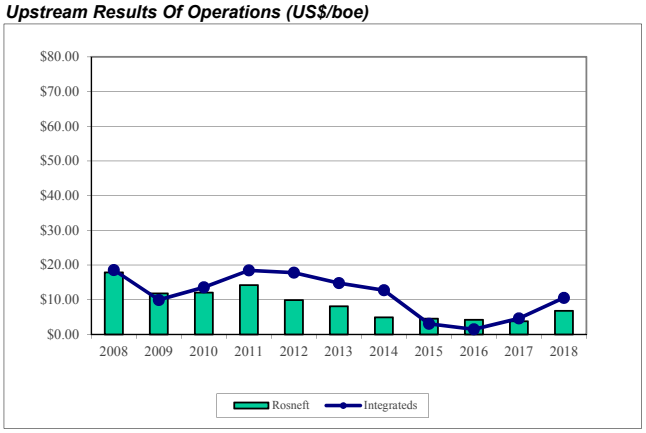
Production Costs (US$/boe)



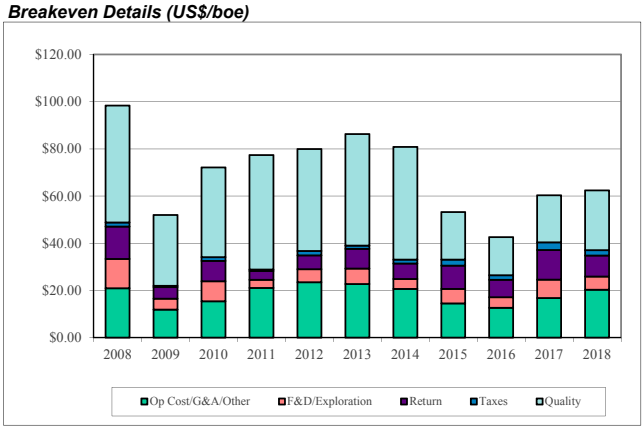
Upstream Operating Earnings (US$/boe)



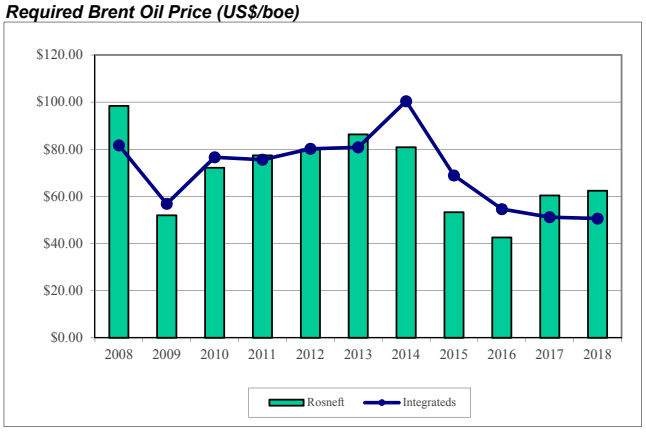
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Rosneft OAO (ROSN - LN)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	36,102	24,820	34,767	47,551	49,320	76,416	73,783	40,515	37,974	48,226	63,196
Midstream / Downstream Revenue	31,470	20,736	26,660	44,750	49,773	70,911	67,647	42,095	35,031	40,901	45,881
Other	1,794	1,786	2,167	1,401	3,555	7,991	3,302	1,287	1,509	2,078	2,188
Total Revenue and Other Income	69,366	47,342	63,594	93,701	102,648	155,318	144,732	83,896	74,514	91,204	111,264
Costs and Expenses:											
Crude Oil and Product Purchases	2,942	1,890	2,386	10,180	10,310	13,591	12,869	8,634	9,172	12,693	14,843
Production and Transportation Expenses	25,055	17,499	22,692	30,846	37,491	56,785	55,506	39,000	36,301	47,346	32,131
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	248	325	439	444	743	535	494	212	209	227	149
General and Administrative	1,632	1,416	1,584	1,776	2,198	3,492	2,964	2,118	1,927	2,608	2,256
Depreciation, Depletion and Amortization	3,983	4,350	5,597	6,593	6,658	12,332	12,063	7,331	7,200	8,887	8,576
Interest, net	1,112	605	580	(34)	(291)	1,101	4,914	3,486	1,524	1,790	2,269
Other	21,275	12,738	17,000	29,378	30,381	47,568	43,495	15,623	13,445	11,662	39,803
Earnings Before Income Tax	13,119	8,519	13,316	14,518	15,158	19,914	12,427	7,494	4,736	5,990	11,237
Income Taxes:											
Current Income Taxes	1,904	2,000	2,644	3,245	3,684	1,133	5,668	1,825	523	1,820	2,364
Future Income Taxes	-	-	-	(171)	(323)	1,416	(2,340)	(130)	1,210	(334)	108
Total Income Taxes	1,904	2,000	2,644	3,074	3,361	2,548	3,328	1,694	1,733	1,486	2,472
Minority Interest	(95)	(5)	(272)	(137)	(65)	(189)	(52)	(16)	(299)	-	-
Earnings From Continuing Operations	11,120	6,514	10,400	11,307	11,732	17,177	9,047	5,783	2,704	4,504	8,766
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	(40)	18	2	-	-	-	-	-	-	-	-
Net Earnings	11,080	6,532	10,402	11,307	11,732	17,177	9,047	5,783	2,704	4,504	8,766
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	11,080	6,532	10,402	11,307	11,732	17,177	9,047	5,783	2,704	4,504	8,766

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	11,215	6,519	10,672	11,307	11,732	17,177	9,047	5,783	2,704	4,504	8,766
Charges and Credits Not Impacting Cash	2,601	4,244	5,331	9,804	10,342	15,164	15,443	9,123	9,277	10,373	11,048
Other	(1,446)	(555)	(47)	(1,810)	(5,753)	9,060	5,408	17,724	1,255	(4,155)	149
Cash Flow From Operations	12,370	10,208	15,956	19,300	16,322	41,401	29,898	32,630	13,236	10,722	19,962
Change in Working Capital / Other	2,023	111	(784)	(2,664)	517	(3,240)	12,375	3,128	(3,794)	(5,611)	324
Net Cash From Operating Activities	14,393	10,319	15,172	16,636	16,839	38,161	42,273	35,758	9,441	5,111	20,286
Total Capital Expenditures	(8,732)	(7,252)	(8,931)	(13,357)	(15,287)	(17,618)	(13,857)	(9,693)	(10,591)	(13,982)	(12,642)
Acquisitions, net	(47)	(96)	(140)	(6,627)	(5,591)	(54,803)	(2,418)	(1,238)	(5,288)	(6,506)	(311)
Other	(2,043)	(1,440)	(3,368)	6,525	6,270	2,580	(9,177)	(2,313)	1,344	2,866	2,161
Net Cash From Investing Activities	(10,822)	(8,788)	(12,439)	(13,459)	(14,609)	(69,841)	(25,452)	(13,244)	(14,535)	(17,622)	(10,791)
Financing Activities:											
Net Change in Debt	(2,536)	(246)	170	307	8,080	32,435	(9,385)	(12,544)	9,232	5,247	608
Net Change in Common Stock	-	(5)	13	(102)	(2,424)	3,052	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(516)	(622)	(730)	(922)	(2,295)	(2,674)	(3,536)	(1,417)	(1,867)	(1,577)	(3,039)
Other	(22)	(4)	(11)	(1,196)	(1,002)	(2,360)	(7,202)	(3,812)	2,973	2,108	(648)
Net Cash From Financing Activities	(3,074)	(877)	(558)	(1,913)	2,359	30,453	(20,123)	(17,773)	10,338	5,778	(3,079)
Effect of Exchange Rate on Cash	(126)	(26)	(18)	68	(291)	472	1,768	847	(1,793)	(364)	473
Net Increase/(Decrease) in Cash	371	628	2,157	1,332	4,299	(755)	(1,534)	5,588	3,451	(7,097)	6,888
Cash and Equivalents, Beginning of Year	998	1,369	1,997	4,154	5,486	9,785	9,030	7,496	13,084	16,534	9,437
Cash and Equivalents, End of Year	1,369	1,997	4,154	5,486	9,785	9,030	7,496	13,084	16,534	9,437	16,325

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Rosneft OAO (ROSN - LN)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	12,807	15,169	23,043	28,626	30,672	45,774	55,402	39,162	34,359	34,759	40,816
Net Property, Plant and Equipment	55,204	57,704	61,190	80,993	84,969	167,682	147,306	96,033	105,915	120,155	114,060
Other Assets	9,502	10,359	9,596	8,677	12,702	23,689	24,412	21,813	24,499	30,513	22,907
Total Assets	77,513	83,232	93,829	118,296	128,343	237,145	227,120	157,008	164,773	185,426	177,782
Liabilities and Stockholders' Equity											
Total Current Liabilities	18,697	13,443	11,693	15,133	14,641	43,635	52,802	29,600	41,425	58,174	38,817
Long-term Debt	10,081	15,669	18,057	20,359	27,052	52,727	56,936	37,191	28,592	27,040	44,219
Deferred Income Taxes	5,371	5,197	4,908	8,233	8,532	20,764	15,443	9,432	11,727	12,329	11,305
Other Liabilities and Deferred Credits	3,766	3,386	3,667	2,699	3,070	20,449	27,038	33,070	27,367	24,446	20,273
Total Liabilities	37,915	37,695	38,325	46,423	53,296	137,575	152,220	109,293	109,111	121,990	114,614
Minority Interests	695	706	969	1,230	1,260	1,227	234	700	6,229	8,553	8,428
Stockholders' Equity											
Common Shares	20	20	20	34	32	31	26	16	15	15	14
Contributed Surplus (Paid-in Capital)	13,108	13,108	13,110	13,186	12,443	15,006	12,817	8,259	9,008	9,509	8,549
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	33,336	39,250	48,936	65,246	71,169	83,747	74,823	51,250	47,833	50,243	48,757
Other / Comprehensive Income (Loss)	(7,561)	(7,547)	(7,531)	(7,823)	(9,858)	(440)	(12,999)	(12,511)	(7,424)	(4,883)	(2,580)
Total Shareholders' Equity	38,903	44,831	54,535	70,643	73,787	98,344	74,667	47,015	49,432	54,883	54,741
Total Liabilities and Shareholders' Equity	77,513	83,232	93,829	118,296	128,343	237,145	227,120	157,008	164,773	185,426	177,782
Return on Capital Employed (ROCE)	**23.5%**	**12.3%**	**18.1%**	**16.3%**	**14.2%**	**15.5%**	**9.1%**	**8.3%**	**4.6%**	**6.1%**	**10.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	35,020	23,519	31,260	39,250	39,236	60,057	55,688	40,482	37,720	47,589	62,169	147,478	243,648
Production Costs	15,237	8,736	11,719	17,080	20,168	33,379	33,148	23,084	20,765	29,618	37,115	87,498	143,729
Exploration	248	325	462	444	743	535	494	212	209	227	216	653	1,358
DD&A	3,060	3,318	5,810	6,285	6,205	10,350	9,957	5,848	5,856	7,249	7,239	20,344	36,150
G&A/Other	891	717	1,254	1,093	614	1,384	1,638	1,629	1,494	1,577	1,337	4,408	7,675
Pre-tax Results Of Operations	15,584	10,423	12,016	14,347	11,506	14,409	10,451	9,709	9,396	8,917	16,261	34,575	54,735
Income Taxes	1,779	1,029	1,882	2,084	2,747	1,951	2,106	1,955	1,957	1,820	3,323	7,099	11,160
Results Of Operations	13,805	9,394	10,134	12,263	8,759	12,458	8,345	7,754	7,439	7,097	12,939	27,476	43,575

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	35,020	23,519	31,260	39,250	39,236	60,057	55,688	40,482	37,720	47,589	62,169	147,478	243,648
Production Costs	15,237	8,736	11,719	17,080	20,168	33,379	33,148	23,084	20,765	29,618	37,115	87,498	143,729
Exploration	248	325	462	444	743	535	494	212	209	227	216	653	1,358
DD&A	3,060	3,318	5,810	6,285	6,205	10,350	9,957	5,848	5,856	7,249	7,239	20,344	36,150
G&A/Other	891	717	1,254	1,093	614	1,384	1,638	1,629	1,494	1,577	1,337	4,408	7,675
Pre-tax Results Of Operations	15,584	10,423	12,016	14,347	11,506	14,409	10,451	9,709	9,396	8,917	16,261	34,575	54,735
Income Taxes	1,779	1,029	1,882	2,084	2,747	1,951	2,106	1,955	1,957	1,820	3,323	7,099	11,160
Results Of Operations	13,805	9,394	10,134	12,263	8,759	12,458	8,345	7,754	7,439	7,097	12,939	27,476	43,575

Notes: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Rosneft OAO (ROSN - LN)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$45.42	$29.58	$37.17	$45.48	$44.34	$39.25	$33.01	$23.81	$21.48	$25.56	$32.79	$26.75	$27.37
Production Costs	$19.76	$10.99	$13.93	$19.79	$22.79	$21.82	$19.65	$13.58	$11.82	$15.91	$19.58	$15.87	$16.15
Exploration	$0.32	$0.41	$0.55	$0.51	$0.84	$0.35	$0.29	$0.12	$0.12	$0.12	$0.11	$0.12	$0.15
DD&A	$3.97	$4.17	$6.91	$7.28	$7.01	$6.76	$5.90	$3.44	$3.33	$3.89	$3.82	$3.69	$4.06
G&A/Other	$1.16	$0.90	$1.49	$1.27	$0.69	$0.90	$0.97	$0.96	$0.85	$0.85	$0.71	$0.80	$0.86
Pre-tax Results Of Operations	$20.21	$13.11	$14.29	$16.62	$13.00	$9.42	$6.20	$5.71	$5.35	$4.79	$8.58	$6.27	$6.15
Income Taxes	$2.31	$1.29	$2.24	$2.41	$3.10	$1.27	$1.25	$1.15	$1.11	$0.98	$1.75	$1.29	$1.25
Results Of Operations	$17.91	$11.82	$12.05	$14.21	$9.90	$8.14	$4.95	$4.56	$4.24	$3.81	$6.82	$4.98	$4.90

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$45.42	$29.58	$37.17	$45.48	$44.34	$39.25	$33.01	$23.81	$21.48	$25.56	$32.79	$26.75	$27.37
Production Costs	$19.76	$10.99	$13.93	$19.79	$22.79	$21.82	$19.65	$13.58	$11.82	$15.91	$19.58	$15.87	$16.15
Exploration	$0.32	$0.41	$0.55	$0.51	$0.84	$0.35	$0.29	$0.12	$0.12	$0.12	$0.11	$0.12	$0.15
DD&A	$3.97	$4.17	$6.91	$7.28	$7.01	$6.76	$5.90	$3.44	$3.33	$3.89	$3.82	$3.69	$4.06
G&A/Other	$1.16	$0.90	$1.49	$1.27	$0.69	$0.90	$0.97	$0.96	$0.85	$0.85	$0.71	$0.80	$0.86
Pre-tax Results Of Operations	$20.21	$13.11	$14.29	$16.62	$13.00	$9.42	$6.20	$5.71	$5.35	$4.79	$8.58	$6.27	$6.15
Income Taxes	$2.31	$1.29	$2.24	$2.41	$3.10	$1.27	$1.25	$1.15	$1.11	$0.98	$1.75	$1.29	$1.25
Results Of Operations	$17.91	$11.82	$12.05	$14.21	$9.90	$8.14	$4.95	$4.56	$4.24	$3.81	$6.82	$4.98	$4.90

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Russia													
Net Revenue	$45.42	$29.58	$37.17	$45.48	$44.34	$39.25	$33.01	$23.81	$21.48	$25.56	$32.79	$26.75	$27.37
Production Costs	$19.76	$10.99	$13.93	$19.79	$22.79	$21.82	$19.65	$13.58	$11.82	$15.91	$19.58	$15.87	$16.15
Exploration	$0.32	$0.41	$0.55	$0.51	$0.84	$0.35	$0.29	$0.12	$0.12	$0.12	$0.11	$0.12	$0.15
DD&A	$3.97	$4.17	$6.91	$7.28	$7.01	$6.76	$5.90	$3.44	$3.33	$3.89	$3.82	$3.69	$4.06
G&A/Other	$1.16	$0.90	$1.49	$1.27	$0.69	$0.90	$0.97	$0.96	$0.85	$0.85	$0.71	$0.80	$0.86
Pre-tax Results Of Operations	$20.21	$13.11	$14.29	$16.62	$13.00	$9.42	$6.20	$5.71	$5.35	$4.79	$8.58	$6.27	$6.15
Income Taxes	$2.31	$1.29	$2.24	$2.41	$3.10	$1.27	$1.25	$1.15	$1.11	$0.98	$1.75	$1.29	$1.25
Results Of Operations	$17.91	$11.82	$12.05	$14.21	$9.90	$8.14	$4.95	$4.56	$4.24	$3.81	$6.82	$4.98	$4.90

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

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Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	938.7	1,048.3	1,319.9	2,780.5	3,705.7	6,465.3	7,000.4	7,054.4	7,286.7	7,726.6	7,867.7	7,627.0	7,387.2
Liquids Production (b/d)	1,955,871	2,003,358	2,084,129	1,900,967	1,807,040	3,114,223	3,455,182	3,481,807	3,596,502	3,813,603	3,883,239	3,764,448	3,646,067
Total Production (boe/d)	2,112,329	2,178,082	2,304,110	2,364,384	2,424,658	4,191,781	4,621,918	4,657,534	4,810,959	5,101,370	5,194,521	5,035,616	4,877,260
% Gas Production	7%	8%	10%	20%	25%	26%	25%	25%	25%	25%	25%	25%	25%
% Oil Production	93%	92%	90%	80%	75%	74%	75%	75%	75%	75%	75%	75%	75%
Proven Reserves:													
Gas Reserves (bcf)	42,169.1	42,453.6	42,464.5	45,265.7	45,909.1	65,074.8	61,503.9	61,128.3	65,457.0	66,311.3	67,185.2	66,317.8	64,317.1
Oil Reserves (mmbbls)	6,331.8	6,875.4	6,892.6	8,807.7	9,094.5	19,932.2	30,356.4	30,171.0	32,307.5	32,729.1	33,160.5	32,732.4	31,744.9
Total Proven Reserves (mmboe)	13,360.0	13,951.0	13,970.0	16,352.0	16,746.0	30,778.0	40,607.0	40,359.0	43,217.0	43,781.0	44,358.0	43,785.3	42,464.4
% Gas Reserves	53%	51%	51%	46%	46%	35%	25%	25%	25%	25%	25%	25%	25%
% Oil Reserves	47%	49%	49%	54%	54%	65%	75%	75%	75%	75%	75%	75%	75%
Proven Reserve Life Index	17.3	17.5	16.6	18.9	18.9	20.1	24.1	23.7	24.6	23.5	23.4	23.8	23.9
Proven Reserve Additions:													
Gas Additions (bcf)	263.5	667.1	492.6	3,816.1	1,996.0	21,525.5	4,489.3	2,199.2	6,988.4	3,674.5	3,745.6	14,408.5	21,097.0
Oil Additions (mmbbls)	549.1	1,274.8	777.9	2,609.0	973.3	10,368.4	2,215.8	1,085.5	3,449.3	1,813.6	1,848.7	7,111.6	10,412.8
Total Additions (mmboe)	593.0	1,386.0	860.0	3,245.0	1,306.0	13,956.0	2,964.0	1,452.0	4,614.0	2,426.0	2,473.0	9,513.0	13,929.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	837.0	703.0	541.0	1,044.0	736.0	1,330.0	566.0	691.0	1,067.0	1,047.0	1,290.0	3,404.0	4,661.0
Acquisitions	0.0	0.0	0.0	0.0	1.0	13,063.0	0.0	0.0	2,388.0	470.0	0.0	2,858.0	2,858.0
Dispositions	-	-	0.0	0.0	-806.0	0.0	0.0	0.0	-10.0	0.0	0.0	(10.0)	(10.0)
Revisions of Estimates	-244.0	683.0	319.0	2,201.0	1,375.0	-437.0	2,398.0	761.0	1,169.0	909.0	1,183.0	3,261.0	6,420.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	141.1%	50.7%	62.9%	32.2%	56.4%	9.5%	19.1%	47.6%	23.1%	43.2%	52.2%	35.8%	33.5%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.1%	93.6%	0.0%	0.0%	51.8%	19.4%	0.0%	30.0%	20.5%
Dispositions	0.0%	0.0%	0.0%	0.0%	-61.7%	0.0%	0.0%	0.0%	-0.2%	0.0%	0.0%	-0.1%	-0.1%
Revisions of Estimates	-41.1%	49.3%	37.1%	67.8%	105.3%	-3.1%	80.9%	52.4%	25.3%	37.5%	47.8%	34.3%	46.1%
Additions as % of Production:													
Gas	76.9%	174.3%	102.3%	376.0%	147.6%	912.2%	175.7%	85.4%	262.8%	130.3%	130.4%	172.5%	156.5%
Oil	76.9%	174.3%	102.3%	376.0%	147.6%	912.2%	175.7%	85.4%	262.8%	130.3%	130.4%	172.5%	156.5%
Total	76.9%	174.3%	102.3%	376.0%	147.6%	912.2%	175.7%	85.4%	262.8%	130.3%	130.4%	172.5%	156.5%
Additions as % of Reserves:													
Gas	0.6%	1.6%	1.2%	8.4%	4.3%	33.1%	7.3%	3.6%	10.7%	5.5%	5.6%	21.7%	32.8%
Oil	8.7%	18.5%	11.3%	29.6%	10.7%	52.0%	7.3%	3.6%	10.7%	5.5%	5.6%	21.7%	32.8%
Total	4.4%	9.9%	6.2%	19.8%	7.8%	45.3%	7.3%	3.6%	10.7%	5.5%	5.6%	21.7%	32.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$248.0	$325.0	$462.1	$444.1	$743.4	$755.0	$702.0	$260.6	$448.2	$682.4	$540.2	$1,670.8	$2,633.4
Development	$6,405.0	$5,422.0	$6,205.9	$8,881.6	$8,920.3	$10,853.7	$9,853.3	$8,243.0	$9,276.9	$13,284.8	$12,844.4	$35,406.1	$53,502.4
Acquisitions	$510.0	$96.0	$132.0	$239.1	$193.9	$74,591.7	$1,117.9	$211.8	$10,173.2	$4,792.2	$189.1	$15,154.5	$16,484.2
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Other	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$7,163.0	$5,843.0	$6,800.1	$9,564.8	$9,857.6	$86,200.4	$11,673.2	$8,715.4	$19,898.2	$18,759.5	$13,573.7	$52,231.4	$72,620.1
Expenditures as % of Total:													
Exploration	3.5%	5.6%	6.8%	4.6%	7.5%	0.9%	6.0%	3.0%	2.3%	3.6%	4.0%	3.2%	3.6%
Development	89.4%	92.8%	91.3%	92.9%	90.5%	12.6%	84.4%	94.6%	46.6%	70.8%	94.6%	67.8%	73.7%
Acquisitions	7.1%	1.6%	1.9%	2.5%	2.0%	86.5%	9.6%	2.4%	51.1%	25.5%	1.4%	29.0%	22.7%
Cashflow (US$million)	$16,865.0	$12,712.0	$15,943.8	$18,548.9	$14,964.2	$22,808.5	$18,302.7	$13,602.6	$13,295.3	$14,346.4	$20,178.3	$47,820.0	$79,725.4
Cashflow (US$/boe)	$21.87	$15.99	$18.96	$21.49	$16.91	$14.91	$10.85	$8.00	$7.57	$7.70	$10.64	$8.67	$8.96
Recycle Ratio	1.8x	3.8x	2.4x	7.3x	3.6x	2.4x	2.8x	1.3x	1.8x	1.0x	1.9x	1.6x	1.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$11.22	$4.15	$7.75	$2.87	$4.58	$13.00	$3.56	$5.86	$4.35	$7.14	$5.41	$5.56	$5.07
Acquisition Costs	na	na	na	na	$193.92	$5.71	na	na	$4.26	$10.20	na	$5.30	$5.77
All Sources (incl. Revisions)	$12.08	$4.22	$7.91	$2.95	$4.67	$6.18	$3.94	$6.00	$4.30	$7.73	$5.49	$5.48	$5.21
Exploration & Development (excl. revisions)	$7.95	$8.17	$12.33	$8.93	$13.13	$8.73	$18.65	$12.31	$9.11	$13.34	$10.38	$10.89	$12.04
Acquisition Costs	na	na	na	na	$193.92	$5.71	na	na	$4.26	$10.20	na	$5.30	$5.77
All Sources (excl. revisions)	$8.56	$8.31	$12.57	$9.16	$13.38	$5.99	$20.62	$12.61	$5.76	$12.37	$10.52	$8.34	$9.66
Geographically Segmented Costs													
Russia	$12.08	$4.22	$7.91	$2.95	$4.67	$6.18	$3.94	$6.00	$4.30	$7.73	$5.49	$5.48	$5.21

Source: BMO Capital Markets, Company Reports

Rosneft OAO (ROSN - LN)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	19.76	10.99	13.93	19.79	22.79	21.82	19.65	13.58	11.82	15.91	15.91	15.87	16.15
Exploration Expense	0.32	0.41	0.55	0.51	0.84	0.35	0.29	0.12	0.12	0.12	0.12	0.12	0.15
G&A/Other	1.16	0.90	1.49	1.27	0.69	0.90	0.97	0.96	0.85	0.85	0.85	0.80	0.86
F&D Costs	12.08	4.22	7.91	2.95	4.67	6.18	3.94	6.00	4.30	7.73	7.73	5.48	5.21
Return on Capital	13.75	4.89	8.62	3.73	5.89	8.41	6.58	9.89	7.41	12.56	12.56	9.08	8.64
Income Taxes	1.77	0.54	1.60	0.63	1.85	1.32	1.66	2.49	1.95	3.22	3.22	2.35	2.21
Breakeven Oil Price	48.84	21.94	34.10	28.89	36.72	38.98	33.09	33.04	26.46	40.39	40.39	33.70	33.23
Quality Differential	49.53	30.03	38.02	48.46	43.23	47.28	47.74	20.21	16.12	19.98	19.98	20.47	25.87
Required WTI Price	98.37	51.96	72.12	77.35	79.95	86.26	80.83	53.25	42.57	60.37	60.37	54.17	59.10

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required WTI Price	na	na	na	na	na	na	na	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	19.76	10.99	13.93	19.79	22.79	21.82	19.65	13.58	11.82	15.91	15.91	15.87	16.15
Exploration Expense	0.32	0.41	0.55	0.51	0.84	0.35	0.29	0.12	0.12	0.12	0.12	0.12	0.15
G&A/Other	1.16	0.90	1.49	1.27	0.69	0.90	0.97	0.96	0.85	0.85	0.85	0.80	0.86
F&D Costs	12.08	4.22	7.91	2.95	4.67	6.18	3.94	6.00	4.30	7.73	7.73	5.48	5.21
Return on Capital	13.75	4.89	8.62	3.73	5.89	8.41	6.58	9.89	7.41	12.56	12.56	9.08	8.64
Income Taxes	1.77	0.54	1.60	0.63	1.85	1.32	1.66	2.49	1.95	3.22	3.22	2.35	2.21
Breakeven Oil Price	48.84	21.94	34.10	28.89	36.72	38.98	33.09	33.04	26.46	40.39	40.39	33.70	33.23
Quality Differential	49.53	30.03	38.02	48.46	43.23	47.28	47.74	20.21	16.12	19.98	19.98	20.47	25.87
Required WTI Price	98.37	51.96	72.12	77.35	79.95	86.26	80.83	53.25	42.57	60.37	60.37	54.17	59.10

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Russia													
Operating Costs	19.76	10.99	13.93	19.79	22.79	21.82	19.65	13.58	11.82	15.91	19.58	15.87	16.15
Exploration Expense	0.32	0.41	0.55	0.51	0.84	0.35	0.29	0.12	0.12	0.12	0.11	0.12	0.15
G&A/Other	1.16	0.90	1.49	1.27	0.69	0.90	0.97	0.96	0.85	0.85	0.71	0.80	0.86
F&D Costs	12.08	4.22	7.91	2.95	4.67	6.18	3.94	6.00	4.30	7.73	5.49	5.48	5.21
Return on Capital	13.75	4.89	8.62	3.73	5.89	8.41	6.58	9.89	7.41	12.56	8.89	9.08	8.64
Income Taxes	1.77	0.54	1.60	0.63	1.85	1.32	1.66	2.49	1.95	3.22	2.28	2.35	2.21
Breakeven Oil Price	48.84	21.94	34.10	28.89	36.72	38.98	33.09	33.04	26.46	40.39	37.06	33.70	33.23
Quality Differential	49.53	30.03	38.02	48.46	43.23	47.28	47.74	20.21	16.12	19.98	25.32	20.47	25.87
Required WTI Price	98.37	51.96	72.12	77.35	79.95	86.26	80.83	53.25	42.57	60.37	62.38	54.17	59.10

Source: BMO Capital Markets, Company Reports

Rosneft OAO (ROSN - LN)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.83	15.22	24.05	29.36	27.81	24.90	16.31	14.13	14.13	19.25	24.26	19.28	19.73
Exploration Expense	0.44	0.60	0.63	1.08	0.45	0.37	0.15	0.14	0.14	0.15	0.14	0.14	0.19
G&A/Other	0.97	1.63	1.54	0.89	1.15	1.23	1.15	1.02	1.02	1.03	0.87	0.97	1.05
F&D Costs (1-Year)	4.54	8.64	3.58	6.01	7.87	4.99	7.21	5.14	5.14	9.36	6.80	6.64	6.36
Return on Capital	2.96	5.41	3.07	5.66	9.46	8.38	11.86	8.85	8.85	15.26	11.00	10.97	10.54
Income Taxes	0.32	1.00	0.52	1.77	1.48	2.11	2.99	2.33	2.33	3.91	2.83	2.84	2.70
Breakeven Oil Price	**21.07**	**32.50**	**33.40**	**44.79**	**48.23**	**41.99**	**39.67**	**31.60**	**31.60**	**48.95**	**45.91**	**40.84**	**40.57**
Quality Differential	32.33	41.54	58.90	55.71	60.28	60.51	24.28	19.26	19.26	24.17	31.38	24.94	31.92
Required WTI Price	**53.40**	**74.04**	**92.29**	**100.50**	**108.51**	**102.50**	**63.95**	**50.86**	**50.86**	**73.13**	**77.29**	**65.78**	**72.49**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.83	15.22	24.05	29.36	27.81	24.90	16.31	14.13	14.13	19.25	24.26	19.28	19.73
Exploration Expense	0.44	0.60	0.63	1.08	0.45	0.37	0.15	0.14	0.14	0.15	0.14	0.14	0.19
G&A/Other	0.97	1.63	1.54	0.89	1.15	1.23	1.15	1.02	1.02	1.03	0.87	0.97	1.05
F&D Costs (1-Year)	4.94	8.54	3.02	6.70	13.33	6.93	3.83	8.78	8.78	9.94	7.32	8.70	7.36
Return on Capital	3.23	5.35	2.60	6.30	15.99	11.42	6.16	15.02	15.02	15.81	11.51	14.04	11.95
Income Taxes	0.35	0.99	0.44	1.98	2.50	2.88	1.55	3.95	3.95	4.05	2.96	3.63	3.06
Breakeven Oil Price	**21.77**	**32.33**	**32.28**	**46.31**	**61.24**	**47.74**	**29.16**	**43.05**	**43.05**	**50.23**	**47.07**	**46.76**	**43.35**
Quality Differential	32.33	41.54	58.90	55.71	60.28	60.51	24.28	19.26	19.26	24.17	31.38	24.94	31.92
Required WTI Price	**54.09**	**73.87**	**91.18**	**102.02**	**121.52**	**108.25**	**53.44**	**62.31**	**62.31**	**74.40**	**78.45**	**71.70**	**75.27**

Source: BMO Capital Markets, Company Reports

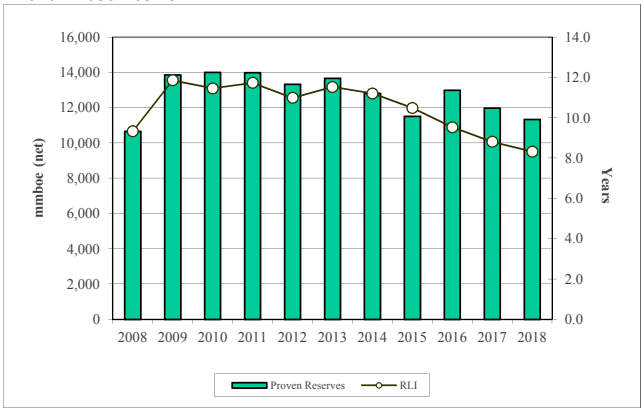
Royal Dutch Shell PLC (RDS - NYSE)

US$, net

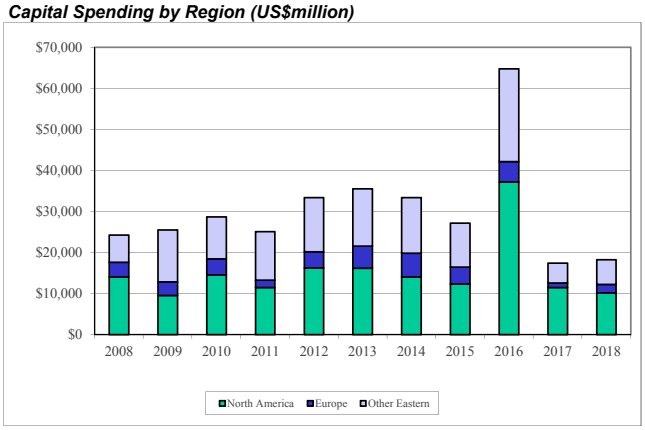
- Royal Dutch yielded results from operations of $7.95/boe compared to $2.26/boe in 2017.
- The company's one-year F&D costs were recorded at $19.92/boe in 2018 compared to $7.13/boe in 2017 and $22.58/boe in 2016. On a realized oil:gas price ratio basis, F&D costs rose to $20.02/boe from $8.34/boe, while costs for PD reserves increased to $25.28/boe from $7.38/boe last year.
- Royal Dutch's 2018 operations imply a required Brent breakeven oil price of $62.55/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a Brent breakeven of $73.47/boe.
- The company generated ROCE of 10.4% in 2018 versus 7.4% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

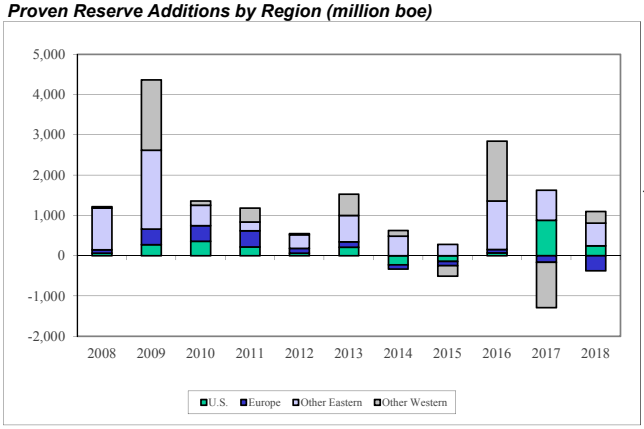
Proven Reserves vs RLI



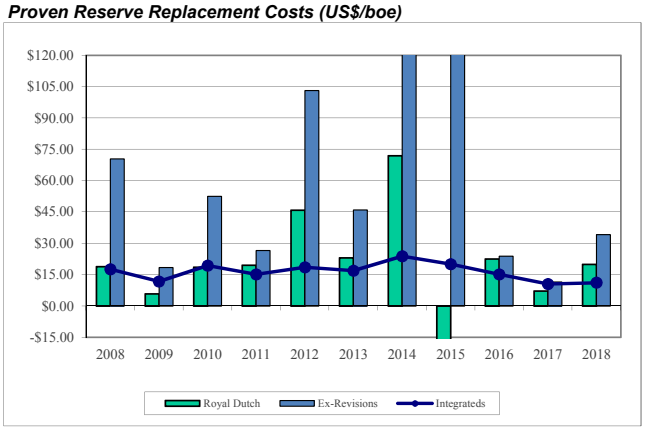
Capital Spending by Region (US$million)



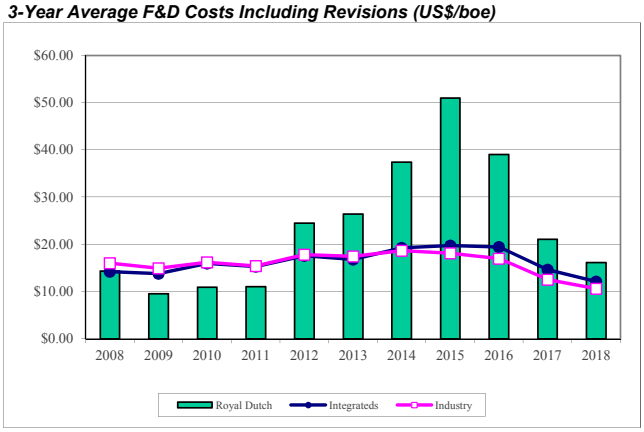
Proven Reserve Additions by Region (million boe)



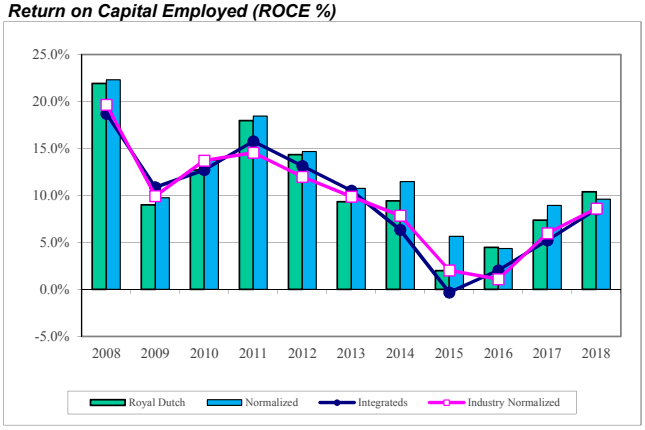
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



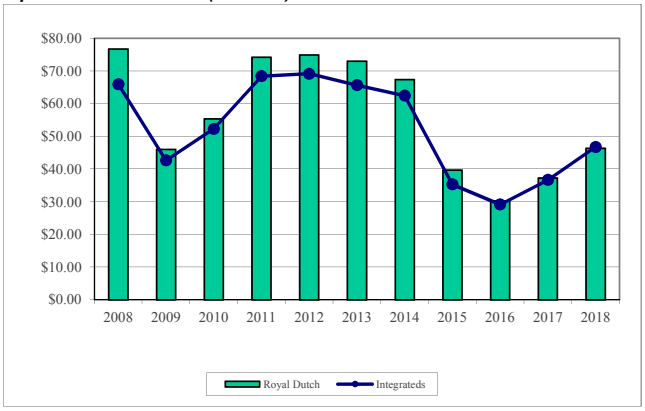
Source: BMO Capital Markets, Company Reports

Royal Dutch Shell PLC (RDS - NYSE)

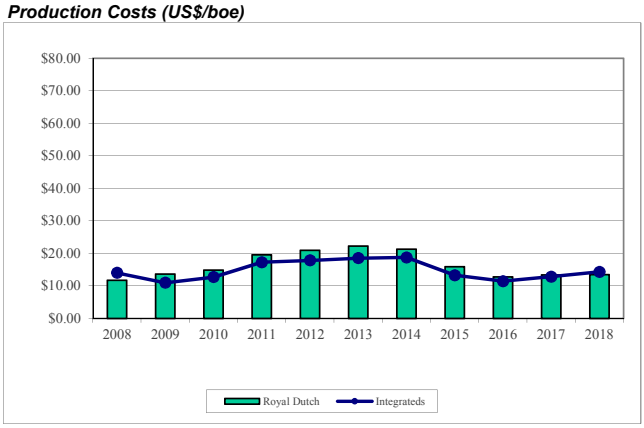
US$/boe, net

Worldwide

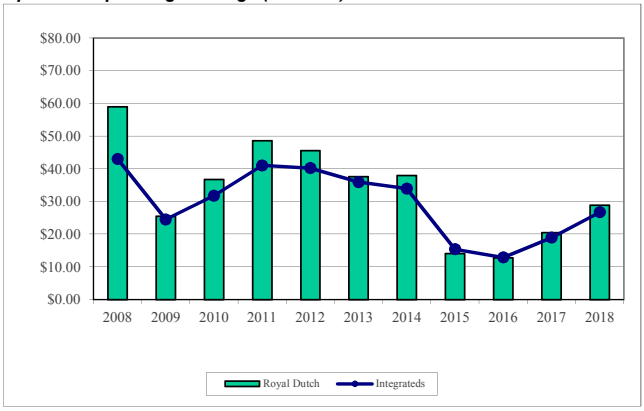
Upstream Net Revenue (US$/boe)



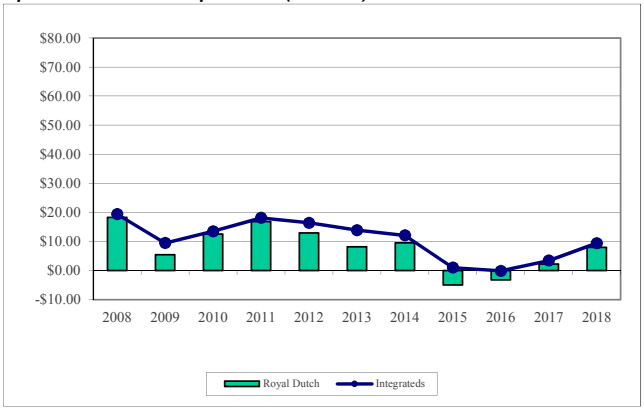
Production Costs (US$/boe)



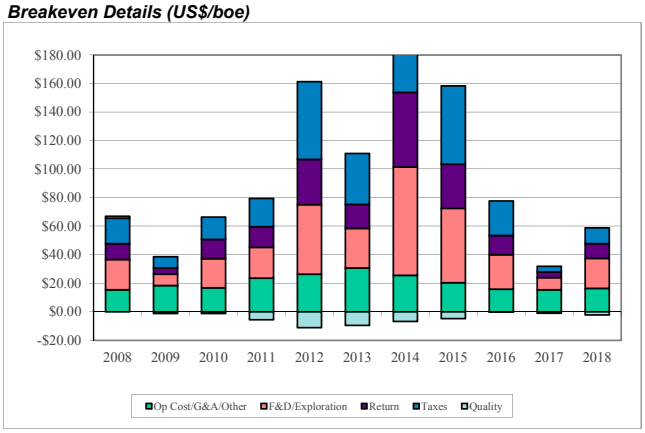
Upstream Operating Earnings (US$/boe)



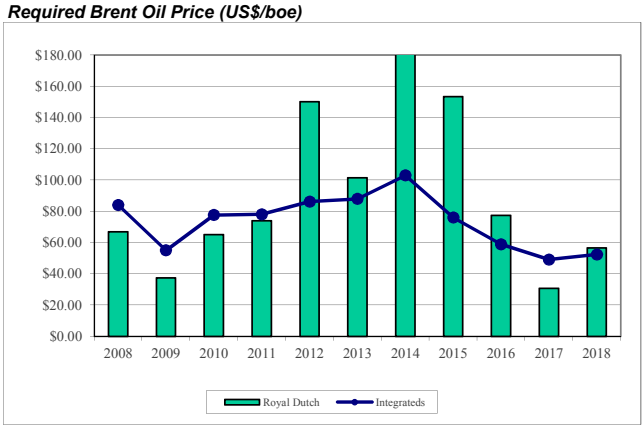
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

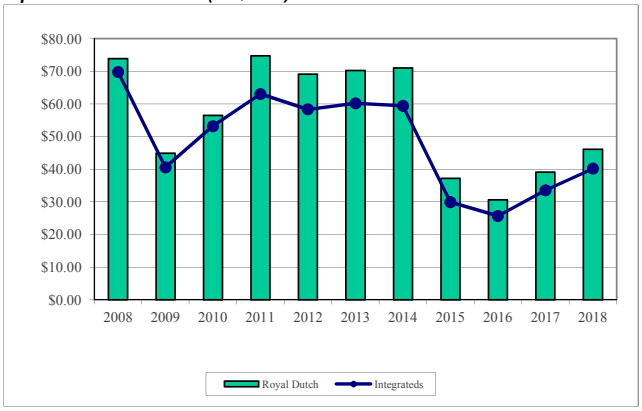
See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

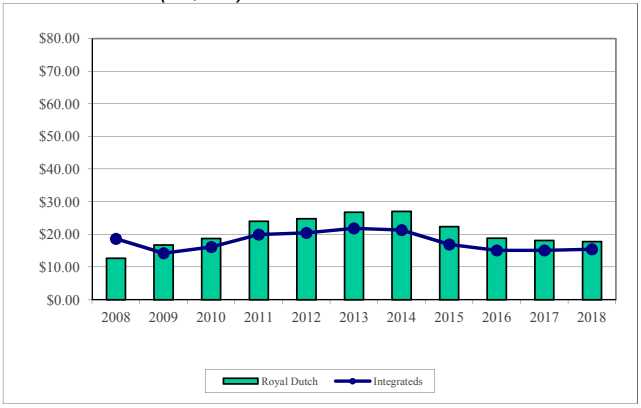
US$/boe, net

North America

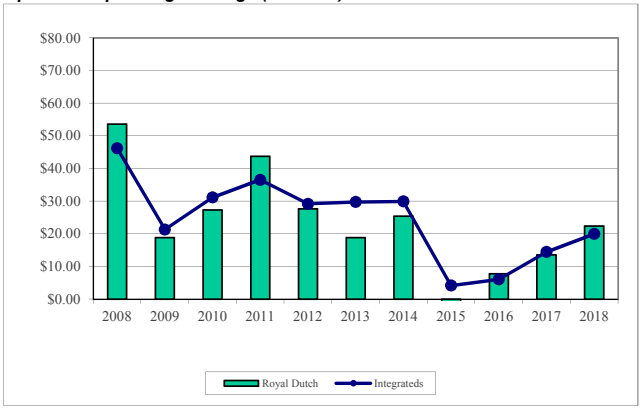
Upstream Net Revenue (US$/boe)



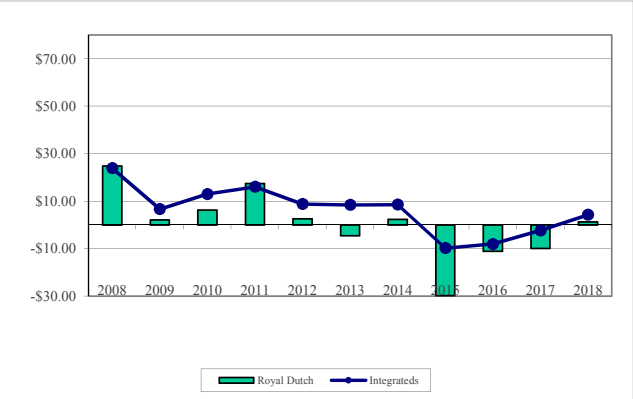
Production Costs (US$/boe)



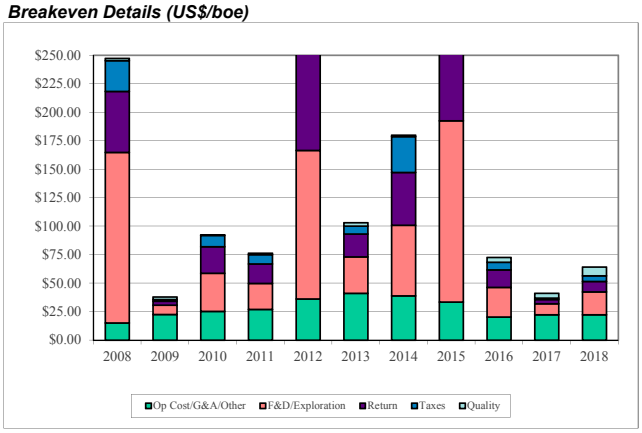
Upstream Operating Earnings (US$/boe)



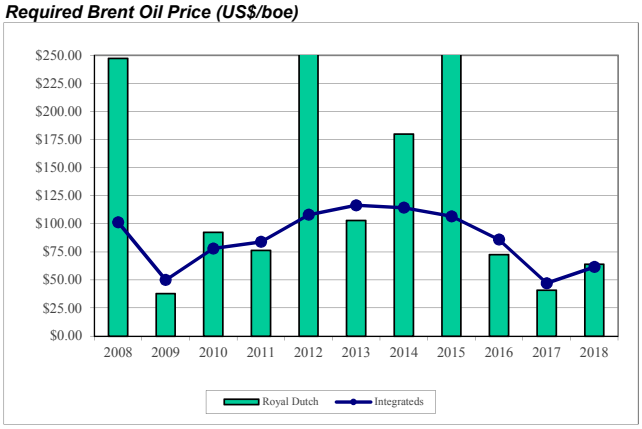
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

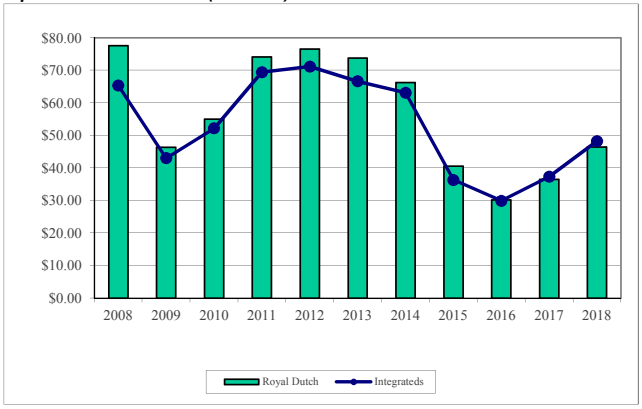
See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

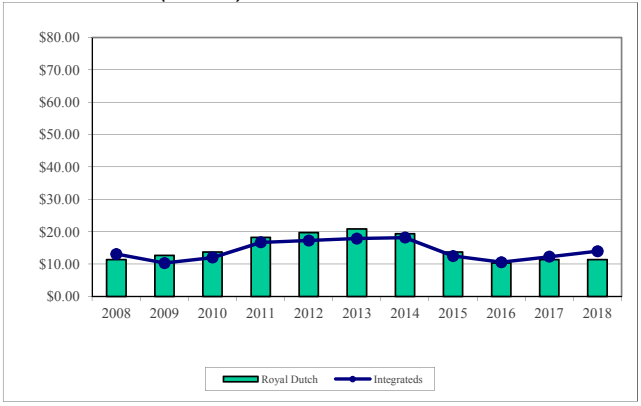
US$/boe, net

Total International

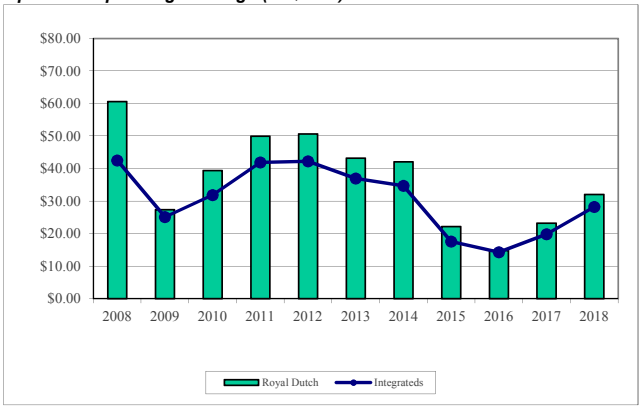
Upstream Net Revenue (US$/boe)



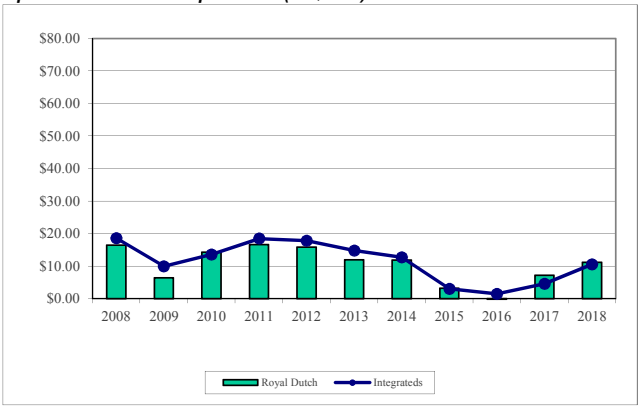
Production Costs (US$/boe)



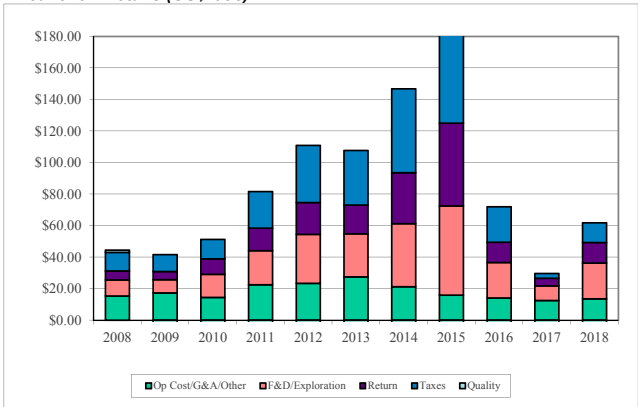
Upstream Operating Earnings (US$/boe)



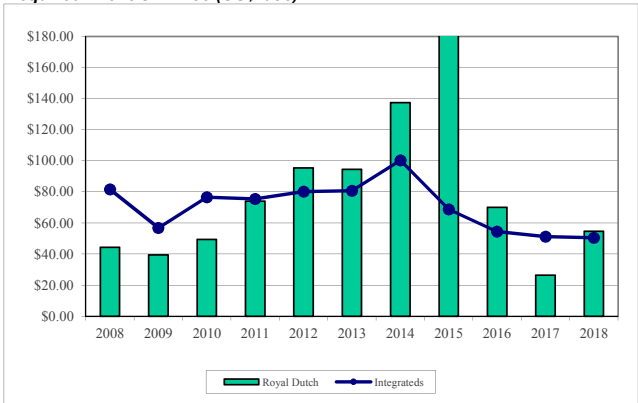
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

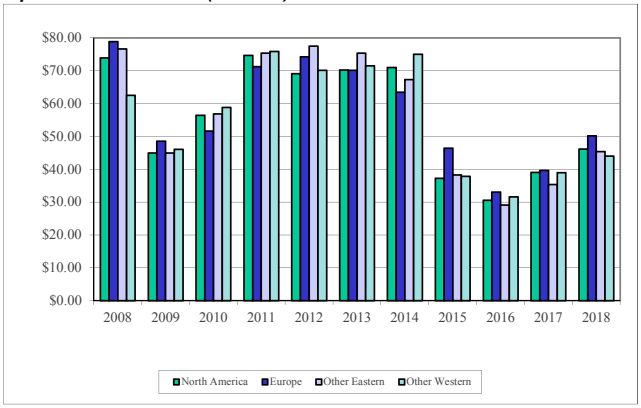
See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

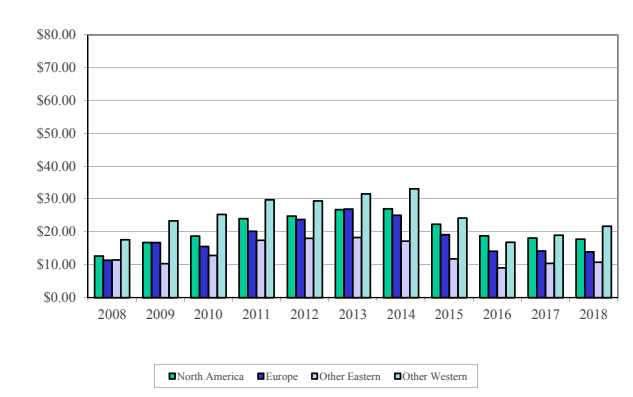
US$/boe, net

International Segments

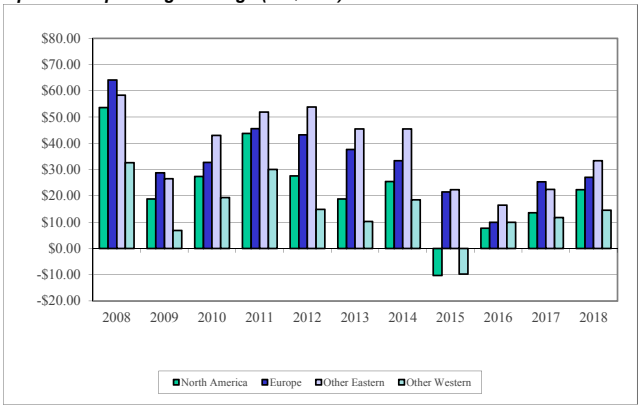
Upstream Net Revenue (US$/boe)



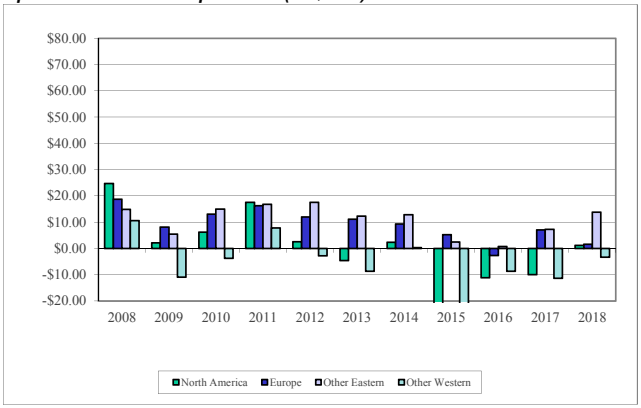
Production Costs (US$/boe)



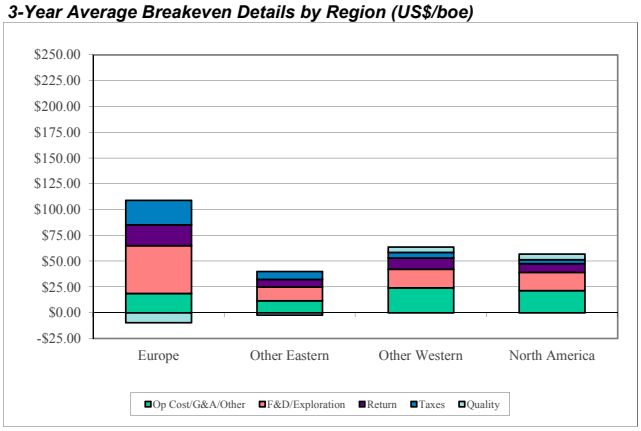
Upstream Operating Earnings (US$/boe)



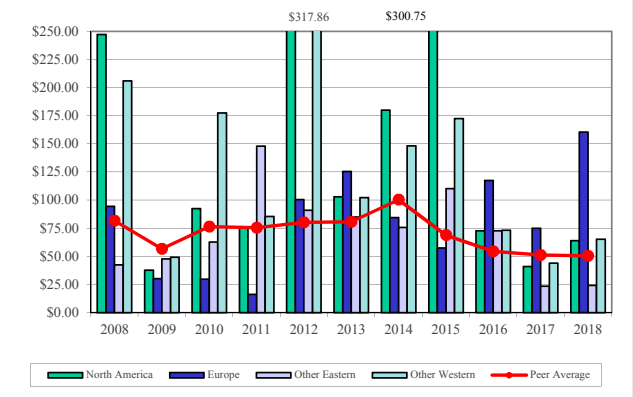
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	66,172	55,140	68,198	91,691	94,550	92,869	92,299	53,927	32,936	40,192	47,733
Midstream / Downstream Revenue	392,189	223,048	299,858	378,480	372,603	358,366	328,806	211,033	204,200	269,212	344,752
Other	5,133	1,965	4,143	5,581	5,599	1,089	4,123	3,669	2,897	2,466	4,071
Total Revenue and Other Income	463,494	280,153	372,199	475,752	472,752	452,324	425,228	268,629	240,033	311,870	396,556
Crude Oil and Product Purchases	359,587	203,075	283,176	370,044	369,725	353,199	327,278	194,644	162,574	223,447	294,399
Production and Transportation Expenses	25,565	25,301	24,458	26,458	26,280	28,386	30,038	28,095	28,434	26,652	26,970
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,995	2,178	2,036	2,266	3,104	5,278	4,224	5,719	2,108	1,945	1,340
General and Administrative	16,906	17,430	15,528	14,335	14,616	14,675	13,965	11,956	12,101	10,509	11,360
Depreciation, Depletion and Amortization	12,770	12,623	12,688	11,713	13,518	16,099	17,867	17,388	23,091	22,033	22,135
Interest, net	1,181	542	996	1,373	1,757	1,642	1,804	1,888	3,203	4,042	3,745
Other	(5,330)	(2,016)	(2,027)	(6,097)	(6,537)	(547)	1,738	6,892	2,916	5,112	986
Earnings Before Income Tax	50,820	21,020	35,344	55,660	50,289	33,592	28,314	2,047	5,606	18,130	35,621
Current Income Taxes	24,452	9,297	16,384	25,941	22,722	18,582	13,757	7,058	2,731	6,591	10,475
Future Income Taxes	(108)	(995)	(1,514)	(1,466)	727	(1,516)	(173)	(7,211)	(1,902)	(1,896)	1,240
Total Income Taxes	24,344	8,302	14,870	24,475	23,449	17,066	13,584	(153)	829	4,695	11,715
Minority Interest	(199)	(200)	(347)	(267)	(248)	155	144	(261)	(202)	(458)	(554)
Earnings From Continuing Operations	26,277	12,518	20,127	30,918	26,592	16,681	14,874	1,939	4,575	12,977	23,352
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	26,277	12,518	20,127	30,918	26,592	16,681	14,874	1,939	4,575	12,977	23,352
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	26,277	12,518	20,127	30,918	26,592	16,681	14,874	1,939	4,575	12,977	23,352

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	26,476	12,718	20,474	31,185	26,840	16,526	14,730	2,200	4,777	13,435	23,906
Charges and Credits Not Impacting Cash	11,740	10,752	11,776	13,868	15,671	13,398	16,147	11,561	22,268	18,115	23,158
Other	(2,233)	349	1,029	(1,811)	238	7,528	7,762	10,528	(141)	7,258	2,579
Cash Flow From Operations	35,983	23,819	33,279	43,242	42,749	37,452	38,639	24,289	26,904	38,808	49,643
Change in Working Capital / Other	7,935	(2,331)	(5,929)	(6,471)	3,391	2,988	6,405	5,521	(6,289)	(3,158)	3,442
Net Cash From Operating Activities	43,918	21,488	27,350	36,771	46,140	40,440	45,044	29,810	20,615	35,650	53,085
Total Capital Expenditures	(36,950)	(29,471)	(28,990)	(28,187)	(35,604)	(44,504)	(24,015)	(29,076)	(79,976)	(24,121)	(23,891)
Acquisitions, net	6,799	2,958	6,916	7,458	7,044	1,212	9,873	4,720	(9,349)	8,808	5,960
Other	1,236	279	102	286	107	3,146	(5,515)	1,949	58,362	7,284	4,272
Net Cash From Investing Activities	(28,915)	(26,234)	(21,972)	(20,443)	(28,453)	(40,146)	(19,657)	(22,407)	(30,963)	(8,029)	(13,659)
Net Change in Debt	4,826	10,701	9,256	(7,124)	(17)	5,395	357	14,891	11,074	(11,829)	(8,331)
Net Change in Common Stock	(3,048)	27	187	(929)	(1,526)	(5,565)	(3,096)	(448)	-	-	(3,947)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(9,841)	(10,717)	(9,979)	(7,315)	(7,682)	(7,198)	(9,444)	(9,370)	(9,677)	(10,877)	(16,259)
Other	(1,331)	(840)	(931)	(2,763)	(1,405)	(1,610)	(607)	(1,261)	(2,168)	(4,380)	(4,011)
Net Cash From Financing Activities	(9,394)	(829)	(1,467)	(18,131)	(10,630)	(8,978)	(12,790)	3,812	(771)	(27,086)	(32,548)
Effect of Exchange Rate on Cash	(77)	106	(186)	(349)	201	(170)	(686)	(1,070)	(1,503)	647	(449)
Net Increase/(Decrease) in Cash	5,532	(5,469)	3,725	(2,152)	7,258	(8,854)	11,911	10,145	(12,622)	1,182	6,429
Cash and Equivalents, Beginning of Year	9,656	15,188	9,719	13,444	11,292	18,550	9,696	21,607	31,752	19,130	20,312
Cash and Equivalents, End of Year	15,188	9,719	13,444	11,292	18,550	9,696	21,607	31,752	19,130	20,312	26,741

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	116,570	96,457	112,894	119,777	114,734	103,343	99,778	93,358	86,569	95,404	97,482
Net Property, Plant and Equipment	112,038	131,619	142,705	152,081	172,293	191,897	192,472	182,838	236,098	226,380	223,175
Other Assets	53,793	64,105	66,961	73,399	73,298	62,272	60,866	63,961	88,608	85,313	78,537
Total Assets	282,401	292,181	322,560	345,257	360,325	357,512	353,116	340,157	411,275	407,097	399,194
Total Current Liabilities	105,529	84,789	100,552	102,659	96,979	93,258	86,212	70,948	73,825	79,767	77,813
Long-term Debt	13,772	30,862	34,381	30,463	29,921	4,065	3,582	4,528	6,925	73,870	66,690
Deferred Income Taxes	12,518	13,838	13,388	14,649	15,590	11,943	12,052	8,976	15,274	13,007	14,837
Other Liabilities and Deferred Credits	21,716	24,557	24,459	26,483	27,908	67,098	78,484	91,584	126,740	42,641	37,320
Total Liabilities	153,535	154,046	172,780	174,254	170,398	176,364	180,330	176,036	222,764	209,285	196,660
Minority Interests	1,581	1,704	1,767	1,486	1,433	1,101	820	1,245	1,865	3,456	3,888
Common Shares	527	527	529	536	542	542	540	546	683	696	685
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	125,447	127,633	140,179	162,987	180,218	183,474	186,981	180,100	175,566	177,645	182,606
Other / Comprehensive Income (Loss)	1,311	8,271	7,305	5,994	7,734	(3,969)	(15,555)	(17,770)	10,397	16,015	15,355
Total Shareholders' Equity	127,285	136,431	148,013	169,517	188,494	180,047	171,966	162,876	186,646	194,356	198,646
Total Liabilities and Shareholders' Equity	282,401	292,181	322,560	345,257	360,325	357,512	353,116	340,157	411,275	407,097	399,194
Return on Capital Employed (ROCE)	**21.9%**	**9.0%**	**12.7%**	**18.0%**	**14.4%**	**9.3%**	**9.4%**	**2.0%**	**4.5%**	**7.4%**	**10.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	63,897	53,751	67,570	88,459	90,772	86,506	77,094	43,520	41,249	50,603	63,156	155,008	275,622
Production Costs	9,754	15,937	18,131	23,301	25,324	26,372	24,371	17,428	17,407	18,141	18,385	53,933	95,732
Exploration	1,995	2,410	2,178	2,436	3,677	5,634	4,413	5,802	2,196	2,013	1,390	5,599	15,814
DD&A	9,336	11,918	11,731	10,346	12,671	14,267	15,325	20,316	21,036	21,644	16,915	59,595	95,236
G&A/Other	3,006	5,637	2,351	4,778	6,545	9,944	4,881	4,913	4,186	2,680	4,009	10,875	20,669
Pre-tax Results Of Operations	39,806	17,849	33,179	47,598	42,555	30,289	28,104	-4,939	-3,576	6,125	22,457	25,006	48,171
Income Taxes	24,541	11,450	17,839	27,549	26,875	20,589	17,195	538	841	3,048	11,623	15,512	33,245
Results Of Operations	15,265	6,399	15,340	20,049	15,680	9,701	10,909	-5,477	-4,417	3,077	10,834	9,494	14,926

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	14,008	11,921	14,984	19,228	18,639	19,115	20,084	10,226	11,889	15,410	20,511	47,810	78,120
Production Costs	2,396	4,445	4,977	6,187	6,680	7,290	7,652	6,136	7,303	7,138	7,893	22,334	36,122
Exploration	1,007	970	1,026	989	1,432	2,832	1,915	3,847	1,024	1,286	692	3,002	8,764
DD&A	3,120	5,153	4,938	4,600	6,499	6,799	6,060	9,516	9,206	10,670	7,468	27,344	42,920
G&A/Other	447	1,494	1,719	784	3,066	3,867	3,318	3,072	547	1,633	1,963	4,143	10,533
Pre-tax Results Of Operations	7,038	-141	2,324	6,668	962	-1,673	1,139	-12,345	-6,191	-5,317	2,495	-9,013	-20,219
Income Taxes	2,342	-708	661	2,160	266	-433	462	-4,189	-1,878	-1,417	1,948	-1,347	-5,074
Results Of Operations	4,696	567	1,663	4,508	696	-1,239	677	-8,156	-4,313	-3,900	547	-7,666	-15,145

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	49,889	41,830	52,586	69,231	72,133	67,391	57,010	33,294	29,360	35,193	42,645	107,198	197,502
Production Costs	7,358	11,492	13,154	17,114	18,644	19,082	16,719	11,292	10,104	11,003	10,492	31,599	59,610
Exploration	988	1,440	1,152	1,447	2,245	2,802	2,498	1,955	1,172	727	698	2,597	7,050
DD&A	6,216	6,765	6,793	5,746	6,172	7,468	9,265	10,800	11,830	10,974	9,447	32,251	52,316
G&A/Other	2,559	4,143	632	3,994	3,479	6,077	1,563	1,841	3,639	1,047	2,046	6,732	10,136
Pre-tax Results Of Operations	32,768	17,990	30,855	40,930	41,593	31,962	26,965	7,406	2,615	11,442	19,962	34,019	68,390
Income Taxes	22,199	12,158	17,178	25,389	26,609	21,022	16,733	4,727	2,719	4,465	9,675	16,859	38,319
Results Of Operations	10,569	5,832	13,677	15,541	14,984	10,940	10,232	2,679	-104	6,977	10,287	17,160	30,071

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$76.72	$46.00	$55.32	$74.22	$74.86	$72.97	$67.41	$39.71	$30.27	$37.23	$46.34	$37.95	$43.58
Production Costs	$11.71	$13.64	$14.84	$19.55	$20.89	$22.25	$21.31	$15.90	$12.78	$13.35	$13.49	$13.20	$15.14
Exploration	$2.40	$2.06	$1.78	$2.04	$3.03	$4.75	$3.86	$5.29	$1.61	$1.48	$1.02	$1.37	$2.50
DD&A	$11.21	$10.20	$9.60	$8.68	$10.45	$12.03	$13.40	$18.54	$15.44	$15.92	$12.41	$14.59	$15.06
G&A/Other	$3.61	$4.82	$1.92	$4.01	$5.40	$8.39	$4.27	$4.48	$3.07	$1.97	$2.94	$2.66	$3.27
Pre-tax Results Of Operations	$47.80	$15.28	$27.16	$39.94	$35.10	$25.55	$24.57	-$4.51	-$2.62	$4.51	$16.48	$6.12	$7.62
Income Taxes	$29.47	$9.80	$14.60	$23.11	$22.16	$17.37	$15.04	$0.49	$0.62	$2.24	$8.53	$3.80	$5.26
Results Of Operations	$18.33	$5.48	$12.56	$16.82	$12.93	$8.18	$9.54	-$5.00	-$3.24	$2.26	$7.95	$2.32	$2.36

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$73.92	$44.96	$56.47	$74.72	$69.12	$70.23	$71.05	$37.25	$30.63	$39.08	$46.16	$38.97	$43.79
Production Costs	$12.64	$16.76	$18.76	$24.04	$24.77	$26.79	$27.07	$22.35	$18.81	$18.10	$17.76	$18.20	$20.25
Exploration	$5.31	$3.66	$3.87	$3.84	$5.31	$10.41	$6.77	$14.01	$2.64	$3.26	$1.56	$2.45	$4.91
DD&A	$16.46	$19.43	$18.61	$17.88	$24.10	$24.98	$21.44	$34.67	$23.72	$27.06	$16.81	$22.29	$24.06
G&A/Other	$2.36	$5.63	$6.48	$3.05	$11.37	$14.21	$11.74	$11.19	$1.41	$4.14	$4.42	$3.38	$5.90
Pre-tax Results Of Operations	$37.14	-$0.53	$8.76	$25.91	$3.57	-$6.15	$4.03	-$44.97	-$15.95	-$13.48	$5.62	-$7.35	-$11.33
Income Taxes	$12.36	-$2.67	$2.49	$8.39	$0.99	-$1.59	$1.63	-$15.26	-$4.84	-$3.59	$4.38	-$1.10	-$2.84
Results Of Operations	$24.78	$2.14	$6.27	$17.52	$2.58	-$4.55	$2.39	-$29.71	-$11.11	-$9.89	$1.23	-$6.25	-$8.49

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$77.55	$46.31	$55.00	$74.08	$76.51	$73.79	$66.21	$40.53	$30.13	$36.48	$46.42	$37.51	$43.50
Production Costs	$11.44	$12.72	$13.76	$18.31	$19.77	$20.89	$19.42	$13.75	$10.37	$11.40	$11.42	$11.06	$13.13
Exploration	$1.54	$1.59	$1.20	$1.55	$2.38	$3.07	$2.90	$2.38	$1.20	$0.75	$0.76	$0.91	$1.55
DD&A	$9.66	$7.49	$7.10	$6.15	$6.55	$8.18	$10.76	$13.15	$12.14	$11.37	$10.28	$11.29	$11.52
G&A/Other	$3.98	$4.59	$0.66	$4.27	$3.69	$6.65	$1.82	$2.24	$3.73	$1.09	$2.23	$2.36	$2.23
Pre-tax Results Of Operations	$50.93	$19.92	$32.27	$43.80	$44.11	$34.99	$31.32	$9.02	$2.68	$11.86	$21.73	$11.90	$15.06
Income Taxes	$34.51	$13.46	$17.97	$27.17	$28.22	$23.02	$19.43	$5.75	$2.79	$4.63	$10.53	$5.90	$8.44
Results Of Operations	$16.43	$6.46	$14.30	$16.63	$15.89	$11.98	$11.88	$3.26	-$0.11	$7.23	$11.20	$6.00	$6.62

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$78.87	$48.62	$51.68	$71.30	$74.27	$70.19	$63.50	$46.46	$33.04	$39.65	$50.17	$40.20	$46.27
Production Costs	$11.38	$16.78	$15.52	$20.19	$23.75	$26.91	$25.02	$19.11	$14.12	$14.20	$13.95	$14.10	$17.34
Exploration	$1.63	$0.86	$1.03	$1.02	$1.26	$2.33	$1.94	$1.27	$1.11	$1.00	$1.42	$1.16	$1.34
DD&A	$12.24	$9.10	$8.58	$5.78	$6.03	$5.76	$8.00	$13.33	$13.53	$10.94	$15.10	$13.05	$12.05
G&A/Other	$1.74	$2.20	$2.36	$4.46	$5.97	$3.27	$3.09	$4.49	$7.80	-$0.96	$7.76	$4.68	$4.31
Pre-tax Results Of Operations	$51.87	$19.67	$24.19	$39.85	$37.27	$31.92	$25.46	$8.26	-$3.53	$14.47	$11.95	$7.22	$11.24
Income Taxes	$33.12	$11.50	$11.07	$23.61	$25.30	$20.74	$16.12	$2.94	-$0.86	$7.41	$10.33	$5.23	$7.08
Results Of Operations	$18.75	$8.18	$13.12	$16.25	$11.97	$11.18	$9.34	$5.31	-$2.68	$7.06	$1.62	$1.99	$4.16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other Eastern													
Net Revenue	$76.69	$44.96	$56.85	$75.37	$77.49	$75.34	$67.30	$38.33	$29.09	$35.36	$45.39	$36.62	$42.53
Production Costs	$11.47	$10.35	$12.77	$17.44	$18.02	$18.29	$17.17	$11.75	$9.03	$10.42	$10.72	$10.06	$11.66
Exploration	$1.47	$2.02	$1.30	$1.79	$2.87	$3.39	$3.28	$2.79	$1.24	$0.67	$0.58	$0.83	$1.63
DD&A	$7.98	$6.55	$6.28	$6.32	$6.77	$9.22	$11.87	$13.08	$11.64	$11.53	$8.95	$10.70	$11.34
G&A/Other	$5.43	$5.98	-$0.29	$4.19	$2.69	$8.12	$1.31	$1.40	$2.28	$1.80	$0.70	$1.59	$1.51
Pre-tax Results Of Operations	$50.33	$20.06	$36.78	$45.63	$47.13	$36.32	$33.67	$9.30	$4.91	$10.94	$24.43	$13.44	$16.40
Income Taxes	$35.41	$14.60	$21.81	$28.82	$29.51	$24.00	$20.76	$6.80	$4.10	$3.65	$10.59	$6.12	$8.92
Results Of Operations	$14.92	$5.45	$14.97	$16.81	$17.62	$12.32	$12.90	$2.50	$0.81	$7.29	$13.84	$7.32	$7.48

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other Western													
Net Revenue	$62.53	$46.10	$58.88	$75.93	$70.18	$71.55	$75.02	$37.84	$31.61	$38.95	$44.02	$38.29	$42.90
Production Costs	$17.61	$23.32	$25.33	$29.74	$29.46	$31.53	$33.08	$24.21	$16.85	$18.95	$21.69	$19.20	$21.62
Exploration	$5.75	$3.69	$2.75	$1.98	$5.16	$8.81	$3.02	$4.10	$2.54	$1.77	$1.45	$1.91	$2.34
DD&A	$16.79	$24.91	$26.42	$16.49	$19.89	$21.66	$18.00	$40.56	$20.97	$30.70	$12.11	$21.20	$23.32
G&A/Other	$6.53	$12.17	$11.37	$14.15	$20.69	$20.89	$20.38	$19.28	$2.20	$6.42	$6.28	$5.00	$8.82
Pre-tax Results Of Operations	$15.85	-$18.00	-$6.98	$13.57	-$5.02	-$11.33	$0.54	-$50.31	-$10.96	-$18.89	$2.49	-$9.02	-$13.20
Income Taxes	$5.24	-$7.07	-$3.25	$5.72	-$2.20	-$2.63	$0.25	-$15.61	-$2.29	-$7.53	$5.79	-$1.28	-$2.96
Results Of Operations	$10.61	-$10.93	-$3.73	$7.85	-$2.82	-$8.71	$0.29	-$34.70	-$8.67	-$11.36	-$3.30	-$7.74	-$10.24

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	8,594.5	9,082.2	9,789.0	9,547.9	10,101.4	10,216.4	9,857.5	8,926.0	11,301.4	11,378.1	11,589.0	11,422.8	10,610.4
Liquids Production (b/d)	1,695,890	1,687,671	1,715,068	1,673,973	1,638,356	1,545,205	1,490,411	1,515,068	1,849,315	1,827,397	1,802,740	1,826,484	1,696,986
Total Production (boe/d)	3,128,311	3,201,370	3,346,575	3,265,297	3,321,918	3,247,945	3,133,333	3,002,740	3,732,877	3,723,744	3,734,247	3,730,289	3,465,388
% Gas Production	46%	47%	49%	49%	51%	52%	52%	50%	50%	51%	52%	51%	51%
% Oil Production	54%	53%	51%	51%	49%	48%	48%	50%	50%	49%	48%	49%	49%
Proven Reserves:													
Gas Reserves (bcf)	43,339.0	49,055.0	47,135.0	47,662.0	42,792.0	42,313.0	40,156.0	37,215.0	40,381.0	40,272.0	35,447.0	38,700.0	38,694.2
Oil Reserves (mmbbls)	3,443.0	5,687.0	6,146.0	6,048.0	6,196.0	6,621.0	6,130.0	5,303.0	6,258.0	5,262.0	5,436.0	5,652.0	5,677.8
Total Proven Reserves (mmboe)	10,666.2	13,862.8	14,001.8	13,991.7	13,328.0	13,673.2	12,822.7	11,505.5	12,988.2	11,974.0	11,343.8	12,102.0	12,126.8
% Gas Reserves	68%	59%	56%	57%	54%	52%	52%	54%	52%	56%	52%	53%	53%
% Oil Reserves	32%	41%	44%	43%	46%	48%	48%	46%	48%	44%	48%	47%	47%
Proven Reserve Life Index	9.3	11.9	11.5	11.7	11.0	11.5	11.2	10.5	9.5	8.8	8.3	8.9	9.7
Proven Reserve Additions:													
Gas Additions (bcf)	5,581.0	9,031.0	1,653.0	4,012.0	-1,183.0	3,250.0	1,441.0	317.0	7,291.0	4,044.0	-595.0	10,740.0	12,498.0
Oil Additions (mmbbls)	286.0	2,860.0	1,085.0	513.0	746.0	989.0	53.0	-274.0	1,630.0	-329.0	832.0	2,133.0	1,912.0
Total Additions (mmboe)	1,216.2	4,365.2	1,360.5	1,181.7	548.8	1,530.7	293.2	-221.2	2,845.2	345.0	732.8	3,923.0	3,995.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	266.3	1,380.2	448.7	944.5	214.8	714.2	107.7	94.7	250.3	797.2	528.2	1,575.7	1,778.0
Acquisitions	78.7	2.7	98.5	0.0	108.8	57.0	0.0	16.3	2,463.2	712.2	5.3	3,180.7	3,197.0
Dispositions	(68.2)	(1.0)	(180.8)	(102.7)	(180.0)	(13.2)	(171.0)	(99.2)	(24.8)	(2,099.3)	(184.3)	(2,308.5)	(2,578.7)
Revisions of Estimates	939.3	2,983.3	994.2	339.8	405.2	772.7	356.5	(233.0)	156.5	935.0	383.7	1,475.2	1,598.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	21.9%	31.6%	33.0%	79.9%	39.1%	46.7%	36.7%	-42.8%	8.8%	231.1%	72.1%	40.2%	44.5%
Acquisitions	6.5%	0.1%	7.2%	0.0%	19.8%	3.7%	0.0%	-7.4%	86.6%	206.4%	0.7%	81.1%	80.0%
Dispositions	-5.6%	0.0%	-13.3%	-8.7%	-32.8%	-0.9%	-58.3%	44.8%	-0.9%	-608.5%	-25.2%	-58.8%	-64.5%
Revisions of Estimates	77.2%	68.3%	73.1%	28.8%	73.8%	50.5%	121.6%	105.4%	5.5%	271.0%	52.4%	37.6%	40.0%
Additions as % of Production:													
Gas	177.9%	272.4%	46.3%	115.1%	-32.1%	87.2%	40.1%	9.7%	176.8%	97.4%	-14.1%	85.9%	64.5%
Oil	46.2%	464.3%	173.3%	84.0%	124.7%	175.4%	9.7%	-49.5%	241.5%	-49.3%	126.4%	106.7%	61.7%
Total	106.5%	373.6%	111.4%	99.1%	45.3%	129.1%	25.6%	-20.2%	208.8%	25.4%	53.8%	96.0%	63.2%
Additions as % of Reserves:													
Gas	12.9%	18.4%	3.5%	8.4%	-2.8%	7.7%	3.6%	0.9%	18.1%	10.0%	-1.7%	27.8%	32.3%
Oil	8.3%	50.3%	17.7%	8.5%	12.0%	14.9%	0.9%	-5.2%	26.0%	-6.3%	15.3%	37.7%	33.7%
Total	11.4%	31.5%	9.7%	8.4%	4.1%	11.2%	2.3%	-1.9%	21.9%	2.9%	6.5%	32.4%	32.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$3,619.0	$4,356.0	$4,837.0	$6,167.0	$8,685.0	$8,685.0	$6,802.0	$6,285.0	$3,575.0	$2,922.0	$3,572.0	$10,069.0	$23,156.0
Development	$12,465.0	$19,868.0	$16,604.0	$14,971.0	$18,575.0	$23,433.0	$25,484.0	$20,616.0	$60,616.0	$11,692.0	$13,131.0	$85,439.0	$131,539.0
Acquisitions	$8,215.0	$1,276.0	$7,263.0	$3,946.0	$6,127.0	$3,387.0	$1,129.0	$270.0	$605.0	$2,823.0	$1,570.0	$4,998.0	$6,397.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$24,299.0	$25,500.0	$28,704.0	$25,084.0	$33,387.0	$35,505.0	$33,415.0	$27,171.0	$64,796.0	$17,437.0	$18,273.0	$100,506.0	$161,092.0
Expenditures as % of Total:													
Exploration	14.9%	17.1%	16.9%	24.6%	26.0%	24.5%	20.4%	23.1%	5.5%	16.8%	19.5%	10.0%	14.4%
Development	51.3%	77.9%	57.8%	59.7%	55.6%	66.0%	76.3%	75.9%	93.5%	67.1%	71.9%	85.0%	81.7%
Acquisitions	33.8%	5.0%	25.3%	15.7%	18.4%	9.5%	3.4%	1.0%	0.9%	16.2%	8.6%	5.0%	4.0%
Cashflow (US$million)	$26,596.0	$20,727.0	$29,249.0	$32,831.0	$32,028.0	$29,601.2	$30,646.9	$20,640.9	$18,815.3	$26,734.0	$29,139.0	$74,688.3	$125,976.1
Cashflow (US$/boe)	$23.29	$17.74	$23.95	$27.55	$26.41	$24.97	$26.80	$18.83	$13.81	$19.67	$21.38	$18.29	$19.92
Recycle Ratio	1.2x	3.0x	1.3x	1.4x	0.6x	1.1x	0.4x	0.1x	0.6x	2.8x	1.1x	1.1x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$13.34	$5.55	$14.86	$16.46	$43.97	$21.60	$69.56	-$194.47	$157.78	$8.44	$18.32	$31.31	$45.81
Acquisition Costs	$104.43	nm	$73.74	na	$56.30	$59.42	na	$16.53	$0.25	$3.96	$294.38	$1.57	$2.00
All Sources (incl. revisions)	$18.92	$5.84	$18.62	$19.53	$45.81	$23.00	$71.99	-$222.71	$22.58	$7.13	$19.92	$16.13	$24.51
Exploration & Development (excl. revisions)	$60.39	$17.55	$47.79	$22.38	$126.89	$44.97	$299.87	$284.17	$256.42	$18.33	$31.62	$60.61	$87.01
Acquisition Costs	$104.43	nm	$73.74	na	$56.30	$59.42	na	$16.53	$0.25	$3.96	$294.38	$1.57	$2.00
All Sources (excl. revisions)	$70.43	$18.44	$52.46	$26.56	$103.15	$46.04	$310.36	$244.78	$23.88	$11.55	$34.25	$21.13	$32.38
Geographically Segmented Costs													
North America	$144.38	$4.71	$29.58	$18.95	$125.11	$21.62	-$241.06	-$31.13	$23.55	$6.56	$18.67	$15.18	$24.91
Europe	$32.67	$8.61	$9.50	$4.46	$32.00	$40.76	-$54.49	-$39.06	$58.45	-$15.30	-$6.53	-$27.03	-$35.20
Other Eastern	$6.18	$6.47	$16.11	$43.32	$27.69	$21.01	$21.50	$28.11	$18.75	$6.37	$8.73	$12.60	$15.74

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	11.71	13.64	14.84	19.55	20.89	22.25	21.31	15.90	12.78	13.35	13.49	13.20	15.14
Exploration Expense	2.40	2.06	1.78	2.04	3.03	4.75	3.86	5.29	1.61	1.48	1.02	1.37	2.50
G&A/Other	3.61	4.82	1.92	4.01	5.40	8.39	4.27	4.48	3.07	1.97	2.94	2.66	3.27
F&D Costs	18.92	5.84	18.62	19.53	45.81	23.00	71.99	46.93	22.58	7.13	7.13	16.13	24.51
Return on Capital	11.07	4.39	13.47	14.49	31.74	16.83	52.41	30.78	13.50	3.94	3.94	8.99	14.80
Income Taxes	17.80	7.86	15.66	19.91	54.41	35.71	82.61	54.97	24.10	3.90	3.90	11.07	20.59
Breakeven Oil Price	65.50	38.61	66.31	79.54	161.28	110.93	236.44	158.36	77.63	31.78	32.43	53.43	80.80
Quality Differential	1.45	(1.17)	(1.30)	(5.57)	(11.17)	(9.50)	(6.72)	(4.87)	(0.19)	(1.11)	(1.11)	(1.19)	(3.04)
Required WTI Price	66.96	37.45	65.01	73.97	150.10	101.42	229.72	153.48	77.44	30.67	31.32	52.23	77.76

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	12.64	16.76	18.76	24.04	24.77	26.79	27.07	22.35	18.81	18.10	18.10	18.20	20.25
Exploration Expense	5.31	3.66	3.87	3.84	5.31	10.41	6.77	14.01	2.64	3.26	3.26	2.45	4.91
G&A/Other	2.36	5.63	6.48	3.05	11.37	14.21	11.74	11.19	1.41	4.14	4.14	3.38	5.90
F&D Costs	144.38	4.71	29.58	18.95	125.11	21.62	55.23	145.00	23.55	6.56	6.56	15.18	24.91
Return on Capital	53.77	3.45	23.28	17.00	106.87	20.05	46.35	118.60	15.29	3.53	3.53	8.52	15.45
Income Taxes	26.82	1.48	9.98	8.14	40.84	7.01	31.63	60.91	6.66	1.28	1.28	3.77	7.71
Breakeven Oil Price	245.29	35.69	91.94	75.02	314.28	100.08	178.79	372.08	68.36	36.87	36.87	51.50	79.14
Quality Differential	1.96	2.18	0.61	1.38	3.35	2.92	1.27	3.85	4.35	4.15	4.15	5.34	4.22
Required WTI Price	247.25	37.87	92.55	76.40	317.63	103.00	180.05	375.92	72.71	41.02	41.02	56.84	83.36

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	11.44	12.72	13.76	18.31	19.77	20.89	19.42	13.75	10.37	11.40	11.40	11.06	13.13
Exploration Expense	1.54	1.59	1.20	1.55	2.38	3.07	2.90	2.38	1.20	0.75	0.75	0.91	1.55
G&A/Other	3.98	4.59	0.66	4.27	3.69	6.65	1.82	2.24	3.73	1.09	1.09	2.36	2.23
F&D Costs	8.63	6.82	13.50	20.05	28.57	24.29	37.04	54.07	21.39	8.60	8.60	17.69	24.06
Return on Capital	5.66	5.15	9.78	14.21	20.31	18.05	32.45	52.56	12.78	4.79	4.79	9.84	16.07
Income Taxes	11.88	10.75	12.28	23.22	36.06	34.68	53.06	92.73	22.55	3.06	3.06	10.01	19.99
Breakeven Oil Price	43.13	41.62	51.18	81.62	110.78	107.64	146.68	217.72	72.02	29.69	29.69	51.86	77.03
Quality Differential	1.30	(2.15)	(1.82)	(7.48)	(15.33)	(13.20)	(9.34)	(7.78)	(2.00)	(3.26)	(3.26)	(4.09)	(5.88)
Required WTI Price	44.43	39.48	49.36	74.14	95.45	94.44	137.34	209.94	70.03	26.43	26.43	47.77	71.15

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	11.38	16.78	15.52	20.19	23.75	26.91	25.02	19.11	14.12	14.20	13.95	14.10	17.34
Exploration Expense	1.63	0.86	1.03	1.02	1.26	2.33	1.94	1.27	1.11	1.00	1.42	1.16	1.34
G&A/Other	1.74	2.20	2.36	4.46	5.97	3.27	3.09	4.49	7.80	(0.96)	7.76	4.68	4.31
F&D Costs	32.67	8.61	9.50	4.46	32.00	40.76	25.74	25.74	58.45	36.64	40.28	45.12	37.37
Return on Capital	17.61	5.13	5.58	3.15	22.03	27.91	17.50	16.94	33.13	15.75	14.90	20.27	19.84
Income Taxes	31.12	7.22	4.71	4.58	46.55	51.80	30.19	9.39	10.59	16.54	95.02	23.77	21.64
Breakeven Oil Price	96.16	40.79	38.69	37.87	131.56	152.98	103.48	76.94	125.21	83.18	173.32	109.09	101.84
Quality Differential	(1.57)	(10.51)	(8.93)	(21.64)	(31.03)	(27.45)	(19.04)	(19.48)	(7.63)	(8.24)	(12.78)	(9.55)	(13.43)
Required WTI Price	94.59	30.29	29.76	16.23	100.52	125.53	84.43	57.46	117.58	74.94	160.53	99.54	88.41

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other Eastern													
Operating Costs	11.47	10.35	12.77	17.44	18.02	18.29	17.17	11.75	9.03	10.42	10.72	10.06	11.66
Exploration Expense	1.47	2.02	1.30	1.79	2.87	3.39	3.28	2.79	1.24	0.67	0.58	0.83	1.63
G&A/Other	5.43	5.98	(0.29)	4.19	2.69	8.12	1.31	1.40	2.28	1.80	0.70	1.59	1.51
F&D Costs	6.18	6.47	16.11	43.32	27.69	21.01	21.50	28.11	18.75	6.37	8.73	12.60	15.74
Return on Capital	4.37	5.52	12.49	30.31	18.00	14.00	14.55	18.72	11.18	3.80	5.09	7.43	9.83
Income Taxes	10.38	14.78	18.21	51.97	30.14	27.26	23.41	50.91	30.40	1.90	3.89	7.41	12.99
Breakeven Oil Price	39.31	45.12	60.60	149.03	99.41	92.07	81.23	113.68	72.87	24.97	29.70	39.91	53.35
Quality Differential	3.17	2.73	2.14	(0.92)	(8.40)	(7.04)	(5.46)	(3.44)	0.02	(1.51)	(5.42)	(2.30)	(3.16)
Required WTI Price	42.48	47.85	62.74	148.11	91.01	85.03	75.77	110.24	72.89	23.46	24.28	37.61	50.18

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other Western													
Operating Costs	17.61	23.32	25.33	29.74	29.46	31.53	33.08	24.21	16.85	18.95	21.69	19.20	21.62
Exploration Expense	5.75	3.69	2.75	1.98	5.16	8.81	3.02	4.10	2.54	1.77	1.45	1.91	2.34
G&A/Other	6.53	12.17	11.37	14.15	20.69	20.89	20.38	19.28	2.20	6.42	6.28	5.00	8.82
F&D Costs	94.57	2.89	40.63	11.24	76.48	12.36	24.92	45.17	21.65	6.75	14.32	15.98	19.42
Return on Capital	43.06	3.99	51.71	13.85	91.01	18.24	36.17	53.44	20.91	3.69	7.81	10.91	18.16
Income Taxes	21.28	2.58	45.12	10.10	71.15	5.50	31.56	24.05	5.52	2.44	5.17	5.50	10.06
Breakeven Oil Price	188.81	48.65	176.90	81.06	293.96	97.32	149.13	170.25	69.68	40.02	56.71	58.50	80.41
Quality Differential	17.10	0.59	0.48	4.38	6.62	4.83	(0.78)	2.17	3.49	4.14	8.48	5.37	3.50
Required WTI Price	205.91	49.24	177.38	85.45	300.57	102.15	148.35	172.43	73.17	44.16	65.20	63.87	83.91

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Royal Dutch Shell PLC (RDS - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	16.74	19.61	27.03	29.13	30.92	29.67	19.67	16.71	16.71	17.85	18.63	17.71	20.15
Exploration Expense	2.53	2.36	2.83	4.23	6.61	5.37	6.55	2.11	2.11	1.98	1.41	1.84	3.33
G&A/Other	5.92	2.54	5.54	7.53	11.66	5.94	5.55	4.02	4.02	2.64	4.06	3.57	4.35
F&D Costs (1-Year)	6.75	21.38	28.91	43.07	28.15	115.44	68.66	28.21	28.21	8.34	20.02	18.96	29.62
Return on Capital	4.77	14.59	20.04	28.98	20.70	95.64	46.33	16.75	16.75	4.45	10.41	10.40	17.79
Income Taxes	8.54	16.97	27.54	49.67	43.94	150.75	82.73	29.92	29.92	4.41	11.17	12.82	24.75
Breakeven Oil Price	**45.25**	**77.45**	**111.88**	**162.60**	**141.98**	**402.81**	**229.49**	**97.72**	**97.72**	**39.67**	**65.70**	**65.31**	**99.98**
Quality Differential	(1.43)	(1.71)	(7.70)	(15.58)	(13.21)	(9.36)	(6.03)	(0.25)	(0.25)	(1.49)	(3.15)	(1.63)	(4.05)
Required WTI Price	**43.82**	**75.73**	**104.18**	**147.01**	**128.77**	**393.45**	**223.47**	**97.47**	**97.47**	**38.18**	**62.55**	**63.68**	**95.93**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	16.74	19.61	27.03	29.13	30.92	29.67	19.67	16.71	16.71	17.85	18.63	17.71	20.15
Exploration Expense	2.53	2.36	2.83	4.23	6.61	5.37	6.55	2.11	2.11	1.98	1.41	1.84	3.33
G&A/Other	5.92	2.54	5.54	7.53	11.66	5.94	5.55	4.02	4.02	2.64	4.06	3.57	4.35
F&D Costs (1-Year)	11.81	17.36	12.15	32.92	26.05	37.04	39.20	31.16	31.16	7.38	25.28	19.46	28.01
Return on Capital	8.35	11.92	8.42	22.28	19.16	26.27	25.34	18.50	18.50	3.94	13.14	10.67	16.82
Income Taxes	14.95	13.86	11.57	38.18	40.67	41.40	45.26	33.03	33.03	3.90	14.10	13.15	23.40
Breakeven Oil Price	**60.30**	**67.64**	**67.54**	**134.26**	**135.08**	**145.69**	**141.57**	**105.53**	**105.53**	**37.68**	**76.62**	**66.40**	**96.05**
Quality Differential	(1.43)	(1.71)	(7.70)	(15.58)	(13.21)	(9.36)	(6.03)	(0.25)	(0.25)	(1.49)	(3.15)	(1.63)	(4.05)
Required WTI Price	**58.87**	**65.93**	**59.84**	**118.68**	**121.87**	**136.33**	**135.54**	**105.28**	**105.28**	**36.20**	**73.47**	**64.77**	**92.00**

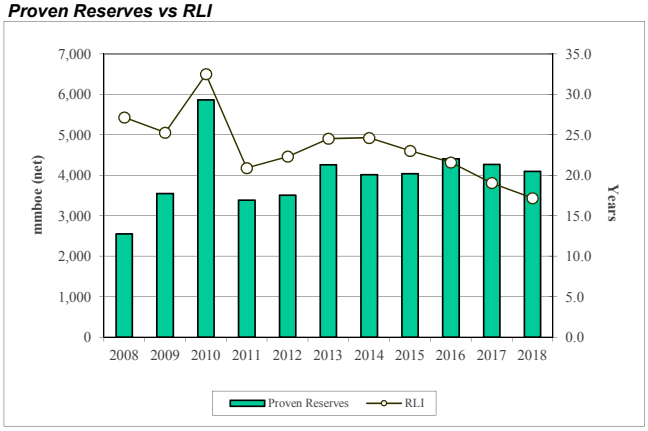
Source: BMO Capital Markets, Company Reports

Suncor Energy Inc. (SU - TSX, NYSE) US$, net

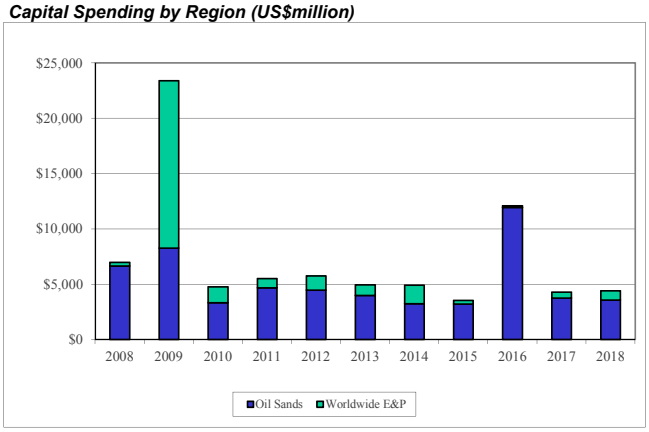
- Suncor yielded results from operations of $6.17/boe compared to $6.39/boe recorded in 2017.
- The company's F&D costs declined slightly to $15.51/boe in 2018 from $16.06/boe last year, while the costs for PD reserves decreased to $4.47/boe from $24.21/boe in 2017.
- Based on 2018 results, we estimate that Suncor requires a Brent breakeven oil price of $74.71/boe on total proved reserves, while its PD costs suggest a breakeven of $48.95/boe.
- The company reported ROCE of 8.0% in 2018 versus 7.4% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

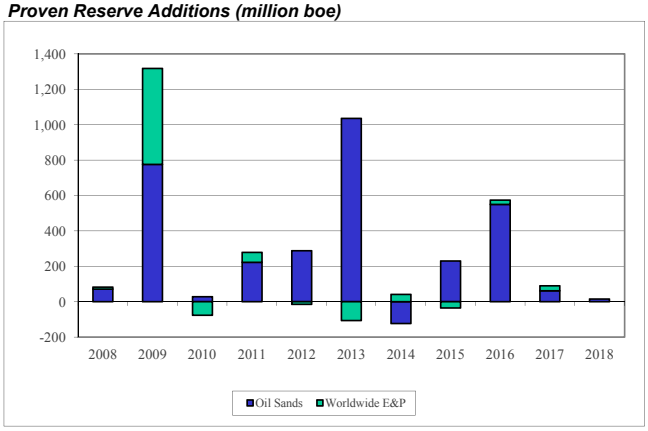
Proven Reserves vs RLI



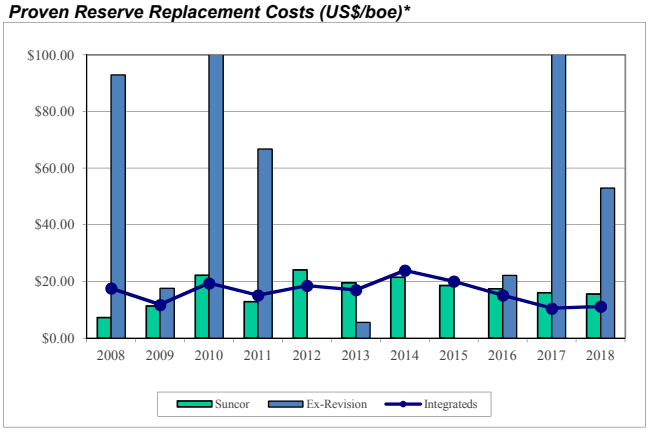
Capital Spending by Region (US$million)



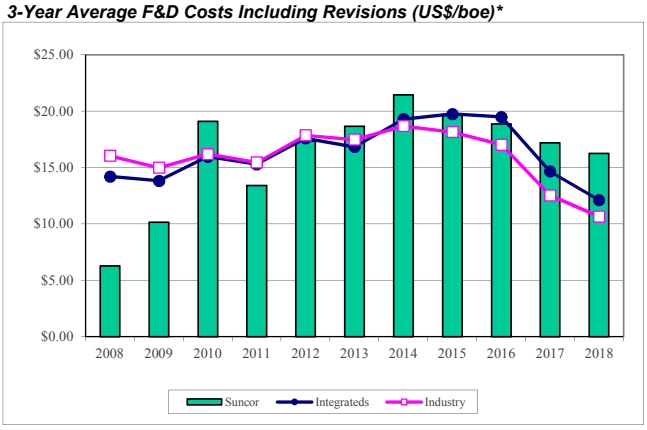
Proven Reserve Additions (million boe)



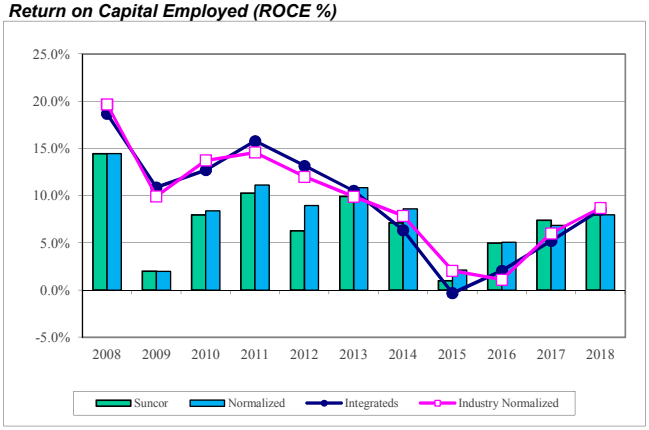
Proven Reserve Replacement Costs (US$/boe)*



3-Year Average F&D Costs Including Revisions (US$/boe)*



Return on Capital Employed (ROCE %)



*Note: We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions
Source: BMO Capital Markets, Company Reports

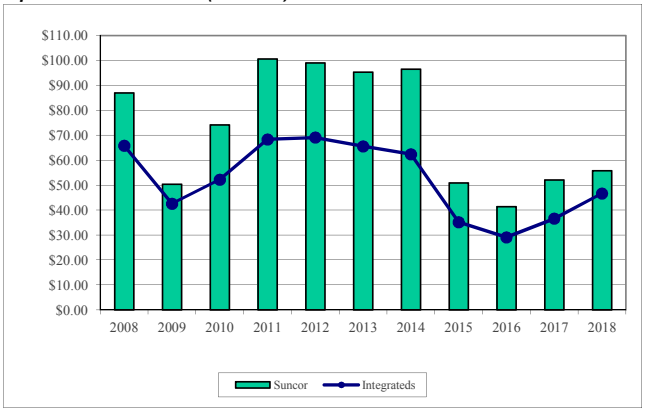
See pages F1 to F4 for analyst coverage.

Suncor Energy Inc. (SU - TSX, NYSE)

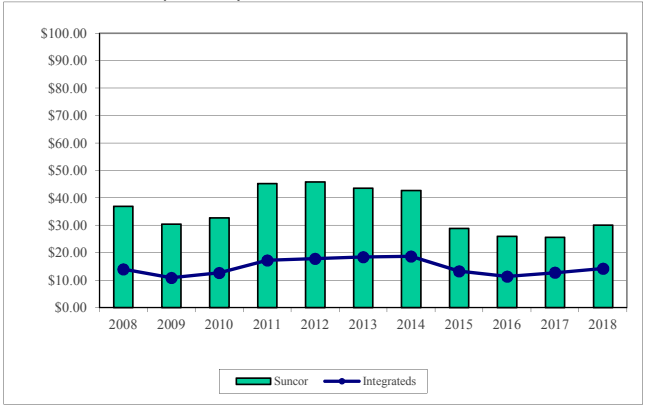
US$/boe, net

Worldwide

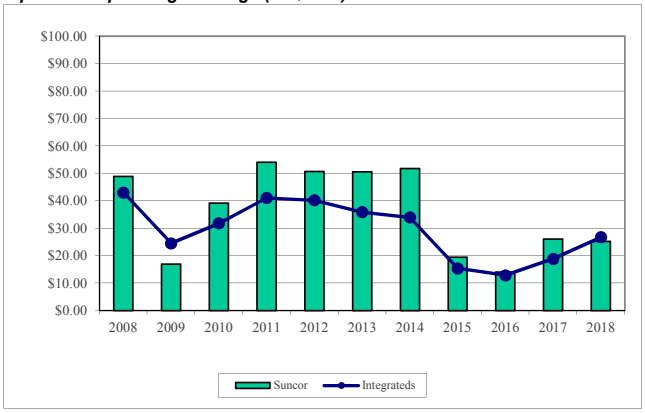
Upstream Net Revenue (US$/boe)



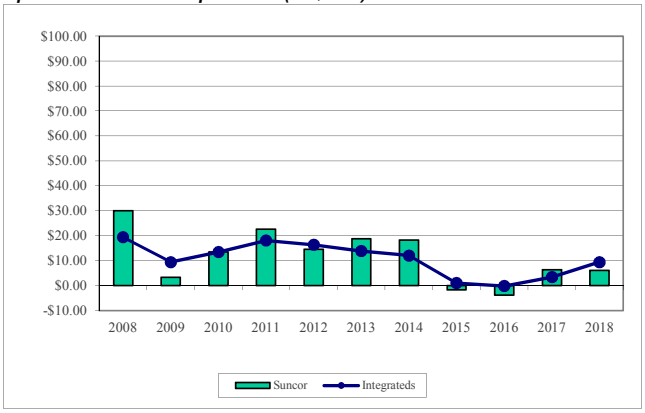
Production Costs (US$/boe)



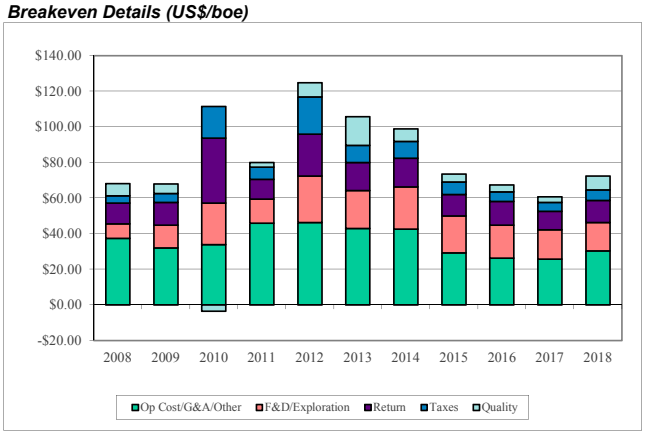
Upstream Operating Earnings (US$/boe)



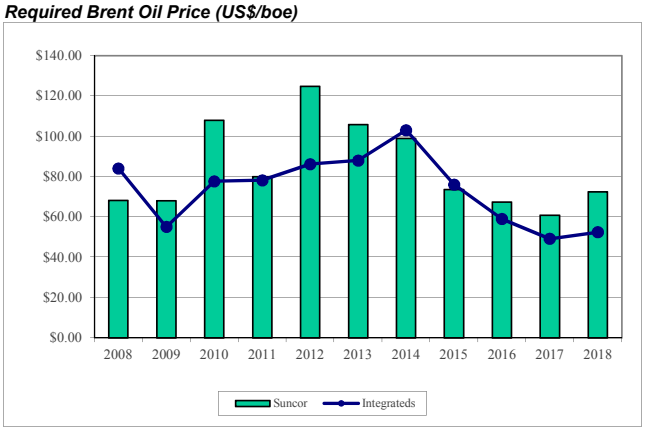
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



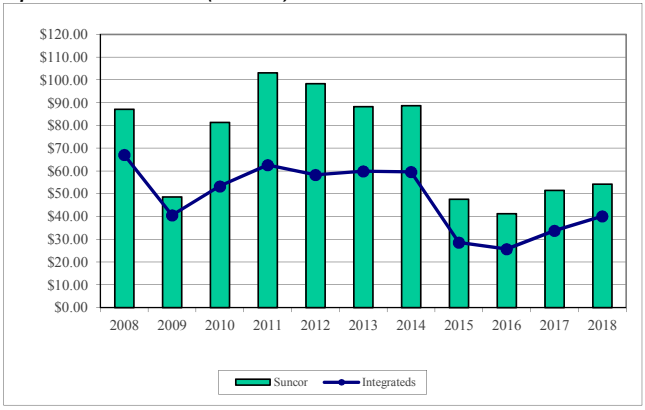
Source: BMO Capital Markets, Company Reports

Suncor Energy Inc. (SU - TSX, NYSE)

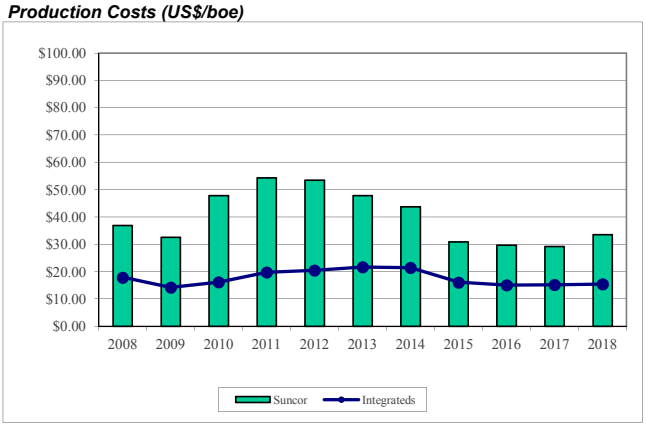
US$/boe, net

North America

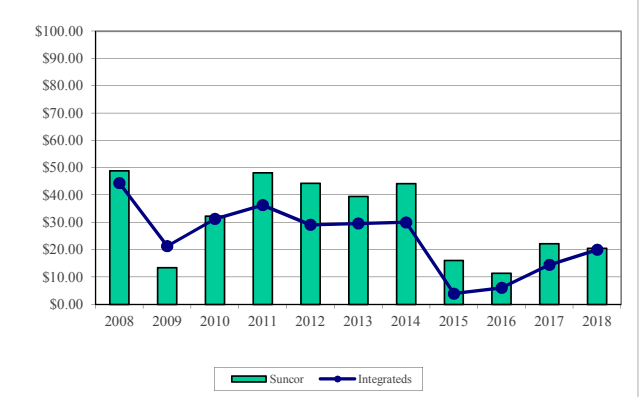
Upstream Net Revenue (US$/boe)



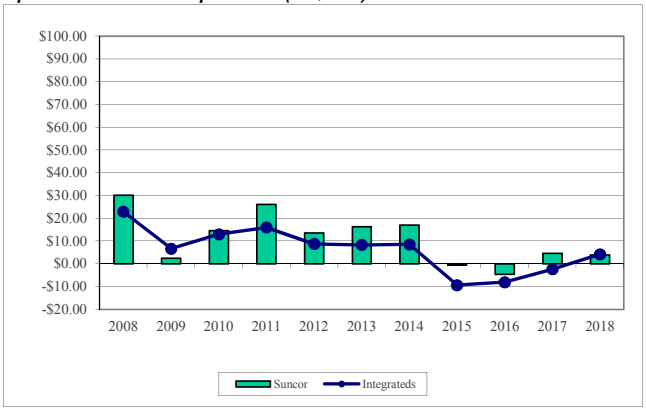
Production Costs (US$/boe)



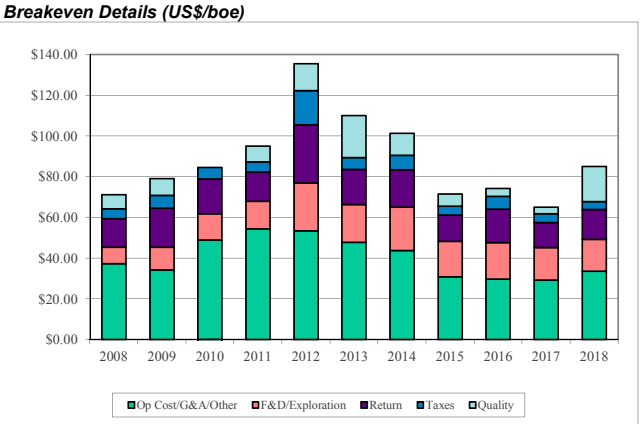
Upstream Operating Earnings (US$/boe)



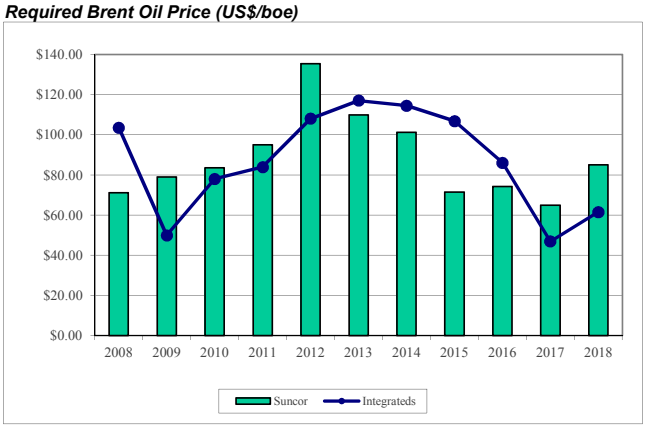
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

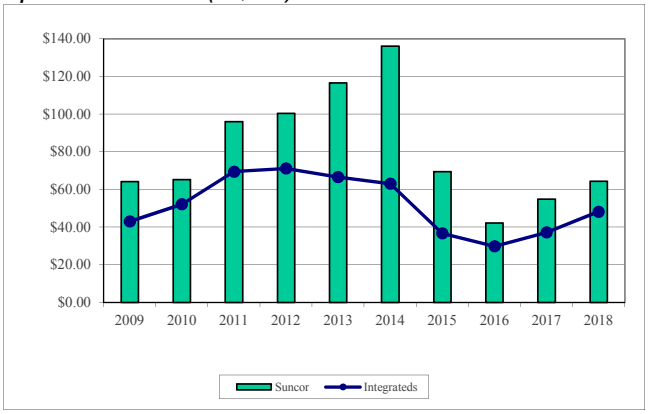
See pages F1 to F4 for analyst coverage.

Suncor Energy Inc. (SU - TSX, NYSE)

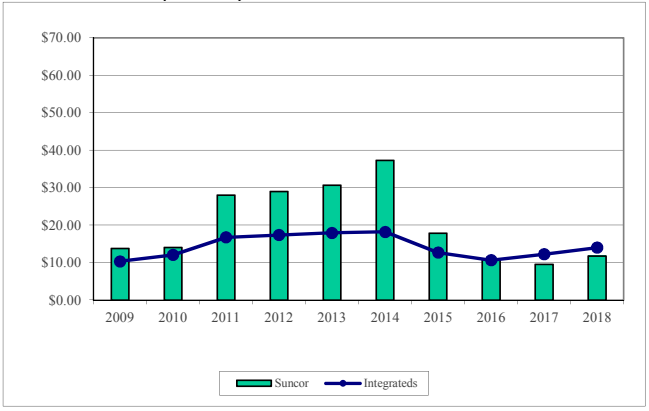
US$/boe, net

Total International

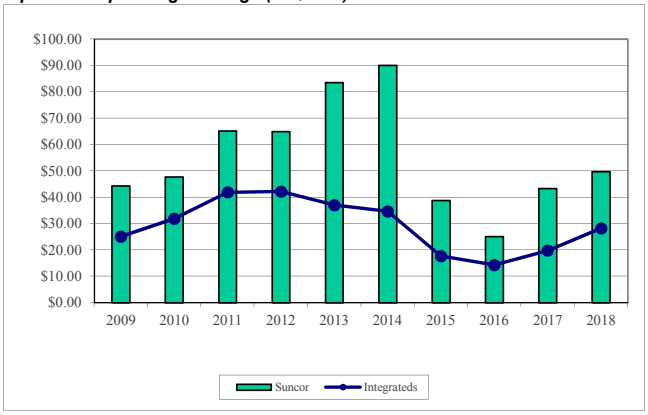
Upstream Net Revenue (US$/boe)



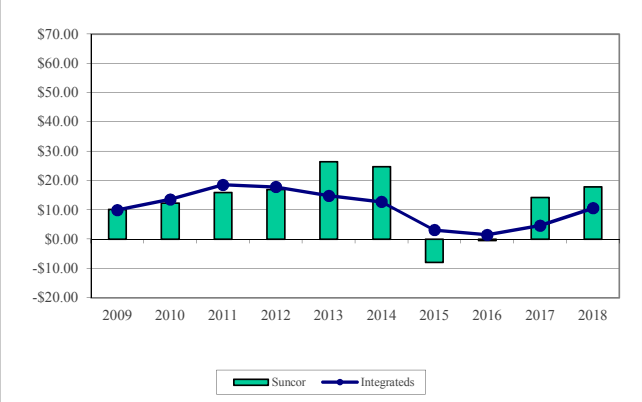
Production Costs (US$/boe)



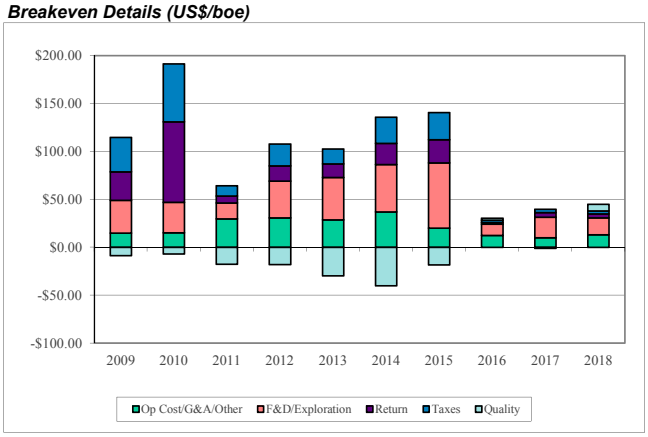
Upstream Operating Earnings (US$/boe)



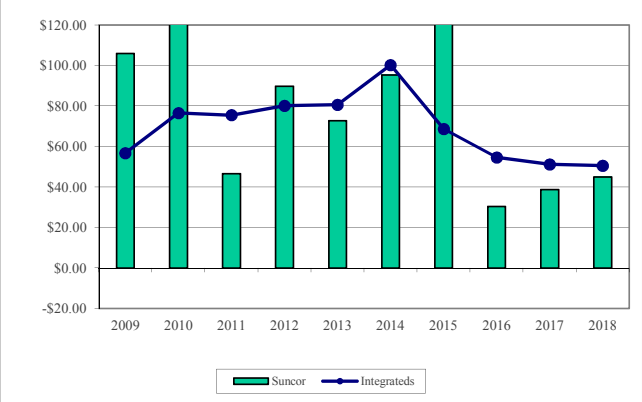
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

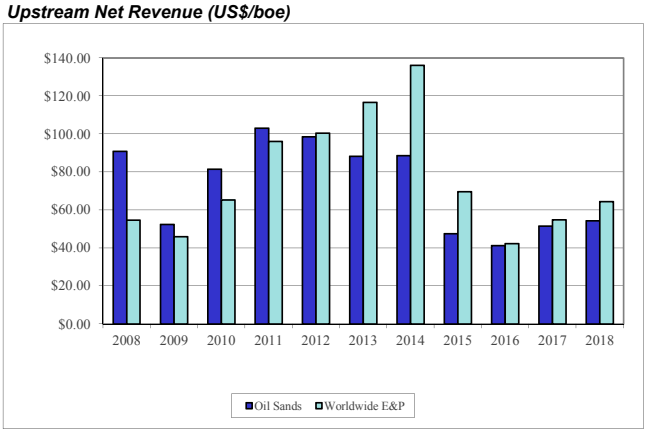
See pages F1 to F4 for analyst coverage.

Suncor Energy Inc. (SU - TSX, NYSE)

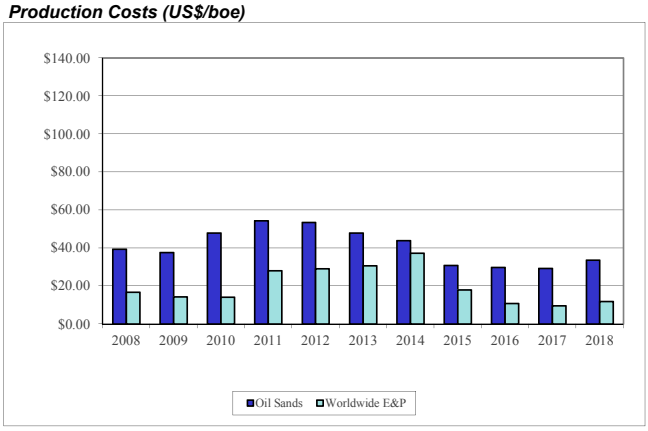
US$/boe, net

International Segments

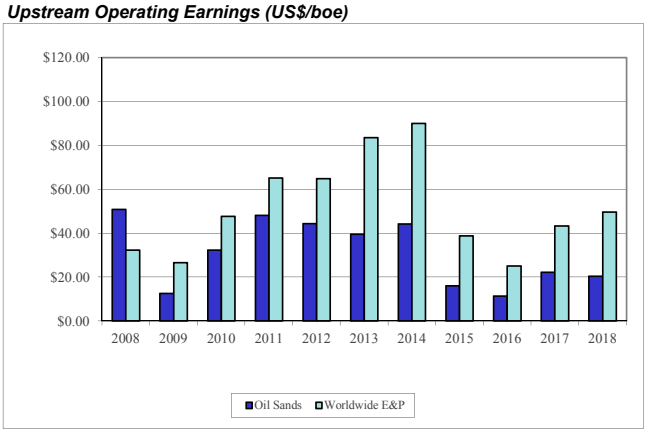
Upstream Net Revenue (US$/boe)



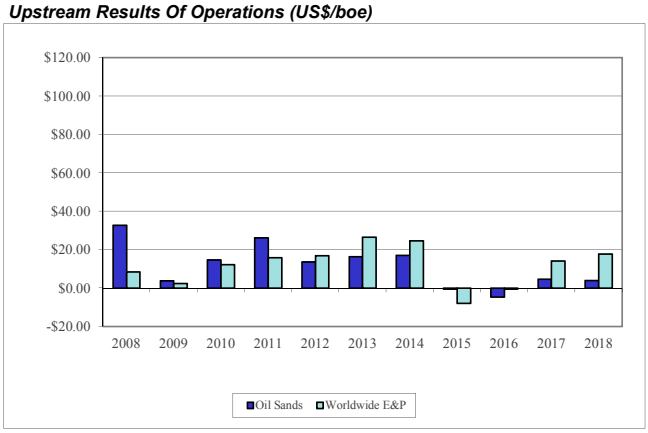
Production Costs (US$/boe)



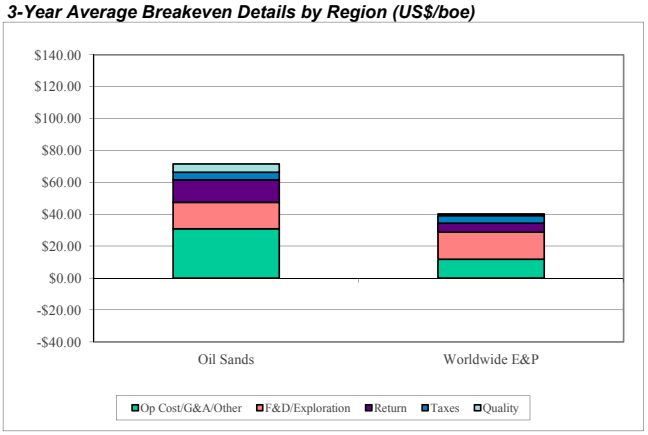
Upstream Operating Earnings (US$/boe)



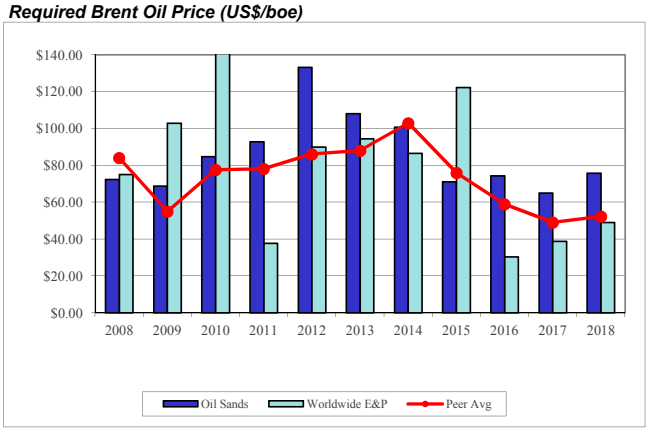
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Suncor Energy Inc. (SU - TSX, NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	8,725	4,828	13,500	17,718	15,673	16,945	15,960	9,055	8,840	12,381	14,327
Midstream / Downstream Revenue	20,158	10,551	16,857	22,077	22,559	21,508	20,143	13,818	11,412	12,334	15,421
Other	(1,341)	7,065	3,000	458	408	684	569	370	122	96	343
Total Revenue and Other Income	27,541	22,444	33,356	40,254	38,640	39,137	36,672	23,243	20,374	24,811	30,090
Crude Oil and Product Purchases	6,776	6,503	14,479	18,941	17,111	16,795	15,783	9,077	7,462	8,575	10,908
Production and Transportation Expenses	4,074	6,226	8,221	9,267	9,639	10,010	9,626	7,590	7,723	7,928	9,179
Marketing Expenses	11,052	6,502	2,523	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	85	236	191	117	309	313	332	374	218	80	94
General and Administrative	-	-	-	-	-	-	-	-	-	-	-
Depreciation, Depletion and Amortization	989	2,031	3,703	3,362	4,277	4,137	4,440	4,621	4,566	4,319	4,429
Interest, net	865	(429)	(29)	476	66	1,129	1,294	2,002	336	(190)	1,653
Other	686	103	(29)	939	2,193	560	1,040	1,166	4	(464)	(19)
Earnings Before Income Tax	2,954	1,135	4,124	7,151	5,044	6,192	4,157	(1,587)	65	4,562	3,846
Current Income Taxes	485	765	975	1,134	1,516	2,023	1,916	699	116	932	965
Future Income Taxes	454	(639)	539	1,663	743	371	(203)	(724)	(387)	192	340
Total Income Taxes	939	126	1,514	2,797	2,259	2,394	1,713	(25)	(271)	1,124	1,304
Minority Interest	-	-	-	-	-	-	-	-	(8)	-	-
Earnings From Continuing Operations	2,016	1,009	2,610	4,354	2,785	3,798	2,444	(1,562)	328	3,438	2,542
Discontinued Operations/Extraordinary Items	-	-	857	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	2,016	1,009	3,468	4,354	2,785	3,798	2,444	(1,562)	328	3,438	2,542
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	2,016	1,009	3,468	4,354	2,785	3,798	2,444	(1,562)	328	3,438	2,542

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	2,016	1,009	2,610	4,354	2,785	3,798	2,444	(1,562)	328	3,438	2,542
Charges and Credits Not Impacting Cash	1,501	1,554	4,319	5,053	5,165	4,588	4,331	4,097	4,334	4,542	4,777
Other	693	(98)	(944)	315	1,801	755	1,428	2,795	(137)	(933)	533
Cash Flow From Operations	4,210	2,465	5,986	9,722	9,751	9,141	8,204	5,330	4,524	7,047	7,851
Change in Working Capital / Other	(1)	(197)	(658)	382	(900)	668	(110)	61	(233)	(133)	315
Net Cash From Operating Activities	4,209	2,268	5,327	10,104	8,851	9,809	8,093	5,391	4,291	6,914	8,166
Total Capital Expenditures	(7,534)	(3,541)	(5,664)	(6,930)	(6,963)	(6,582)	(6,305)	(5,221)	(4,973)	(5,051)	(4,172)
Acquisitions, net	31	130	298	2,258	68	(500)	(110)	(282)	(684)	1,004	(885)
Other	343	(704)	2,344	20	246	737	198	200	(15)	177	(112)
Net Cash From Investing Activities	(7,159)	(4,114)	(3,022)	(4,652)	(6,649)	(6,345)	(6,216)	(5,303)	(5,671)	(3,870)	(5,169)
Net Change in Debt	2,948	2,048	(1,221)	(1,745)	427	(169)	944	(202)	(128)	(1,077)	525
Net Change in Common Stock	-	-	-	(290)	(1,452)	(1,627)	(1,513)	(34)	2,102	(1,090)	(2,356)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(170)	(353)	(593)	(672)	(756)	(1,063)	(1,349)	(1,291)	(1,418)	(1,638)	(1,801)
Other	179	36	79	-	188	109	224	74	100	548	216
Net Cash From Financing Activities	2,957	1,731	(1,735)	(2,707)	(1,593)	(2,750)	(1,695)	(1,452)	657	(3,256)	(3,416)
Effect of Exchange Rate on Cash	79	(21)	(15)	12	(19)	80	83	231	(57)	(52)	71
Net Increase/(Decrease) in Cash	86	(137)	555	2,758	590	793	265	(1,132)	(780)	(265)	(348)
Cash and Equivalents, Beginning of Year	504	590	454	1,009	3,767	4,357	5,151	4,303	3,059	2,326	2,062
Cash and Equivalents, End of Year	590	454	1,009	3,767	4,357	5,151	5,416	3,171	2,279	2,060	1,714

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Suncor Energy Inc. (SU - TSX, NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	3,053	7,338	10,209	14,289	14,188	14,271	12,604	8,167	8,325	7,385	6,715
Net Property, Plant and Equipment	26,709	50,636	53,690	53,202	55,492	55,621	54,161	47,889	53,836	58,252	57,304
Other Assets	920	3,462	4,240	8,158	6,816	6,168	5,393	4,658	4,853	3,371	5,120
Total Assets	30,682	61,436	68,138	75,648	76,496	76,060	72,158	60,714	67,014	69,008	69,139
Total Current Liabilities	3,329	6,913	8,279	10,430	9,588	10,301	7,566	5,588	6,132	7,369	7,957
Long-term Debt	7,428	12,204	11,331	10,121	9,944	9,909	11,311	11,344	12,166	10,311	10,721
Deferred Income Taxes	4,353	7,813	8,366	9,832	10,469	10,474	9,549	7,795	8,494	8,893	9,297
Other Liabilities and Deferred Credits	1,873	4,459	4,504	6,216	7,247	5,382	6,052	5,413	6,504	7,440	7,201
Total Liabilities	16,983	31,389	32,480	36,598	37,249	36,066	34,478	30,141	33,296	34,014	35,175
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	1,050	17,664	19,604	20,540	19,957	18,837	17,490	15,245	20,354	20,516	19,998
Contributed Surplus (Paid-in Capital)	272	463	490	551	579	581	552	496	444	437	417
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	12,286	12,125	16,228	18,154	18,921	20,465	19,182	13,842	12,158	13,418	12,719
Other / Comprehensive Income (Loss)	91	(205)	(664)	(195)	(210)	112	456	991	761	624	830
Total Shareholders' Equity	13,699	30,047	35,658	39,050	39,247	39,994	37,680	30,573	33,718	34,994	33,964
Total Liabilities and Shareholders' Equity	30,682	61,436	68,138	75,648	76,496	76,060	72,158	60,714	67,014	69,008	69,139
Return on Capital Employed (ROCE)	**14.4%**	**2.0%**	**7.9%**	**10.3%**	**6.3%**	**9.9%**	**7.1%**	**1.0%**	**5.0%**	**7.4%**	**8.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	8,183	7,073	13,381	16,327	15,553	16,560	15,743	8,920	8,446	11,687	13,342	33,475	58,138
Production Costs	3,467	4,268	5,903	7,345	7,194	7,563	6,968	5,065	5,298	5,748	7,179	18,225	30,258
Exploration	85	208	212	117	309	313	332	374	218	79	94	392	1,099
DD&A	759	1,720	3,425	2,871	3,647	3,507	3,755	3,986	3,963	3,709	3,852	11,524	19,265
G&A/Other	39	224	197	97	80	-94	-9	60	62	11	55	128	179
Pre-tax Results Of Operations	3,833	654	3,644	5,897	4,322	5,272	4,697	-566	-1,095	2,139	2,162	3,206	7,337
Income Taxes	1,004	184	1,196	2,229	2,034	2,002	1,712	-275	-315	706	688	1,078	2,515
Results Of Operations	2,830	469	2,449	3,668	2,288	3,270	2,985	-291	-780	1,433	1,474	2,128	4,821

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	8,183	6,045	8,111	10,956	10,634	11,493	12,081	7,083	6,760	9,442	10,860	27,062	46,226
Production Costs	3,467	4,047	4,767	5,776	5,773	6,231	5,965	4,593	4,868	5,357	6,726	16,950	27,508
Exploration	85	124	6	57	71	112	87	94	23	11	34	67	248
DD&A	759	1,369	1,280	1,390	2,479	2,302	2,802	2,504	2,919	2,916	3,106	8,941	14,247
G&A/Other	39	210	117	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	3,833	296	1,942	3,734	2,311	2,849	3,227	-107	-1,049	1,158	994	1,103	4,223
Income Taxes	1,004	-11	483	953	851	727	906	-27	-291	306	206	221	1,100
Results Of Operations	2,830	307	1,459	2,781	1,460	2,122	2,321	-80	-759	853	788	882	3,123

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	1,028	5,270	5,371	4,919	5,067	3,662	1,836	1,686	2,245	2,483	6,413	11,911
Production Costs	na	221	1,136	1,569	1,422	1,332	1,003	472	430	392	454	1,275	2,750
Exploration	na	84	206	61	238	201	245	280	196	69	60	325	850
DD&A	na	351	2,145	1,481	1,169	1,205	953	1,482	1,043	793	746	2,582	5,018
G&A/Other	na	14	81	97	80	-94	-9	60	62	11	55	128	179
Pre-tax Results Of Operations	na	358	1,702	2,163	2,010	2,423	1,470	-459	-45	981	1,168	2,103	3,114
Income Taxes	na	195	712	1,276	1,183	1,275	806	-248	-24	400	482	857	1,416
Results Of Operations	na	163	990	887	828	1,148	664	-211	-21	581	686	1,246	1,699

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Suncor Energy Inc. (SU - TSX, NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide - Including Oil Sands Mining & In-situ													
Net Revenue	$87.06	$50.40	$74.19	$100.65	$99.05	$95.32	$96.48	$50.88	$41.42	$52.13	$55.88	$50.20	$57.83
Production Costs	$36.89	$30.41	$32.73	$45.28	$45.82	$43.53	$42.70	$28.90	$25.98	$25.64	$30.07	$27.33	$30.10
Exploration	$0.90	$1.48	$1.17	$0.72	$1.97	$1.80	$2.04	$2.14	$1.07	$0.35	$0.39	$0.59	$1.09
DD&A	$8.08	$12.26	$18.99	$17.70	$23.23	$20.19	$23.01	$22.74	$19.43	$16.54	$16.13	$17.28	$19.16
G&A/Other	$0.41	$1.59	$1.09	$0.60	$0.51	-$0.54	-$0.06	$0.34	$0.30	$0.05	$0.23	$0.19	$0.18
Pre-tax Results Of Operations	$40.78	$4.66	$20.21	$36.35	$27.52	$30.35	$28.79	-$3.23	-$5.37	$9.54	$9.05	$4.81	$7.30
Income Taxes	$10.68	$1.31	$6.63	$13.74	$12.95	$11.53	$10.49	-$1.57	-$1.55	$3.15	$2.88	$1.62	$2.50
Results Of Operations	$30.10	$3.35	$13.58	$22.61	$14.57	$18.82	$18.30	-$1.66	-$3.82	$6.39	$6.17	$3.19	$4.80

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America - Oil Sands Mining & In-situ													
Net Revenue	$87.06	$48.62	$81.38	$103.08	$98.44	$88.21	$88.67	$47.58	$41.22	$51.54	$54.24	$49.43	$55.52
Production Costs	$36.89	$32.55	$47.83	$54.34	$53.44	$47.82	$43.78	$30.85	$29.68	$29.24	$33.59	$30.96	$33.04
Exploration	$0.90	$1.00	$0.06	$0.53	$0.66	$0.86	$0.64	$0.63	$0.14	$0.06	$0.17	$0.12	$0.30
DD&A	$8.08	$11.01	$12.84	$13.08	$22.94	$17.67	$20.57	$16.82	$17.80	$15.92	$15.51	$16.33	$17.11
G&A/Other	$0.41	$1.69	$1.17	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$40.78	$2.38	$19.49	$35.13	$21.40	$21.86	$23.68	-$0.72	-$6.40	$6.32	$4.97	$2.01	$5.07
Income Taxes	$10.68	-$0.09	$4.85	$8.97	$7.88	$5.58	$6.65	-$0.18	-$1.77	$1.67	$1.03	$0.40	$1.32
Results Of Operations	$30.10	$2.47	$14.64	$26.17	$13.52	$16.28	$17.04	-$0.54	-$4.63	$4.65	$3.94	$1.61	$3.75

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International*													
Net Revenue	na	64.25	65.31	96.02	100.40	116.66	136.06	69.53	42.24	54.79	64.42	$53.70	$68.95
Production Costs	na	13.82	14.08	28.05	29.02	30.66	37.25	17.88	10.77	9.56	11.77	$10.68	$15.92
Exploration	na	5.23	2.55	1.09	4.86	4.63	9.12	10.61	4.90	1.67	1.56	$2.72	$4.92
DD&A	na	21.97	26.59	26.48	23.85	27.75	35.40	56.12	26.15	19.35	19.36	$21.62	$29.05
G&A/Other	na	0.88	1.00	1.74	1.63	-2.17	-0.34	2.28	1.55	0.26	1.42	$1.07	$1.03
Pre-tax Results Of Operations	na	22.35	21.10	38.67	41.03	55.79	54.62	-17.37	-1.14	23.94	30.30	17.61	18.03
Income Taxes	na	12.17	8.83	22.81	24.14	29.36	29.95	-9.39	-0.61	9.76	12.51	$7.18	$8.19
Results Of Operations	na	10.18	12.27	15.86	16.89	26.43	24.67	-7.99	-0.52	14.18	17.79	10.43	9.83

Segment Breakdown:

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Oil Sands (Mining & In-situ)													
Net Revenue	$90.92	$52.43	$81.38	$103.08	$98.44	$88.21	$88.67	$47.58	$41.22	$51.54	$54.24	$49.43	$55.52
Production Costs	$39.29	$37.65	$47.83	$54.34	$53.44	$47.82	$43.78	$30.85	$29.68	$29.24	$33.59	$30.96	$33.04
Exploration	$0.19	$0.09	$0.06	$0.53	$0.66	$0.86	$0.64	$0.63	$0.14	$0.06	$0.17	$0.12	$0.30
DD&A	$6.51	$8.37	$12.84	$13.08	$22.94	$17.67	$20.57	$16.82	$17.80	$15.92	$15.51	$16.33	$17.11
G&A/Other	$0.62	$2.11	$1.17	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$44.31	$4.21	$19.49	$35.13	$21.40	$21.86	$23.68	-$0.72	-$6.40	$6.32	$4.97	$2.01	$5.07
Income Taxes	$11.62	$0.43	$4.85	$8.97	$7.88	$5.58	$6.65	-$0.18	-$1.77	$1.67	$1.03	$0.40	$1.32
Results Of Operations	$32.69	$3.79	$14.64	$26.17	$13.52	$16.28	$17.04	-$0.54	-$4.63	$4.65	$3.94	$1.61	$3.75

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide Conventional - E&P													
Net Revenue	$54.61	$45.86	$65.31	$96.02	$100.40	$116.66	$136.06	$69.53	$42.24	$54.79	$64.42	$53.70	$68.95
Production Costs	$16.70	$14.21	$14.08	$28.05	$29.02	$30.66	$37.25	$17.88	$10.77	$9.56	$11.77	$10.68	$15.92
Exploration	$6.89	$4.59	$2.55	$1.09	$4.86	$4.63	$9.12	$10.61	$4.90	$1.67	$1.56	$2.72	$4.92
DD&A	$21.22	$20.96	$26.59	$26.48	$23.85	$27.75	$35.40	$56.12	$26.15	$19.35	$19.36	$21.62	$29.05
G&A/Other	-$1.32	$0.45	$1.00	$1.74	$1.63	-$2.17	-$0.34	$2.28	$1.55	$0.26	$1.42	$1.07	$1.03
Pre-tax Results Of Operations	$11.13	$5.65	$21.10	$38.67	$41.03	$55.79	$54.62	-$17.37	-$1.14	$23.94	$30.30	$17.61	$18.03
Income Taxes	$2.74	$3.29	$8.83	$22.81	$24.14	$29.36	$29.95	-$9.39	-$0.61	$9.76	$12.51	$7.18	$8.19
Results Of Operations	$8.39	$2.36	$12.27	$15.86	$16.89	$26.43	$24.67	-$7.99	-$0.52	$14.18	$17.79	$10.43	$9.83

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Suncor Energy Inc. (SU - TSX, NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	147.9	367.1	539.4	344.8	249.6	180.8	21.7	27.0	14.8	17.5	2.7	11.7	16.8
Liquids Production (b/d)	232,877	323,288	404,230	386,983	388,588	445,824	443,408	475,774	556,180	611,275	653,669	607,042	548,062
Total Production (boe/d)	257,534	384,475	494,122	444,442	430,189	475,961	447,027	480,268	558,655	614,192	654,126	608,991	550,854
% Gas Production	10%	16%	18%	13%	10%	6%	1%	1%	0%	0%	0%	0%	1%
% Oil Production	90%	84%	82%	87%	90%	94%	99%	99%	100%	100%	100%	100%	99%
Proven Reserves:													
Gas Reserves (bcf)	441.0	1,693.0	1,124.0	1,007.0	744.7	44.0	42.0	34.0	28.0	22.0	14.0	21.3	28.0
Oil Reserves (mmbbls)	2,481.0	3,270.0	5,676.0	3,224.4	3,383.5	4,256.0	4,012.0	4,034.0	4,405.0	4,271.0	4,102.0	4,259.3	4,164.8
Total Proven Reserves (mmboe)	2,554.5	3,552.2	5,863.3	3,392.2	3,507.6	4,263.3	4,019.0	4,039.7	4,409.7	4,274.7	4,104.3	4,262.9	4,169.5
% Gas Reserves	3%	8%	3%	5%	4%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	97%	92%	97%	95%	96%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	27.2	25.3	32.5	20.9	22.3	24.5	24.6	23.0	21.6	19.1	17.2	19.3	21.1
Proven Reserve Additions:													
Gas Additions (bcf)	67.0	1,386.0	(512.2)	8.8	(171.2)	(634.7)	5.9	1.8	(0.6)	0.4	(7.0)	(7.2)	0.6
Oil Additions (mmbbls)	71.0	1,086.0	37.2	276.6	300.9	1,035.2	-82.2	195.7	574.0	89.1	69.6	732.7	846.2
Total Additions (mmboe)	82.2	1,317.0	(48.1)	278.1	272.4	929.4	(81.2)	196.0	573.9	89.2	68.4	731.5	846.3
Conventional E&P	11.2	541.0	(76.5)	54.9	(15.4)	(106.2)	41.6	(34.9)	23.9	27.0	53.2	104.1	110.7
Oil Sands	71.0	776.0	28.4	223.2	287.8	1,035.6	-122.7	230.9	550.0	62.2	15.2	627.4	735.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	75.2	384.3	27.4	1.8	3.8	902.2	2.0	0.0	0.0	0.0	2.7	2.7	4.7
Acquisitions	0.0	948.5	0.0	0.0	0.0	0.0	0.0	0.0	546.4	35.7	80.4	662.6	662.6
Dispositions	0.0	(1.3)	(122.9)	(19.6)	-	(124.7)	(4.5)	-	-	-	(3.3)	(3.3)	(7.9)
Revisions of Estimates	7.0	(14.5)	47.4	215.2	268.6	151.9	-78.6	196.0	27.5	53.4	-11.4	69.5	186.9
Components as % of Total Additions:													
Extensions, Discoveries and Additions	91.5%	29.2%	-56.9%	0.6%	1.4%	97.1%	-2.5%	0.0%	0.0%	0.0%	3.9%	0.4%	0.6%
Acquisitions	0.0%	72.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	95.2%	40.1%	117.6%	90.6%	78.3%
Dispositions	0.0%	-0.1%	255.5%	-7.0%	0.0%	-13.4%	5.6%	0.0%	0.0%	0.0%	-4.9%	-0.5%	-0.9%
Revisions of Estimates	8.5%	-1.1%	-98.5%	77.4%	98.6%	16.3%	96.9%	100.0%	4.8%	59.9%	-16.6%	9.5%	22.1%
Additions as % of Production:													
Gas	124.1%	1034.3%	-260.2%	7.0%	-187.9%	-961.7%	74.8%	18.7%	-10.7%	6.1%	-700.0%	-56.2%	1.9%
Oil	83.5%	920.3%	25.2%	195.9%	212.2%	636.2%	-50.8%	112.7%	282.8%	39.9%	29.2%	110.2%	84.6%
Total	87.4%	938.5%	-26.7%	171.4%	173.5%	535.0%	-49.7%	111.8%	281.5%	39.8%	28.7%	109.7%	84.2%
Additions as % of Reserves:													
Gas	15.2%	81.9%	-45.6%	0.9%	-23.0%	-1442.5%	14.1%	5.4%	-2.1%	1.8%	-50.0%	-33.7%	2.0%
Oil	2.9%	33.2%	0.7%	8.6%	8.9%	24.3%	-2.0%	4.9%	13.0%	2.1%	1.7%	17.2%	20.3%
Total	3.2%	37.1%	-0.8%	8.2%	7.8%	21.8%	-2.0%	4.9%	13.0%	2.1%	1.7%	17.2%	20.3%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$125	$332	$404	$270	$435	$206	$414	$330	$81	$89	$194	$365	$1,108
Development	$6,842.2	$2,866.3	$4,335.8	$5,006.7	$4,854.0	$4,720.1	$4,509.5	$2,910.9	$3,293.9	$3,939.5	$3,240.1	$10,473.6	$17,893.9
Acquisitions	$17.9	$20,203.2	$36.9	$232.7	$468.3	$35.0	$0.9	$296.0	$8,732.0	$258.3	$970.2	$9,960.5	$10,257.4
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$6,985.6	$23,401.5	$4,776.6	$5,509.4	$5,757.5	$4,960.9	$4,924.3	$3,536.6	$12,106.8	$4,287.3	$4,404.8	$20,798.8	$29,259.7
Conventional E&P	$334.8	$15,150.6	$1,444.0	$836.6	$1,276.8	$966.4	$1,674.6	$335.2	$164.7	$540.5	$843.6	$1,548.8	$3,558.6
Oil Sands	$6,650.7	$8,250.9	$3,332.7	$4,672.8	$4,480.7	$3,994.6	$3,249.6	$3,201.5	$11,942.1	$3,746.7	$3,561.2	$19,250.0	$25,701.1
Expenditures as % of Total:													
Exploration	1.8%	1.4%	8.5%	4.9%	7.6%	4.2%	8.4%	9.3%	0.7%	2.1%	4.4%	1.8%	3.8%
Development	97.9%	12.2%	90.8%	90.9%	84.3%	95.1%	91.6%	82.3%	27.2%	91.9%	73.6%	50.4%	61.2%
Acquisitions	0.3%	86.3%	0.8%	4.2%	8.1%	0.7%	0.0%	8.4%	72.1%	6.0%	22.0%	47.9%	35.1%
Cashflow (US$million)	$3,673.9	$2,397.7	$6,085.5	$6,656.6	$6,244.1	$7,089.3	$7,072.5	$4,069.1	$3,401.4	$5,221.8	$5,420.1	$14,043.3	$25,184.9
Cashflow (US$/boe)	$39.08	$17.09	$33.74	$41.03	$39.77	$40.81	$43.35	$23.21	$16.68	$23.29	$22.70	$21.06	$25.05
Recycle Ratio*	5.4x	1.5x	1.5x	3.2x	1.7x	2.1x	2.0x	1.2x	1.0x	1.5x	1.5x	1.3x	1.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$84.80	$8.65	$63.37	$24.31	$19.42	$4.67	-$64.24	$16.54	$122.87	$75.40	-$395.80	$150.07	$99.20
Acquisition Costs	nm	$21.30	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	$85.02	$17.75	$63.86	$25.38	$21.14	$4.71	-$64.25	$18.05	$21.10	$48.07	$61.39	$28.30	$34.26
All Sources - Adjusted*	$7.23	$11.36	$22.26	$12.84	$24.09	$19.48	$21.50	$18.59	$17.40	$16.06	$15.49	$16.26	$17.50
Exploration & Development (excl. revisions)	$92.70	$8.32	$172.98	nm	$1,387.81	$5.46	nm	nm	nm	nm	nm	nm	$4,046.41
Acquisition Costs	nm	$21.30	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	$92.93	$17.56	$174.33	$3,021.44	$1,510.68	$5.50	$2,469.27	nm	$22.16	$119.93	$52.98	$31.26	$43.85
Segmented F&D Costs (US$/boe):													
Oil Sands - Adjusted*	$6.51	$8.37	$12.84	$13.08	$22.94	$17.67	$20.57	$16.82	$17.80	$15.92	$15.51	$16.33	$17.11
Worldwide E&P	$29.99	$27.94	$31.09	$11.22	$33.70	$52.22	$36.32	$57.31	$6.89	$20.04	$14.92	$14.42	$27.10
All Sources - Adjusted*	$7.23	$11.36	$22.26	$12.84	$24.09	$19.48	$21.50	$18.59	$17.40	$16.06	$15.49	$16.26	$17.50
3-Yr Average All Sources - Adjusted*	$6.28	$10.15	$19.11	$13.40	$17.35	$18.66	$21.46	$19.64	$18.87	$17.20	$16.26		
North America - As Reported**	$85.02	$14.82	$117.54	$20.94	$15.57	$3.86	-$26.47	$13.87	$21.71	$60.23	$234.14	$22.31	$18.86
International - As Reported**	na	$29.11	-$18.88	$15.23	-$82.79	-$9.10	$40.28	-$9.60	$6.89	$20.04	$15.85	$29.40	$29.40

Notes: Reserve estimates reported after royalties
*We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions
**Starting in 2010, "North America" includes oil sands only - conventional included with Worldwide E&P segment (International)
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Suncor Energy Inc. (SU - TSX, NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide - Including Oil Sands Mining & In-situ													
Operating Costs	36.89	30.41	32.73	45.28	45.82	43.53	42.70	28.90	25.98	25.64	25.64	27.33	30.10
Exploration Expense	0.90	1.48	1.17	0.72	1.97	1.80	2.04	2.14	1.07	0.35	0.35	0.59	1.09
G&A/Other	0.41	1.59	1.09	0.60	0.51	(0.54)	(0.06)	0.34	0.30	0.05	0.05	0.19	0.18
F&D Costs	7.23	11.36	22.26	12.84	24.09	19.48	21.50	18.59	17.40	16.06	16.06	16.26	17.50
Return on Capital	11.69	12.70	36.40	11.15	23.55	15.70	16.23	12.07	13.34	10.39	10.39	12.10	12.85
Income Taxes	4.14	4.98	17.77	6.78	20.93	9.61	9.31	6.92	5.39	5.12	5.12	5.49	6.41
Breakeven Oil Price	61.27	62.53	111.42	77.37	116.86	89.57	91.72	68.96	63.49	57.61	57.61	61.96	68.14
Quality Differential	6.86	5.39	(3.53)	2.60	7.80	16.10	7.19	4.52	3.84	3.11	3.11	4.90	5.28
Required WTI Price	68.13	67.92	107.89	79.97	124.66	105.67	98.92	73.48	67.33	60.72	60.72	66.86	73.42

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America - Including Oil Sands Mining & In-situ													
Operating Costs	36.89	32.55	47.83	54.34	53.44	47.82	43.78	30.85	29.68	29.24	29.24	30.96	33.04
Exploration Expense	0.90	1.00	0.06	0.53	0.66	0.86	0.64	0.63	0.14	0.06	0.06	0.12	0.30
G&A/Other	0.41	1.69	1.17	-	-	-	-	-	-	-	-	-	-
F&D Costs	7.23	10.17	12.84	13.08	22.94	17.67	20.57	16.82	17.80	15.92	15.92	16.33	17.11
Return on Capital	13.95	19.12	17.08	14.37	28.57	17.23	18.40	12.94	16.49	12.18	12.18	14.29	14.60
Income Taxes	4.95	6.37	5.66	4.93	16.66	5.90	7.18	4.31	6.32	4.37	4.37	4.75	5.02
Breakeven Oil Price	64.33	70.89	84.63	87.25	122.27	89.48	90.56	65.55	70.42	61.77	61.77	66.46	70.07
Quality Differential	6.92	8.15	(1.04)	7.87	13.26	20.52	10.71	5.98	3.90	3.25	3.25	8.14	8.22
Required WTI Price	71.25	79.04	83.60	95.12	135.53	110.00	101.27	71.53	74.33	65.02	65.02	74.60	78.30

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	13.82	14.08	28.05	29.02	30.66	37.25	17.88	10.77	9.56	11.77	10.68	15.92
Exploration Expense	na	5.23	2.55	1.09	4.86	4.63	9.12	10.61	4.90	1.67	1.56	2.72	4.92
G&A/Other	na	0.88	1.00	1.74	1.63	(2.17)	(0.34)	2.28	1.55	0.26	1.42	1.07	1.03
F&D Costs	na	29.11	29.40	15.23	33.70	39.68	40.28	57.31	6.89	20.04	15.85	14.42	28.07
Return on Capital	na	29.86	84.01	7.40	15.91	14.10	22.27	24.08	1.85	4.80	4.36	3.72	9.77
Income Taxes	na	35.67	60.47	10.64	22.74	15.66	27.04	28.30	2.18	3.31	3.06	3.09	9.38
Breakeven Oil Price	na	114.56	191.51	64.13	107.87	102.55	135.62	140.46	28.15	39.65	38.03	35.70	69.10
Quality Differential	na	(8.67)	(6.93)	(17.61)	(18.06)	(29.79)	(40.30)	(18.31)	2.21	(0.95)	6.86	2.71	(10.10)
Required WTI Price	na	105.89	184.59	46.53	89.81	72.76	95.32	122.15	30.36	38.70	44.90	38.41	59.00

Operating Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Oil Sands (Mining & In-situ)													
Operating Costs	39.29	37.65	47.83	54.34	53.44	47.82	43.78	30.85	29.68	29.24	33.59	30.96	33.04
Exploration Expense	0.19	0.09	0.06	0.53	0.66	0.86	0.64	0.63	0.14	0.06	0.17	0.12	0.30
G&A/Other	0.62	2.11	1.17	-	-	-	-	-	-	-	-	-	-
F&D Costs	6.51	8.37	12.84	13.08	22.94	17.67	20.57	16.82	17.80	15.92	15.51	16.33	17.11
Return on Capital	13.83	12.16	17.08	14.37	28.57	17.23	18.40	12.94	16.49	12.18	14.69	14.29	14.60
Income Taxes	4.92	1.37	5.66	4.93	16.66	5.90	7.18	4.31	6.32	4.37	3.84	4.75	5.02
Breakeven Oil Price	65.36	61.75	84.63	87.25	122.27	89.48	90.56	65.55	70.42	61.77	67.80	66.46	70.07
Quality Differential	6.97	6.94	0.08	5.59	10.88	18.63	10.18	5.56	3.90	3.25	8.00	5.05	6.18
Required WTI Price	72.33	68.69	84.72	92.85	133.14	108.11	100.74	71.11	74.33	65.02	75.80	71.51	76.25

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide Conventional E&P													
Operating Costs	16.70	14.21	14.08	28.05	29.02	30.66	37.25	17.88	10.77	9.56	11.77	10.68	15.92
Exploration Expense	6.89	4.59	2.55	1.09	4.86	4.63	9.12	10.61	4.90	1.67	1.56	2.72	4.92
G&A/Other	(1.32)	0.45	1.00	1.74	1.63	(2.17)	(0.34)	2.28	1.55	0.26	1.42	1.07	1.03
F&D Costs	29.99	27.94	31.09	11.22	33.70	52.22	36.32	57.31	6.89	20.04	14.92	14.42	27.10
Return on Capital	14.68	24.31	88.82	5.43	15.97	18.44	20.09	24.08	1.86	4.83	10.26	5.65	12.23
Income Taxes	4.78	33.95	63.93	7.81	22.83	20.49	24.40	28.31	2.19	3.33	7.21	4.69	11.74
Breakeven Oil Price	71.71	105.44	201.47	55.34	108.02	124.27	126.85	140.47	28.17	39.70	47.15	39.23	72.94
Quality Differential	3.25	(2.63)	(6.93)	(17.61)	(18.06)	(29.79)	(40.30)	(18.31)	2.21	(0.95)	1.86	1.04	(11.10)
Required WTI Price	74.97	102.82	194.54	37.73	89.96	94.48	86.55	122.16	30.37	38.75	49.01	40.27	61.84

Source: BMO Capital Markets, Company Reports

Suncor Energy Inc. (SU - TSX, NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	33.93	37.30	50.31	49.95	45.89	42.95	29.11	26.07	26.07	25.74	30.09	27.40	30.22
Exploration Expense	1.65	1.34	0.80	2.15	1.90	2.05	2.15	1.07	1.07	0.36	0.39	0.59	1.10
G&A/Other	1.78	1.25	0.67	0.56	(0.57)	(0.06)	0.35	0.30	0.30	0.05	0.23	0.19	0.18
F&D Costs (1-Year)	12.44	25.69	13.02	23.59	21.01	21.60	15.69	17.41	17.41	16.06	15.51	16.27	17.66
Return on Capital	23.52	23.44	11.61	23.83	17.65	17.53	11.05	13.57	13.57	10.41	14.13	12.79	13.69
Income Taxes	9.22	11.44	7.05	21.19	10.81	10.05	6.34	5.49	5.49	5.12	6.60	5.80	6.84
Breakeven Oil Price	**82.54**	**100.44**	**83.46**	**121.26**	**96.68**	**94.12**	**64.69**	**63.91**	**63.91**	**57.74**	**66.95**	**63.03**	**69.68**
Quality Differential	6.01	(4.03)	2.89	8.50	16.97	7.23	4.55	3.85	3.85	3.12	7.76	4.91	5.30
Required WTI Price	**88.55**	**96.41**	**86.35**	**129.76**	**113.65**	**101.35**	**69.24**	**67.77**	**67.77**	**60.86**	**74.71**	**67.95**	**74.99**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	38.68	33.93	37.30	50.31	49.95	45.89	42.95	29.11	26.07	25.74	30.09	27.40	30.22
Exploration Expense	0.95	1.65	1.34	0.80	2.15	1.90	2.05	2.15	1.07	0.36	0.39	0.59	1.10
G&A/Other	0.43	1.78	1.25	0.67	0.56	(0.57)	(0.06)	0.35	0.30	0.05	0.23	0.19	0.18
F&D Costs (1-Year)	5.88	6.32	17.62	9.79	19.08	50.04	67.32	55.77	13.43	24.21	4.47	11.63	33.04
Return on Capital	12.26	12.28	16.00	8.74	19.31	41.76	54.45	38.94	10.35	15.71	4.10	9.07	25.21
Income Taxes	4.35	4.81	7.81	5.31	17.16	25.57	31.23	22.33	4.18	7.73	1.91	4.11	12.58
Breakeven Oil Price	**62.55**	**60.78**	**81.31**	**75.63**	**108.21**	**164.58**	**197.93**	**148.65**	**55.41**	**73.79**	**41.19**	**52.99**	**102.32**
Quality Differential	7.19	6.01	(4.03)	2.89	8.50	16.97	7.23	4.55	3.85	3.12	7.76	4.91	5.30
Required WTI Price	**69.75**	**66.79**	**77.28**	**78.52**	**116.71**	**181.55**	**205.17**	**153.20**	**59.26**	**76.91**	**48.95**	**57.90**	**107.63**

Source: BMO Capital Markets, Company Reports

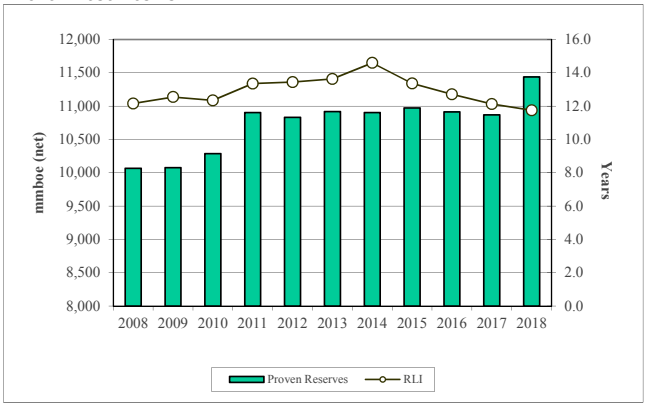
See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE) US$, net

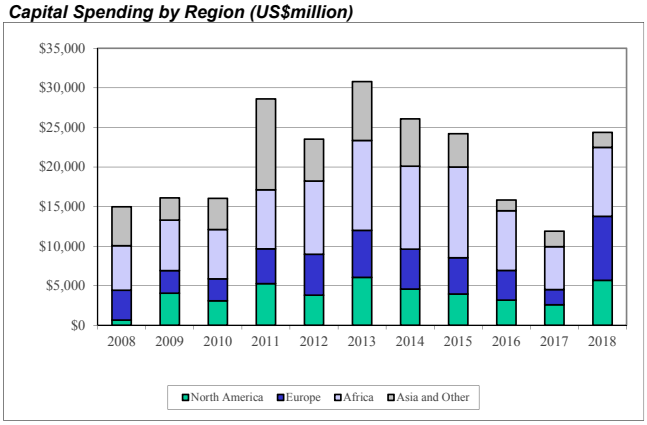
- Total's results of upstream operations improved to $9.33/boe versus $5.36/boe in 2017.
- F&D costs increased to $13.77/boe in 2018 from $12.55/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $16.37/boe from $15.32/boe, while the costs for PD reserves fell to $10.56/boe from $12.57/boe the previous year.
- Based on 2018 results, we estimate that Total requires a Brent breakeven oil price of $66.68/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a breakeven oil price of $53.62/boe.
- The company reported ROCE of 9.7% in 2018 versus 7.7% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Euros to U.S. Dollars using average annual exchange rates.

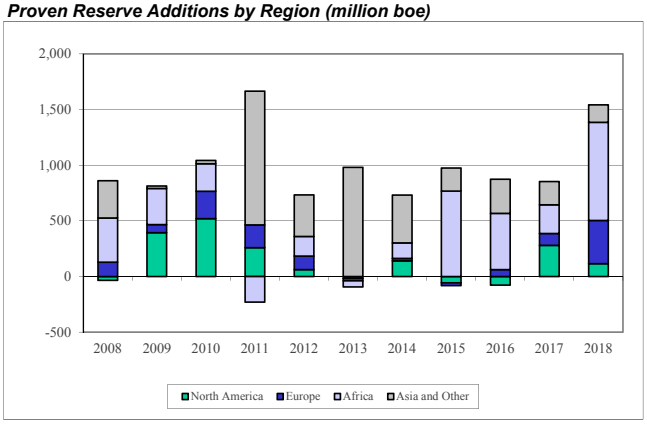
Proven Reserves vs RLI



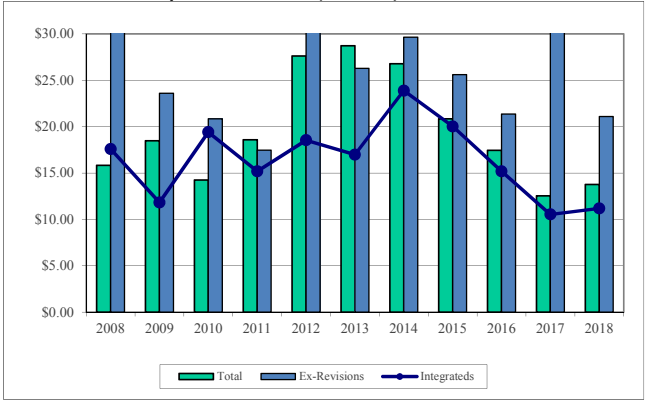
Capital Spending by Region (US$million)



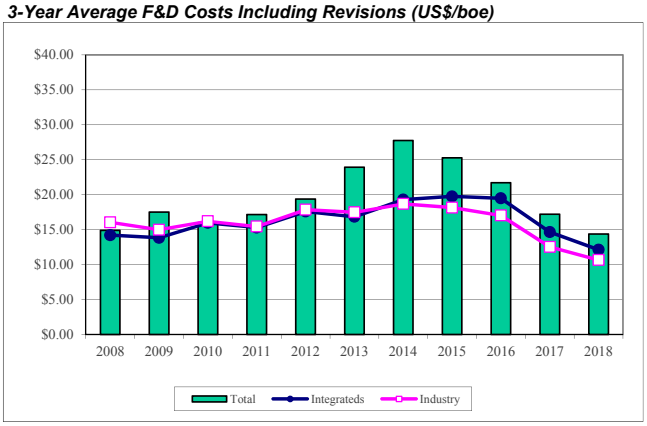
Proven Reserve Additions by Region (million boe)



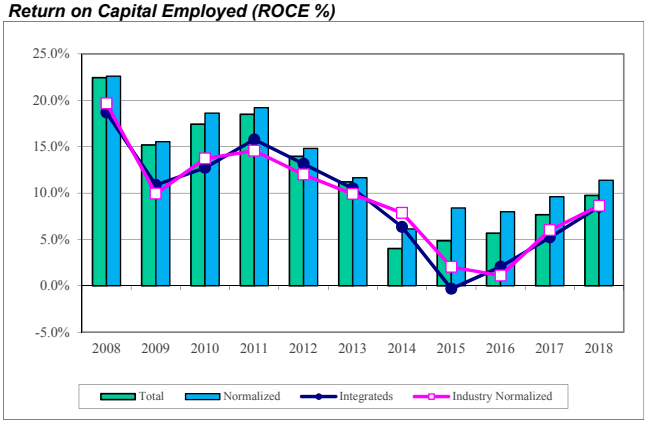
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



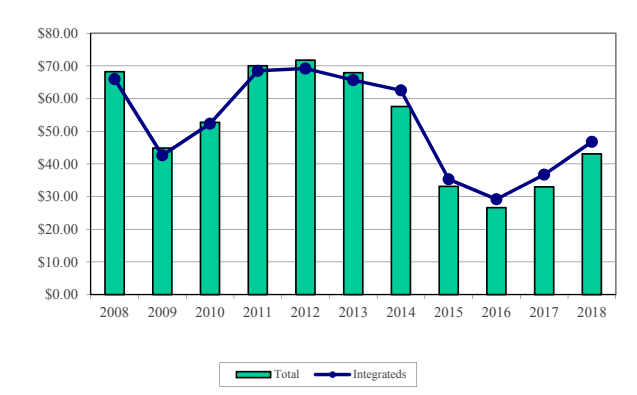
Source: BMO Capital Markets, Company Reports

Total S.A. (TOT - NYSE)

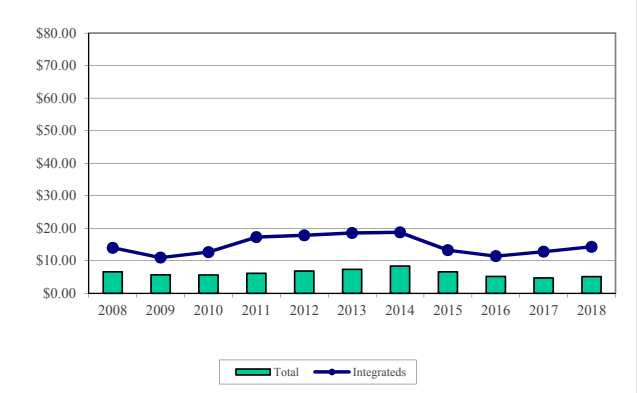
US$/boe, net

Worldwide

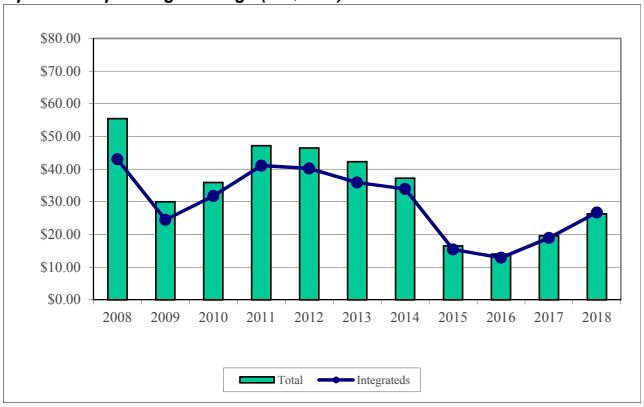
Upstream Net Revenue (US$/boe)



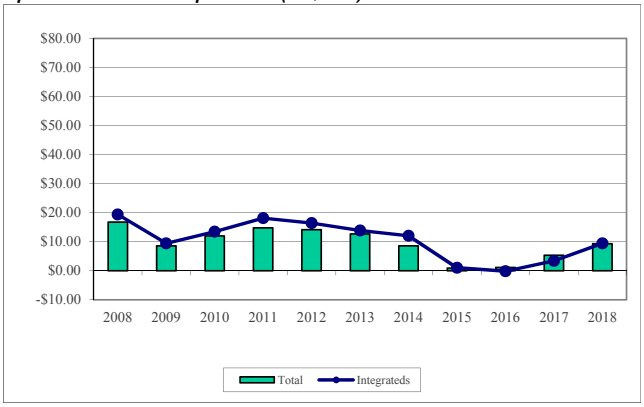
Production Costs (US$/boe)



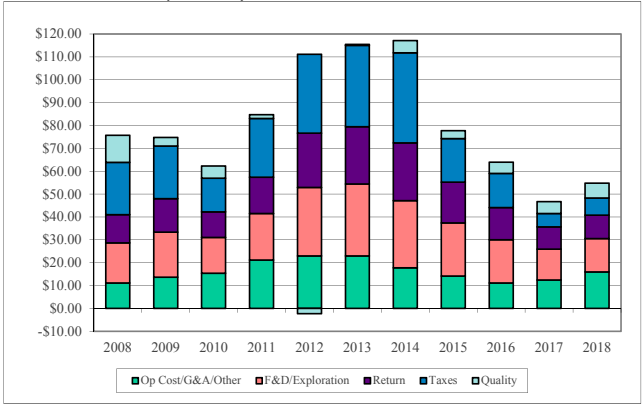
Upstream Operating Earnings (US$/boe)



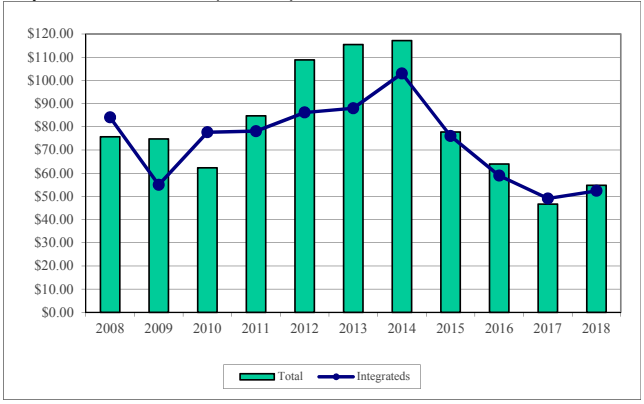
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



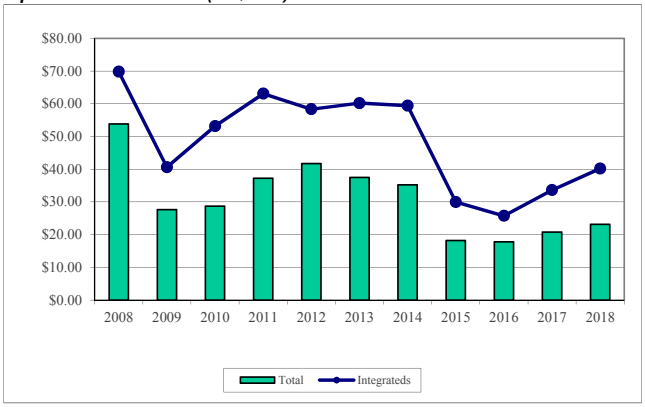
Source: BMO Capital Markets, Company Reports

Total S.A. (TOT - NYSE)

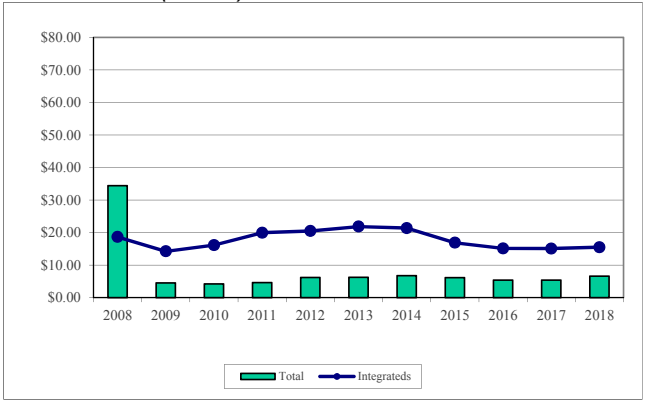
US$/boe, net

North America

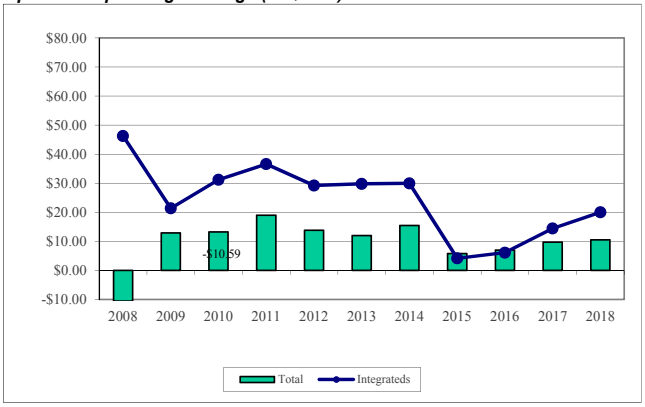
Upstream Net Revenue (US$/boe)



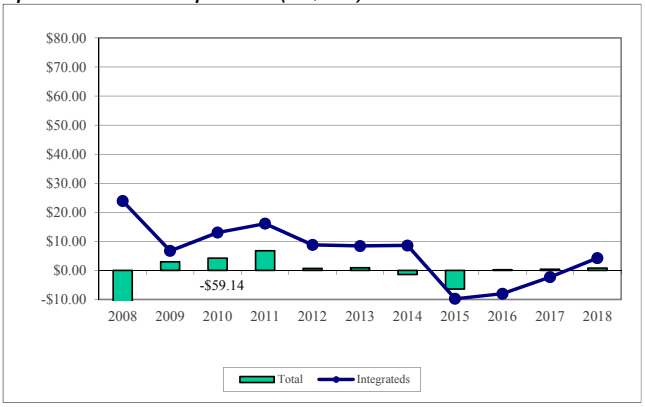
Production Costs (US$/boe)



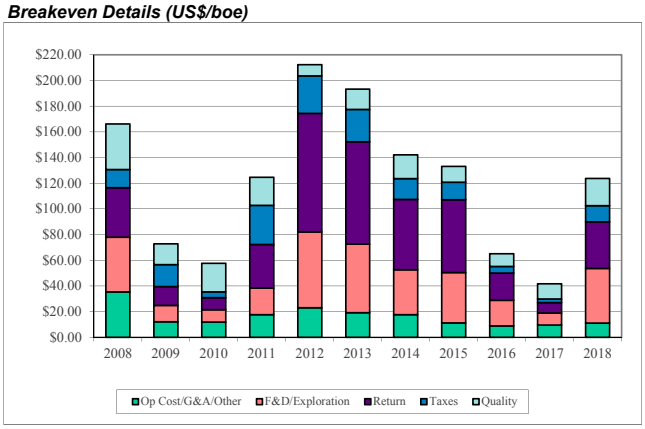
Upstream Operating Earnings (US$/boe)



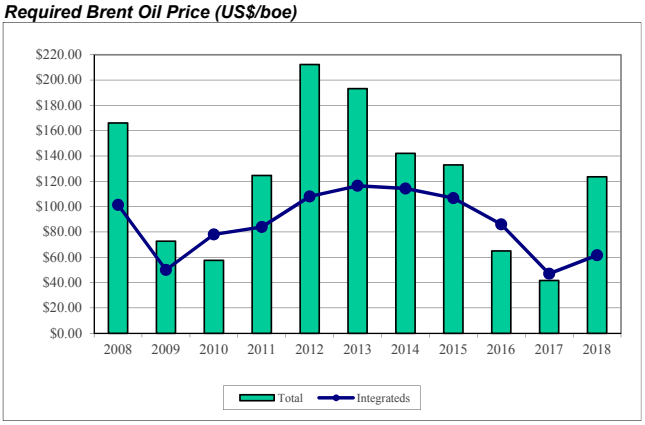
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



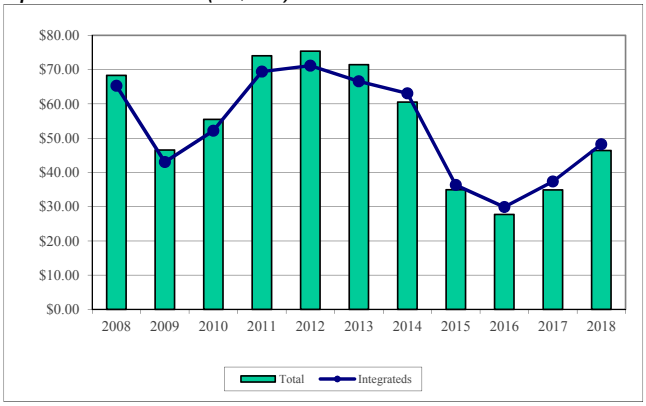
Source: BMO Capital Markets, Company Reports

Total S.A. (TOT - NYSE)

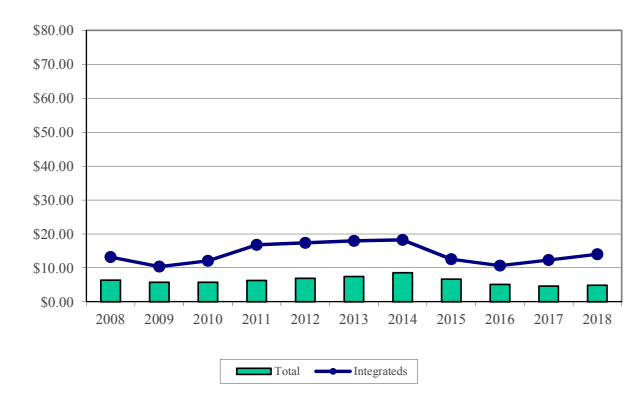
US$/boe, net

Total International

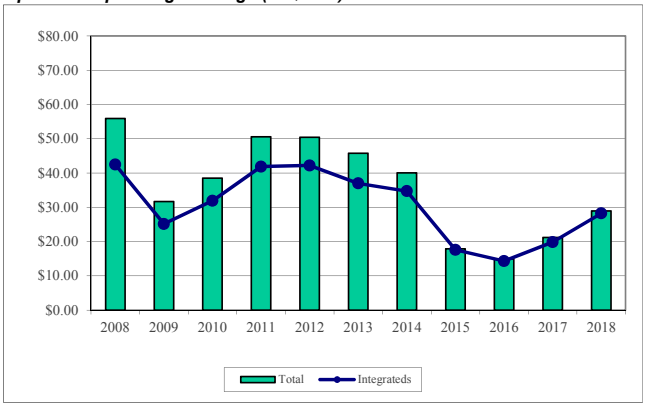
Upstream Net Revenue (US$/boe)



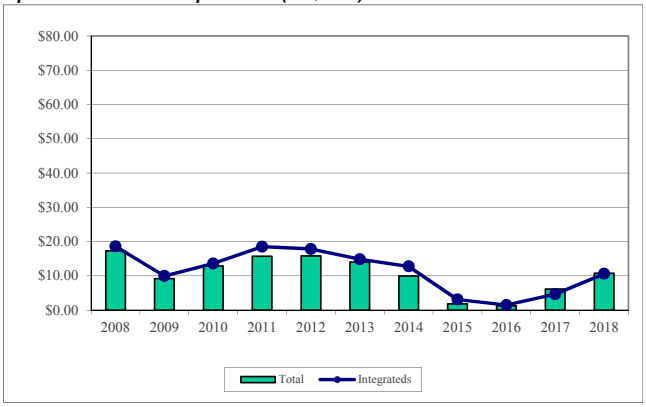
Production Costs (US$/boe)



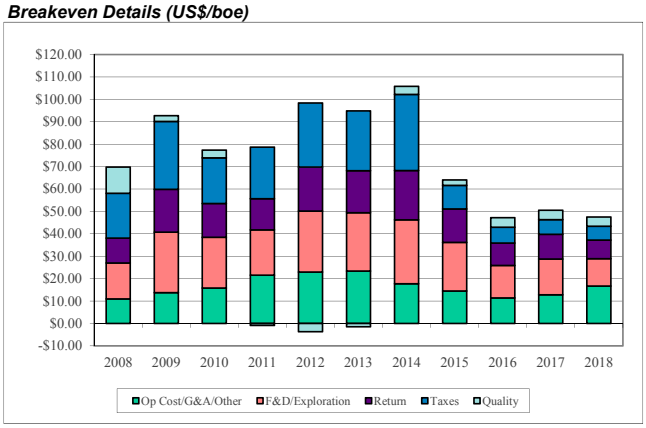
Upstream Operating Earnings (US$/boe)



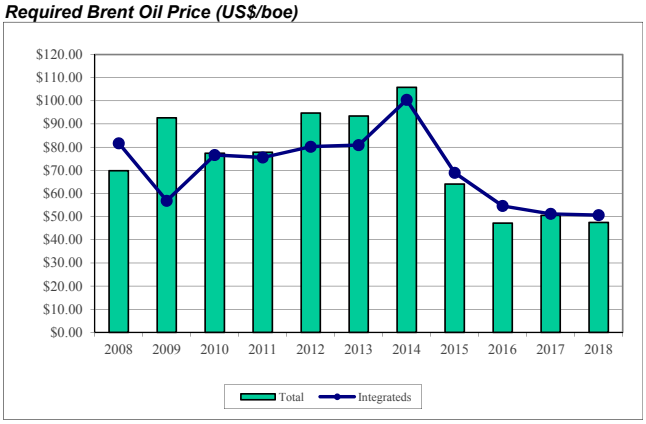
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



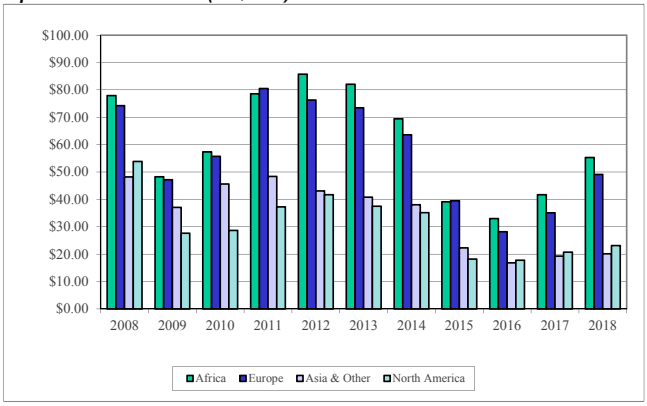
Source: BMO Capital Markets, Company Reports

Total S.A. (TOT - NYSE)

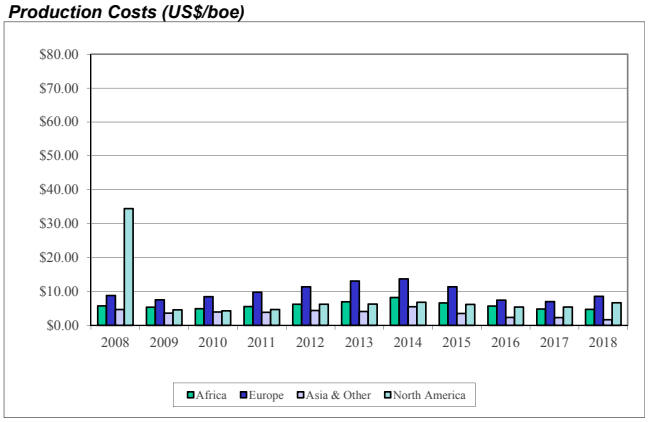
US$/boe, net

International Segments

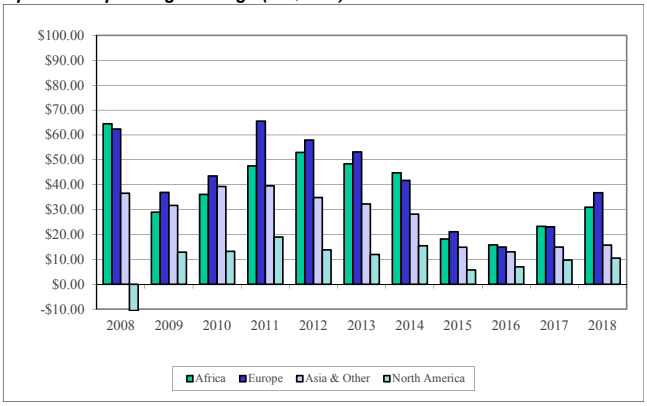
Upstream Net Revenue (US$/boe)



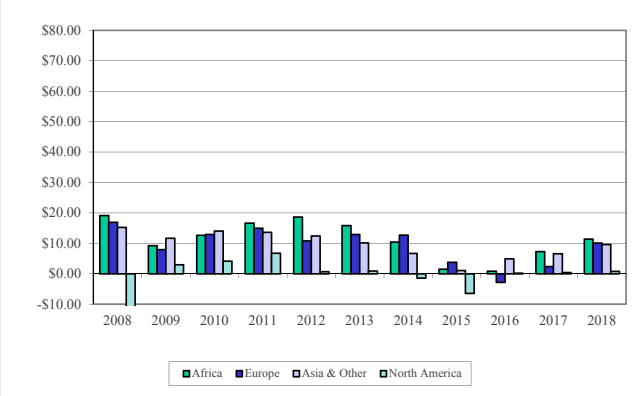
Production Costs (US$/boe)



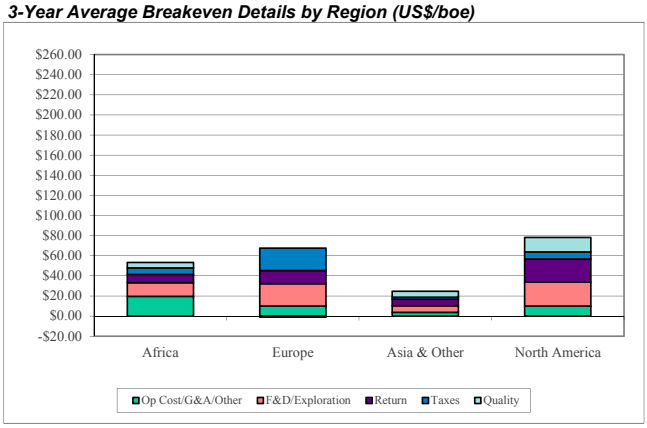
Upstream Operating Earnings (US$/boe)



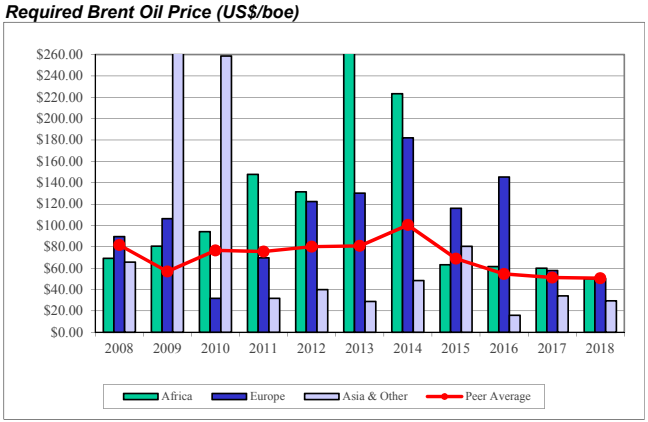
Upstream Results of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	72,659	44,677	54,481	70,400	69,012	64,111	52,636	35,286	31,984	31,314	42,162
Midstream / Downstream Revenue	163,217	111,759	131,880	161,533	165,424	163,924	159,382	108,135	95,941	117,785	141,944
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	235,876	156,436	186,361	231,934	234,436	228,035	212,018	143,421	127,925	149,099	184,106
Crude Oil and Product Purchases	163,336	99,115	123,604	158,603	163,062	160,893	152,975	96,671	83,377	99,411	125,816
Production and Transportation Expenses	28,101	25,932	25,385	27,633	29,151	28,810	28,349	24,345	24,302	24,966	27,484
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	1,124	974	1,146	1,419	1,860	2,169	1,964	1,991	1,264	864	797
General and Administrative	-	-	-	-	-	-	-	-	-	-	-
Depreciation, Depletion and Amortization	8,467	9,320	11,172	10,453	12,249	11,997	19,656	17,720	13,523	16,103	13,992
Interest, net	775	139	397	362	658	812	495	645	769	1,219	2,121
Other	(2,853)	(1,891)	(3,249)	(3,654)	(3,288)	(2,911)	(4,285)	(4,390)	(2,486)	(4,792)	(4,170)
Earnings Before Income Tax	36,925	22,848	27,906	37,118	30,744	26,265	12,864	6,439	7,176	11,328	18,066
Current Income Taxes	21,032	10,196	13,179	17,400	15,985	13,611	10,904	(1,246)	2,911	3,416	6,516
Future Income Taxes	(221)	615	390	2,197	818	1,148	(2,290)	2,899	(1,941)	(387)	-
Total Income Taxes	20,811	10,811	13,569	19,598	16,803	14,759	8,614	1,653	970	3,029	6,516
Minority Interest	(534)	(254)	(313)	(425)	(189)	(294)	(6)	301	(10)	332	(104)
Earnings From Continuing Operations	15,580	11,782	14,024	17,095	13,752	11,212	4,244	5,087	6,196	8,631	11,446
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	15,580	11,782	14,024	17,095	13,752	11,212	4,244	5,087	6,196	8,631	11,446
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	15,580	11,782	14,024	17,095	13,752	11,212	4,244	5,087	6,196	8,631	11,446

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	15,580	11,782	14,024	17,095	13,752	11,212	4,244	5,087	6,196	8,631	11,446
Charges and Credits Not Impacting Cash	8,896	10,528	12,485	14,334	15,260	14,917	23,149	16,435	16,364	16,998	14,584
Other	(1,579)	(806)	(1,469)	(2,363)	(1,893)	(865)	(6,214)	(2,735)	(4,396)	(3,181)	(2,982)
Cash Flow From Operations	22,897	21,504	25,040	29,066	27,119	25,264	21,179	18,787	18,164	22,448	23,048
Change in Working Capital / Other	4,034	(4,518)	(507)	(2,285)	1,578	2,968	4,429	1,159	(1,643)	(129)	1,655
Net Cash From Operating Activities	26,931	16,986	24,534	26,781	28,697	28,232	25,608	19,946	16,521	22,319	24,703
Total Capital Expenditures	(17,450)	(16,528)	(18,324)	(24,997)	(25,598)	(29,757)	(27,269)	(25,645)	(18,286)	(15,135)	(17,080)
Acquisitions, net	(502)	2,933	2,568	3,239	4,497	4,745	3,107	5,003	609	3,145	349
Other	1,687	(728)	(107)	(472)	(854)	(3,029)	(157)	193	24	358	1,785
Net Cash From Investing Activities	(16,264)	(14,322)	(15,863)	(22,230)	(21,955)	(28,041)	(24,319)	(20,449)	(17,653)	(11,632)	(14,946)
Net Change in Debt	6,541	3,345	4,057	277	3,247	2,066	13,412	9,185	5,027	(5,174)	(3,666)
Net Change in Common Stock	(1,370)	88	119	670	(46)	247	131	248	100	519	(3,830)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(7,275)	(7,094)	(6,763)	(7,158)	(6,667)	(7,130)	(7,308)	(2,845)	(2,661)	(2,643)	(4,913)
Other	937	(339)	(1,855)	210	(1,350)	3,296	(326)	(5,528)	1,066	1,758	(1,516)
Net Cash From Financing Activities	(1,167)	(4,000)	(4,442)	(6,001)	(4,816)	(1,521)	5,909	1,060	3,532	(5,540)	(13,925)
Effect of Exchange Rate on Cash	(718)	163	(479)	379	(258)	(56)	(2,217)	(2,469)	(1,072)	3,441	(1,110)
Net Increase/(Decrease) in Cash	8,783	(1,173)	3,750	(1,071)	1,668	(1,386)	4,981	(1,912)	1,328	8,588	(5,278)
Cash and Equivalents, Beginning of Year	7,439	16,222	15,049	18,800	17,729	19,397	18,011	22,992	21,080	22,408	30,996
Cash and Equivalents, End of Year	16,222	15,049	18,800	17,729	19,397	18,011	22,992	21,080	22,408	30,996	25,718

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	69,231	69,403	77,218	88,656	86,827	81,496	77,977	70,236	72,517	84,948	79,799
Net Property, Plant and Equipment	67,883	71,960	72,917	89,761	89,161	100,642	106,876	109,518	111,971	109,397	113,324
Other Assets	36,941	36,832	40,526	50,034	44,984	48,336	44,945	44,730	46,490	48,286	63,639
Total Assets	174,055	178,196	190,662	228,451	220,971	230,474	229,798	224,484	230,978	242,631	256,762
Total Current Liabilities	50,501	47,994	53,660	65,036	63,038	59,511	53,673	50,975	54,685	56,705	62,234
Long-term Debt	23,820	27,112	27,572	31,412	28,644	33,303	45,481	44,464	43,067	41,340	40,129
Deferred Income Taxes	11,730	12,481	13,196	17,073	16,441	17,194	14,810	12,360	11,060	10,828	11,490
Other Liabilities and Deferred Credits	14,519	15,931	14,950	18,300	17,436	20,952	22,303	21,276	20,592	19,721	24,795
Total Liabilities	100,570	103,517	109,377	131,821	125,559	130,960	136,267	129,075	129,404	128,594	138,648
Minority Interests	1,409	1,377	1,137	1,883	1,647	3,030	3,201	2,915	2,894	2,481	2,474
Common Shares	8,724	8,189	7,793	8,229	7,607	7,896	7,518	7,670	7,604	7,882	8,227
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	77,895	77,235	80,312	92,615	92,369	98,902	94,646	101,528	105,547	112,040	120,569
Other / Comprehensive Income (Loss)	(14,543)	(12,123)	(7,957)	(6,097)	(6,211)	(10,314)	(11,834)	(16,704)	(14,471)	(8,366)	(13,156)
Total Shareholders' Equity	72,076	73,302	80,148	94,747	93,765	96,484	90,330	92,494	98,680	111,556	115,640
Total Liabilities and Shareholders' Equity	174,055	178,196	190,662	228,451	220,971	230,474	229,798	224,484	230,978	242,631	256,762
Return on Capital Employed (ROCE)	**22.4%**	**15.2%**	**17.4%**	**18.5%**	**14.0%**	**11.2%**	**4.0%**	**4.9%**	**5.7%**	**7.7%**	**9.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations From Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	46,585	36,014	43,941	57,217	57,788	54,413	43,009	27,179	22,819	29,556	41,938	94,313	164,501
Production Costs	4,502	4,547	4,670	4,995	5,522	5,878	6,256	5,422	4,422	4,233	4,983	13,638	25,316
Exploration	1,124	996	1,186	1,425	1,863	2,172	1,966	1,992	1,268	869	812	2,949	6,907
DD&A	5,317	6,292	6,774	6,945	9,469	9,299	11,300	12,068	11,196	9,927	9,914	31,037	54,405
G&A/Other	3,113	6,384	8,154	12,283	12,972	12,509	6,991	6,187	5,110	6,876	10,529	22,515	35,693
Pre-tax Results Of Operations	32,529	17,794	23,158	31,570	27,961	24,555	16,496	1,510	823	7,651	15,700	24,174	42,180
Income Taxes	21,094	10,883	13,168	19,520	16,563	14,412	10,065	779	-141	2,846	6,622	9,327	20,171
Results Of Operations	11,435	6,911	9,990	12,050	11,399	10,144	6,431	731	964	4,805	9,078	14,847	22,009

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	269	1,982	2,458	3,323	3,654	3,139	3,051	1,631	1,756	2,526	3,185	7,467	12,149
Production Costs	172	326	365	415	543	523	589	551	530	656	913	2,099	3,239
Exploration	146	192	317	67	436	539	183	114	196	193	218	607	904
DD&A	352	467	606	551	1,133	907	1,504	1,233	697	1,113	1,424	3,234	5,971
G&A/Other	4	538	645	1,147	1,466	1,073	939	450	340	497	608	1,445	2,834
Pre-tax Results Of Operations	-405	458	525	1,142	76	96	-164	-717	-7	67	22	82	-799
Income Taxes	-109	247	168	540	18	23	-38	-139	-28	17	-85	-96	-273
Results Of Operations	-296	211	357	602	58	73	-126	-578	21	50	107	178	-526

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	46,316	34,031	41,483	53,894	54,134	51,274	39,958	25,548	21,063	27,030	38,753	86,846	152,352
Production Costs	4,330	4,221	4,305	4,580	4,979	5,355	5,667	4,871	3,892	3,577	4,070	11,539	22,077
Exploration	978	803	869	1,358	1,427	1,633	1,783	1,878	1,072	676	594	2,342	6,003
DD&A	4,965	5,825	6,168	6,393	8,336	8,392	9,796	10,835	10,499	8,814	8,490	27,803	48,434
G&A/Other	3,109	5,846	7,509	11,135	11,506	11,435	6,052	5,737	4,770	6,379	9,921	21,070	32,859
Pre-tax Results Of Operations	32,934	17,337	22,632	30,428	27,886	24,459	16,660	2,227	830	7,584	15,678	24,092	42,979
Income Taxes	21,203	10,636	13,000	18,979	16,544	14,388	10,103	919	-113	2,829	6,707	9,422	20,444
Results Of Operations	11,731	6,701	9,633	11,448	11,341	10,071	6,557	1,308	943	4,755	8,971	14,670	22,535

Notes: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$68.22	$44.84	$52.72	$70.05	$71.73	$67.92	$57.58	$33.10	$26.59	$32.98	$43.09	$34.57	$38.29
Production Costs	$6.59	$5.66	$5.60	$6.12	$6.85	$7.34	$8.37	$6.60	$5.15	$4.72	$5.12	$5.00	$5.89
Exploration	$1.65	$1.24	$1.42	$1.74	$2.31	$2.71	$2.63	$2.43	$1.48	$0.97	$0.83	$1.08	$1.61
DD&A	$7.79	$7.83	$8.13	$8.50	$11.75	$11.61	$15.13	$14.70	$13.04	$11.08	$10.19	$11.38	$12.66
G&A/Other	$4.56	$7.95	$9.78	$15.04	$16.10	$15.61	$9.36	$7.53	$5.95	$7.67	$10.82	$8.25	$8.31
Pre-tax Results Of Operations	$47.64	$22.15	$27.78	$38.65	$34.71	$30.65	$22.08	$1.84	$0.96	$8.54	$16.13	$8.86	$9.82
Income Taxes	$30.89	$13.55	$15.80	$23.90	$20.56	$17.99	$13.47	$0.95	-$0.16	$3.18	$6.80	$3.42	$4.70
Results Of Operations	$16.75	$8.61	$11.99	$14.75	$14.15	$12.66	$8.61	$0.89	$1.12	$5.36	$9.33	$5.44	$5.12

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$53.85	$27.66	$28.70	$37.26	$41.75	$37.52	$35.20	$18.22	$17.83	$20.76	$23.16	$20.88	$22.76
Production Costs	$34.43	$4.55	$4.26	$4.65	$6.20	$6.26	$6.80	$6.16	$5.38	$5.39	$6.64	$5.87	$6.07
Exploration	$29.13	$2.69	$3.70	$0.75	$4.98	$6.45	$2.11	$1.27	$1.99	$1.59	$1.59	$1.70	$1.69
DD&A	$70.32	$6.52	$7.08	$6.18	$12.95	$10.84	$17.35	$13.78	$7.08	$9.15	$10.36	$9.04	$11.19
G&A/Other	$0.88	$7.51	$7.53	$12.87	$16.75	$12.83	$10.83	$5.03	$3.45	$4.08	$4.42	$4.04	$5.31
Pre-tax Results Of Operations	-$80.91	$6.38	$6.13	$12.81	$0.87	$1.15	-$1.89	-$8.01	-$0.07	$0.55	$0.16	$0.23	-$1.50
Income Taxes	-$21.77	$3.44	$1.97	$6.06	$0.21	$0.28	-$0.43	-$1.56	-$0.28	$0.14	-$0.62	-$0.27	-$0.51
Results Of Operations	-$59.14	$2.94	$4.17	$6.75	$0.66	$0.87	-$1.46	-$6.45	$0.21	$0.41	$0.78	$0.50	-$0.99

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$68.33	$46.52	$55.47	$74.06	$75.38	$71.46	$60.51	$34.92	$27.72	$34.90	$46.36	$36.64	$40.50
Production Costs	$6.39	$5.77	$5.76	$6.29	$6.93	$7.46	$8.58	$6.66	$5.12	$4.62	$4.87	$4.87	$5.87
Exploration	$1.44	$1.10	$1.16	$1.87	$1.99	$2.28	$2.70	$2.57	$1.41	$0.87	$0.71	$0.99	$1.60
DD&A	$7.33	$7.96	$8.25	$8.79	$11.61	$11.70	$14.83	$14.81	$13.82	$11.38	$10.16	$11.73	$12.87
G&A/Other	$4.59	$7.99	$10.04	$15.30	$16.02	$15.94	$9.17	$7.84	$6.28	$8.24	$11.87	$8.89	$8.73
Pre-tax Results Of Operations	$48.59	$23.70	$30.26	$41.82	$38.83	$34.09	$25.23	$3.04	$1.09	$9.79	$18.76	$10.16	$11.42
Income Taxes	$31.28	$14.54	$17.38	$26.08	$23.04	$20.05	$15.30	$1.26	-$0.15	$3.65	$8.02	$3.98	$5.43
Results Of Operations	$17.31	$9.16	$12.88	$15.73	$15.79	$14.04	$9.93	$1.79	$1.24	$6.14	$10.73	$6.19	$5.99

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$77.93	$48.28	$57.38	$78.58	$85.75	$82.10	$69.45	$39.14	$33.00	$41.76	$55.33	$43.93	$47.48
Production Costs	$5.73	$5.37	$4.93	$5.56	$6.23	$6.94	$8.22	$6.60	$5.69	$4.81	$4.69	$5.04	$5.91
Exploration	$1.13	$1.14	$0.85	$1.08	$1.15	$1.76	$2.10	$2.03	$1.17	$0.40	$0.40	$0.64	$1.17
DD&A	$6.49	$6.84	$7.07	$7.60	$10.02	$10.86	$15.16	$16.29	$13.86	$12.40	$11.14	$12.40	$13.66
G&A/Other	$6.59	$12.77	$15.48	$24.38	$25.40	$25.00	$14.34	$12.35	$10.32	$13.28	$19.28	$14.53	$14.06
Pre-tax Results Of Operations	$57.99	$22.17	$29.06	$39.97	$42.95	$37.54	$29.64	$1.88	$1.97	$10.86	$19.81	$11.33	$12.68
Income Taxes	$38.87	$12.95	$16.42	$23.34	$24.29	$21.72	$19.19	$0.39	$1.11	$3.57	$8.41	$4.55	$6.31
Results Of Operations	$19.12	$9.22	$12.63	$16.63	$18.66	$15.82	$10.44	$1.49	$0.85	$7.30	$11.40	$6.77	$6.37

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia & Other													
Net Revenue	$48.20	$37.11	$45.65	$48.38	$43.12	$40.85	$38.07	$22.31	$16.85	$19.31	$20.16	$18.70	$22.86
Production Costs	$4.65	$3.57	$3.95	$3.85	$4.38	$4.07	$5.48	$3.50	$2.36	$2.29	$1.66	$2.12	$2.99
Exploration	$2.07	$1.03	$1.40	$3.46	$2.21	$2.57	$2.37	$2.49	$0.41	$0.43	$0.60	$0.48	$1.22
DD&A	$7.00	$9.02	$11.76	$10.44	$10.56	$12.43	$13.41	$12.50	$6.90	$5.26	$4.12	$5.49	$8.30
G&A/Other	$4.89	$0.82	$1.02	$1.52	$1.65	$1.93	$2.05	$1.45	$1.04	$1.65	$2.16	$1.59	$1.65
Pre-tax Results Of Operations	$29.58	$22.67	$27.52	$29.10	$24.32	$19.85	$14.74	$2.37	$6.14	$9.67	$11.62	$9.03	$8.70
Income Taxes	$14.36	$10.99	$13.46	$15.50	$11.92	$9.69	$8.08	$1.30	$1.22	$3.08	$2.01	$2.08	$2.99
Results Of Operations	$15.22	$11.68	$14.06	$13.60	$12.39	$10.16	$6.66	$1.07	$4.92	$6.59	$9.62	$6.95	$5.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$74.23	$47.22	$55.74	$80.49	$76.32	$73.49	$63.63	$39.52	$28.23	$35.09	$49.13	$38.29	$42.85
Production Costs	$8.77	$7.55	$8.46	$9.77	$11.38	$13.06	$13.69	$11.36	$7.42	$6.98	$8.55	$7.71	$9.38
Exploration	$1.27	$1.05	$1.76	$2.71	$4.17	$3.57	$4.88	$4.38	$3.51	$2.73	$1.64	$2.56	$3.28
DD&A	$8.68	$9.73	$9.27	$10.57	$17.14	$13.46	$15.74	$13.40	$23.43	$16.14	$13.63	$17.41	$16.41
G&A/Other	$1.78	$1.71	$1.98	$2.43	$2.81	$3.65	$3.32	$2.68	$2.32	$2.29	$2.18	$2.26	$2.52
Pre-tax Results Of Operations	$53.73	$27.19	$34.27	$55.01	$40.82	$39.75	$26.01	$7.70	-$8.45	$6.94	$23.13	$8.36	$11.27
Income Taxes	$36.84	$19.26	$21.38	$40.03	$30.02	$26.82	$13.32	$3.94	-$5.60	$4.60	$13.03	$4.67	$6.03
Results Of Operations	$16.89	$7.93	$12.89	$14.98	$10.81	$12.92	$12.69	$3.76	-$2.85	$2.34	$10.10	$3.69	$5.24

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	4,849.3	4,917.8	5,646.6	6,079.5	5,912.3	6,167.1	6,065.8	6,052.1	6,465.8	6,660.3	6,597.3	6,574.4	6,368.2
Liquids Production (b/d)	1,460,274	1,380,822	1,342,466	1,224,658	1,221,918	1,167,123	1,035,616	1,241,096	1,273,973	1,345,205	1,567,123	1,395,434	1,292,603
Total Production (boe/d)	2,268,493	2,200,457	2,283,562	2,237,900	2,207,306	2,194,977	2,046,575	2,249,772	2,351,598	2,455,251	2,666,667	2,491,172	2,353,973
% Gas Production	36%	37%	41%	45%	45%	47%	49%	45%	46%	45%	41%	44%	45%
% Oil Production	64%	63%	59%	55%	55%	53%	51%	55%	54%	55%	59%	56%	55%
Proven Reserves:													
Gas Reserves (bcf)	26,218.0	26,318.0	25,788.0	30,717.0	30,877.0	32,949.0	33,590.0	32,206.0	32,984.0	32,506.0	32,325.0	32,605.0	32,722.2
Oil Reserves (mmbbls)	5,695.0	5,689.0	5,987.0	5,784.0	5,685.0	5,426.0	5,303.0	5,605.0	5,414.0	5,450.0	6,049.0	5,637.7	5,564.2
Total Proven Reserves (mmboe)	10,064.7	10,075.3	10,285.0	10,903.5	10,831.2	10,917.5	10,901.3	10,972.7	10,911.3	10,867.7	11,436.5	11,071.8	11,017.9
% Gas Reserves	43%	44%	42%	47%	48%	50%	51%	49%	50%	50%	47%	49%	49%
% Oil Reserves	57%	56%	58%	53%	52%	50%	49%	51%	50%	50%	53%	51%	51%
Proven Reserve Life Index	12.2	12.5	12.3	13.3	13.4	13.6	14.6	13.4	12.7	12.1	11.7	12.2	12.9
Proven Reserve Additions:													
Gas Additions (bcf)	2,258.0	1,895.0	1,531.0	7,148.0	2,318.0	4,323.0	2,778.0	825.0	3,138.0	1,953.0	2,227.0	7,318.0	10,921.0
Oil Additions (mmbbls)	450.0	498.0	788.0	244.0	347.0	167.0	268.0	755.0	274.0	527.0	1,171.0	1,972.0	2,995.0
Total Additions (mmboe)	826.3	813.8	1,043.2	1,435.3	733.3	887.5	731.0	892.5	797.0	852.5	1,542.2	3,191.7	4,815.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	218.3	546.5	315.5	586.8	549.7	948.3	783.0	895.2	406.3	350.5	590.2	1,347.0	3,025.2
Acquisitions	20.7	136.0	454.0	1,050.3	135.7	223.7	96.8	50.5	334.7	42.0	565.5	942.2	1,089.5
Dispositions	(119.5)	(57.8)	(82.8)	(104.3)	(118.7)	(184.5)	(242.7)	(269.7)	(110.7)	(95.8)	(228.0)	(434.5)	(946.8)
Revisions of Estimates	706.8	189.2	356.5	-97.5	166.7	-100.0	93.8	216.5	166.7	555.8	614.5	1,337.0	1,647.3
Components as % of Total Additions:													
Extensions, Discoveries and Additions	26.4%	67.2%	30.2%	40.9%	75.0%	106.9%	107.1%	100.3%	51.0%	41.1%	38.3%	42.2%	62.8%
Acquisitions	2.5%	16.7%	43.5%	73.2%	18.5%	25.2%	13.2%	5.7%	42.0%	4.9%	36.7%	29.5%	22.6%
Dispositions	-14.5%	-7.1%	-7.9%	-7.3%	-16.2%	-20.8%	-33.2%	-30.2%	-13.9%	-11.2%	-14.8%	-13.6%	-19.7%
Revisions of Estimates	85.5%	23.2%	34.2%	-6.8%	22.7%	-11.3%	12.8%	24.3%	20.9%	65.2%	39.8%	41.9%	34.2%
Additions as % of Production:													
Gas	127.6%	105.6%	74.3%	322.1%	107.4%	192.0%	125.5%	37.3%	133.0%	80.3%	92.5%	101.7%	94.0%
Oil	84.4%	98.8%	160.8%	54.6%	77.8%	39.2%	70.9%	166.7%	58.9%	107.3%	204.7%	129.1%	127.0%
Total	99.8%	101.3%	125.2%	175.7%	91.0%	110.8%	97.9%	108.7%	92.9%	95.1%	158.4%	117.0%	112.1%
Additions as % of Reserves:													
Gas	8.6%	7.2%	5.9%	23.3%	7.5%	13.1%	8.3%	2.6%	9.5%	6.0%	6.9%	22.4%	33.4%
Oil	7.9%	8.8%	13.2%	4.2%	6.1%	3.1%	5.1%	13.5%	5.1%	9.7%	19.4%	35.0%	53.8%
Total	8.2%	8.1%	10.1%	13.2%	6.8%	8.1%	6.7%	8.1%	7.3%	7.8%	13.5%	28.8%	43.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,763.9	$1,696.1	$1,789.6	$2,178.0	$2,691.6	$2,926.6	$2,620.0	$1,955.0	$1,395.0	$1,181.0	$1,175.0	$3,751.0	$8,326.0
Development	$12,377.0	$11,302.4	$11,024.4	$16,834.9	$17,694.0	$23,987.8	$22,378.0	$19,424.0	$13,513.0	$9,919.0	$10,151.0	$33,583.0	$75,385.0
Acquisitions	$838.6	$3,110.5	$3,219.8	$9,592.1	$3,144.3	$3,883.1	$1,086.0	$2,835.0	$923.0	$797.0	$13,054.0	$14,774.0	$18,695.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$14,979.6	$16,109.1	$16,033.8	$28,604.9	$23,529.9	$30,797.5	$26,084.0	$24,214.0	$15,831.0	$11,897.0	$24,380.0	$52,108.0	$102,406.0
Expenditures as % of Total:													
Exploration	11.8%	10.5%	11.2%	7.6%	11.4%	9.5%	10.0%	8.1%	8.8%	9.9%	4.8%	7.2%	8.1%
Development	82.6%	70.2%	68.8%	58.9%	75.2%	77.9%	85.8%	80.2%	85.4%	83.4%	41.6%	64.4%	73.6%
Acquisitions	5.6%	19.3%	20.1%	33.5%	13.4%	12.6%	4.2%	11.7%	5.8%	6.7%	53.5%	28.4%	18.3%
Cashflow (US$million)	$16,752.3	$13,203.6	$16,763.4	$18,994.8	$20,867.6	$19,442.7	$17,730.7	$12,798.7	$12,160.0	$14,732.0	$18,992.4	$45,884.4	$76,413.8
Cashflow (US$/boe)	$20.23	$16.44	$20.11	$23.25	$25.90	$24.27	$23.74	$15.59	$14.17	$16.44	$19.51	$16.82	$17.79
Recycle Ratio	1.3x	0.9x	1.4x	1.3x	0.9x	0.8x	0.9x	0.7x	0.8x	1.3x	1.4x	1.2x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$15.28	$17.67	$19.07	$38.85	$28.46	$31.73	$28.51	$19.23	$26.02	$12.25	$9.40	$13.91	$17.92
Net Acquisition Costs	$40.58	$22.87	$7.09	$9.13	$23.18	$17.36	$11.22	$56.14	$2.76	$18.98	$23.08	$15.68	$17.16
All Sources (incl. revisions)	$15.84	$18.48	$14.24	$18.58	$27.62	$28.73	$26.79	$20.84	$17.44	$12.55	$13.77	$14.37	$17.77
Exploration & Development (excl. revisions)	$64.77	$23.79	$40.61	$32.40	$37.09	$28.38	$31.93	$23.88	$36.69	$31.67	$19.19	$27.72	$27.67
Net Acquisition Costs	$40.58	$22.87	$7.09	$9.13	$23.18	$17.36	$11.22	$56.14	$2.76	$18.98	$23.08	$15.68	$17.16
All Sources (excl. revisions)	$62.68	$23.60	$20.84	$17.47	$34.33	$26.28	$29.65	$25.61	$21.36	$30.31	$21.10	$22.76	$24.89
Geographically Segmented Costs													
North America	-$18.92	$9.99	$5.91	$20.05	$54.10	$200.63	$32.81	$37.95	-$54.27	$7.85	$40.93	$27.87	$30.52
Europe	$29.23	$38.43	$9.58	$21.47	$32.81	$207.10	$100.70	nm	$42.20	$15.61	$16.70	$19.76	$31.32
Africa	$12.00	$17.36	$22.73	-$57.42	$36.99	-$231.91	$65.23	$13.65	$14.97	$18.92	$9.84	$12.93	$16.30
Asia and Other	$12.89	$119.84	$103.69	$9.56	$14.19	$7.01	$9.60	$19.37	$3.63	$9.43	$7.26	$6.19	$9.16

Notes: Reserve estimates reported after royalties; Dollar amounts have been converted from Euros to U.S. Dollars at average annual exchange rates
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	6.59	5.66	5.60	6.12	6.85	7.34	8.37	6.60	5.15	4.72	4.72	5.00	5.89
Exploration Expense	1.65	1.24	1.42	1.74	2.31	2.71	2.63	2.43	1.48	0.97	0.97	1.08	1.61
G&A/Other	4.56	7.95	9.78	15.04	16.10	15.61	9.36	7.53	5.95	7.67	7.67	8.25	8.31
F&D Costs	15.84	18.48	14.24	18.58	27.62	28.73	26.79	20.84	17.44	12.55	12.55	14.37	17.77
Return on Capital	12.39	14.64	11.16	15.88	23.75	25.06	25.20	17.83	14.05	9.77	9.77	11.12	14.52
Income Taxes	22.85	23.06	14.71	25.73	34.51	35.61	39.44	19.01	14.99	5.79	5.79	8.62	13.80
Breakeven Oil Price	63.87	71.03	56.92	83.09	111.14	115.06	111.80	74.24	59.07	41.47	41.47	48.44	61.90
Quality Differential	11.85	3.77	5.37	1.61	(2.32)	0.38	5.35	3.52	4.88	5.23	5.23	5.55	5.10
Required WTI Price	75.72	74.80	62.30	84.70	108.83	115.45	117.15	77.75	63.95	46.71	46.71	53.99	67.01

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	34.43	4.55	4.26	4.65	6.20	6.26	6.80	6.16	5.38	5.39	5.39	5.87	6.07
Exploration Expense	29.13	2.69	3.70	0.75	4.98	6.45	2.11	1.27	1.99	1.59	1.59	1.70	1.69
G&A/Other	0.88	7.51	7.53	12.87	16.75	12.83	10.83	5.03	3.45	4.08	4.08	4.04	5.31
F&D Costs	13.42	9.99	5.91	20.05	54.10	46.92	32.81	37.95	17.92	7.85	7.85	22.23	27.49
Return on Capital	38.56	14.65	9.47	33.90	92.31	79.75	54.73	56.65	21.23	8.08	8.08	22.91	34.19
Income Taxes	14.20	17.17	4.47	30.45	29.22	25.24	16.33	13.66	5.12	2.82	2.82	7.12	10.05
Breakeven Oil Price	130.62	56.56	35.33	102.67	203.56	177.45	123.61	120.72	55.10	29.82	29.82	63.88	84.79
Quality Differential	35.45	16.24	22.24	21.93	8.78	15.83	18.48	12.32	9.90	11.83	11.83	14.29	14.73
Required WTI Price	166.07	72.80	57.57	124.60	212.34	193.28	142.09	133.04	65.00	41.64	41.64	78.16	99.53

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	6.39	5.77	5.76	6.29	6.93	7.46	8.58	6.66	5.12	4.62	4.62	4.87	5.87
Exploration Expense	1.44	1.10	1.16	1.87	1.99	2.28	2.70	2.57	1.41	0.87	0.87	0.99	1.60
G&A/Other	4.59	7.99	10.04	15.30	16.02	15.94	9.17	7.84	6.28	8.24	8.24	8.89	8.73
F&D Costs	14.60	25.88	21.51	18.28	25.24	23.75	25.78	19.16	13.09	15.06	15.06	12.64	16.14
Return on Capital	11.08	19.09	15.08	13.89	19.61	18.71	22.02	14.90	10.03	11.01	11.01	9.34	12.58
Income Taxes	20.02	30.30	20.35	23.03	28.61	26.73	33.92	10.46	7.04	6.55	6.55	6.34	10.15
Breakeven Oil Price	58.12	90.13	73.89	78.66	98.40	94.87	102.17	61.58	42.96	46.34	46.34	43.07	55.07
Quality Differential	11.68	2.55	3.44	(0.89)	(3.67)	(1.42)	3.63	2.44	4.23	4.20	4.20	4.19	3.73
Required WTI Price	69.80	92.68	77.33	77.78	94.73	93.45	105.80	64.02	47.19	50.54	50.54	47.26	58.80

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	5.73	5.37	4.93	5.56	6.23	6.94	8.22	6.60	5.69	4.81	4.69	5.04	5.91
Exploration Expense	1.13	1.14	0.85	1.08	1.15	1.76	2.10	2.03	1.17	0.40	0.40	0.64	1.17
G&A/Other	6.59	12.77	15.48	24.38	25.40	25.00	14.34	12.35	10.32	13.28	19.28	14.53	14.06
F&D Costs	12.00	17.36	22.73	39.19	36.99	114.03	65.23	13.65	14.97	18.92	9.84	12.93	16.30
Return on Capital	9.93	15.27	17.83	29.46	25.48	81.19	44.14	8.96	10.20	11.71	6.05	8.26	10.59
Income Taxes	20.19	21.47	23.18	41.34	33.18	111.50	81.12	13.29	13.33	5.73	4.47	6.49	11.15
Breakeven Oil Price	55.57	73.38	84.99	141.01	128.43	340.41	215.14	56.87	55.68	54.85	44.73	47.89	59.18
Quality Differential	13.72	7.22	9.23	6.90	3.04	3.78	8.29	6.36	5.81	5.10	5.33	5.42	6.18
Required WTI Price	69.29	80.59	94.21	147.90	131.46	344.19	223.43	63.23	61.49	59.95	50.06	53.31	65.35

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	8.77	7.55	8.46	9.77	11.38	13.06	13.69	11.36	7.42	6.98	8.55	7.71	9.38
Exploration Expense	1.27	1.05	1.76	2.71	4.17	3.57	4.88	4.38	3.51	2.73	1.64	2.56	3.28
G&A/Other	1.78	1.71	1.98	2.43	2.81	3.65	3.32	2.68	2.32	2.29	2.18	2.26	2.52
F&D Costs	29.23	38.43	9.58	21.47	32.81	39.66	68.32	46.93	42.20	15.61	16.70	19.76	37.95
Return on Capital	14.50	17.76	4.89	12.59	22.45	26.99	46.24	27.88	30.34	10.17	10.41	13.05	25.57
Income Taxes	31.64	43.13	8.12	33.64	62.37	56.04	48.54	29.27	59.67	20.00	13.43	22.19	35.70
Breakeven Oil Price	87.19	109.61	34.79	82.62	136.00	142.97	184.99	122.49	145.46	57.79	52.92	67.52	114.40
Quality Differential	2.36	(3.18)	(3.04)	(12.94)	(13.58)	(12.72)	(3.00)	(6.40)	(0.05)	(0.00)	(2.82)	(0.96)	(2.45)
Required WTI Price	89.56	106.43	31.74	69.68	122.42	130.25	181.99	116.09	145.42	57.79	50.10	66.56	111.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Asia and Other													
Operating Costs	4.65	3.57	3.95	3.85	4.38	4.07	5.48	3.50	2.36	2.29	1.66	2.12	2.99
Exploration Expense	2.07	1.03	1.40	3.46	2.21	2.57	2.37	2.49	0.41	0.43	0.60	0.48	1.22
G&A/Other	4.89	0.82	1.02	1.52	1.65	1.93	2.05	1.45	1.04	1.65	2.16	1.59	1.65
F&D Costs	12.89	119.84	103.69	9.56	14.19	7.01	9.60	19.37	3.63	9.43	7.26	6.19	9.16
Return on Capital	11.33	103.53	81.36	11.47	15.80	9.75	13.84	24.26	3.52	10.05	8.16	6.50	10.70
Income Taxes	10.69	97.40	77.84	13.07	15.20	9.31	16.79	29.43	0.87	4.69	1.70	1.94	5.94
Breakeven Oil Price	46.52	326.19	269.27	42.93	53.44	34.64	50.14	80.51	11.83	28.55	21.54	18.82	31.66
Quality Differential	19.19	(5.37)	(10.65)	(11.21)	(13.46)	(5.80)	(1.73)	(0.06)	4.13	5.54	7.94	5.87	3.16
Required WTI Price	65.72	320.83	258.61	31.72	39.98	28.84	48.41	80.44	15.96	34.09	29.48	24.69	34.82

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Total S.A. (TOT - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.85	7.42	8.54	9.50	10.12	11.57	8.04	6.57	6.57	6.15	6.63	6.45	7.61
Exploration Expense	1.50	1.89	2.44	3.21	3.74	3.64	2.95	1.88	1.88	1.26	1.08	1.40	2.08
G&A/Other	9.62	12.96	21.00	22.32	21.52	12.93	9.17	7.59	7.59	9.99	14.01	10.65	10.72
F&D Costs (1-Year)	22.42	16.60	36.35	40.16	53.37	42.42	22.24	25.41	25.41	15.32	16.37	18.04	22.30
Return on Capital	17.38	12.93	30.95	33.94	46.05	40.29	18.75	19.98	19.98	11.39	11.63	13.44	17.85
Income Taxes	27.37	17.05	50.13	49.31	65.42	63.05	20.00	21.30	21.30	6.75	8.48	10.42	16.96
Breakeven Oil Price	**85.15**	**68.85**	**149.39**	**158.44**	**200.21**	**173.89**	**81.16**	**82.73**	**82.73**	**50.86**	**58.21**	**60.40**	**77.52**
Quality Differential	4.56	7.12	2.24	(3.21)	0.53	7.40	4.28	6.22	6.22	6.81	8.47	7.17	6.64
Required WTI Price	**89.71**	**75.97**	**151.63**	**155.23**	**200.74**	**181.29**	**85.44**	**88.95**	**88.95**	**57.67**	**66.68**	**67.57**	**84.15**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.85	7.42	8.54	9.50	10.12	11.57	8.04	6.57	6.57	6.15	6.63	6.45	7.61
Exploration Expense	1.50	1.89	2.44	3.21	3.74	3.64	2.95	1.88	1.88	1.26	1.08	1.40	2.08
G&A/Other	9.62	12.96	21.00	22.32	21.52	12.93	9.17	7.59	7.59	9.99	14.01	10.65	10.72
F&D Costs (1-Year)	16.64	18.12	26.94	50.73	57.42	36.46	19.38	14.67	14.67	12.57	10.56	12.02	18.73
Return on Capital	12.75	14.07	22.62	42.45	48.57	33.81	16.22	11.53	11.53	8.96	7.44	8.98	14.85
Income Taxes	20.08	18.54	36.64	61.69	69.00	52.92	17.30	12.29	12.29	5.31	5.43	6.96	14.11
Breakeven Oil Price	**67.43**	**73.00**	**118.17**	**189.91**	**210.37**	**151.32**	**73.08**	**54.53**	**54.53**	**44.23**	**45.15**	**46.47**	**68.10**
Quality Differential	4.56	7.12	2.24	(3.21)	0.53	7.40	4.28	6.22	6.22	6.81	8.47	7.17	6.64
Required WTI Price	**71.99**	**80.12**	**120.41**	**186.70**	**210.90**	**158.71**	**77.36**	**60.75**	**60.75**	**51.04**	**53.62**	**53.63**	**74.74**

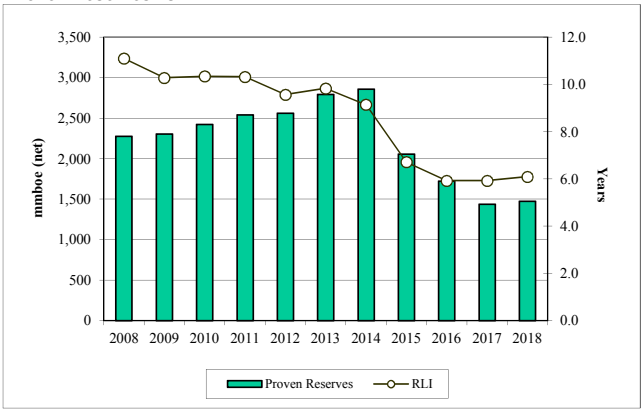
Source: BMO Capital Markets, Company Reports

Anadarko Petroleum Corp. (APC - NYSE) US$, net

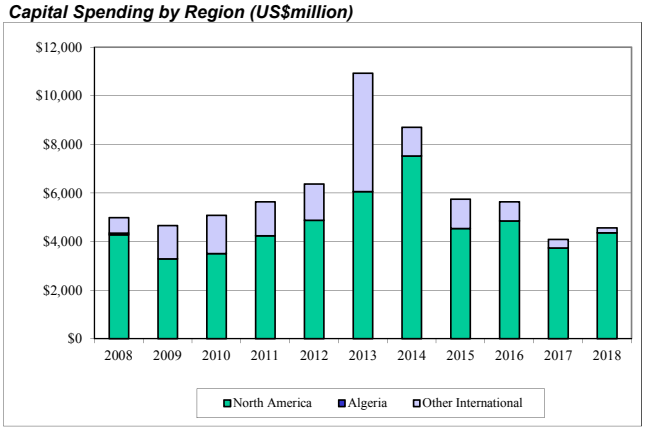
- Anadarko reported results from operations of $9.92/boe in 2018 versus a loss of $0.46/boe in 2017.
- The company's one-year F&D costs increased to $14.62/boe in 2018 versus $12.07/boe in 2017. On a realized price ratio basis, F&D costs were up to $17.56/boe from $16.25/boe last year while costs for PD reserves rose to $17.76/boe from $15.12/boe one year ago.
- Anadarko's 2018 results imply a Brent breakeven oil price of $58.41/boe on a realized ratio basis on total proved reserves, while its PD cost assessment implies a breakeven of $58.71/boe.
- Anadarko reported ROCE of 5.7% in 2018 versus a normalized loss of 3.0% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

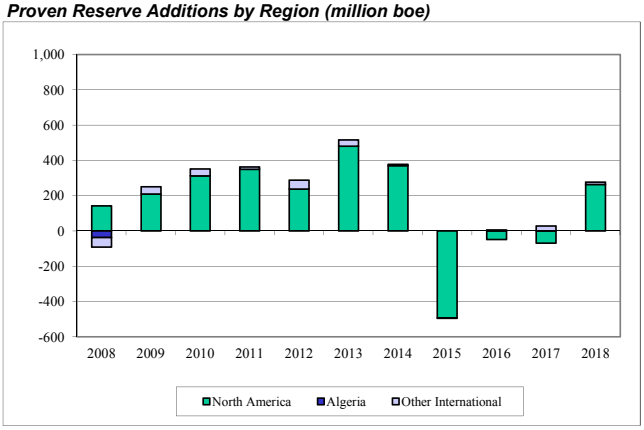
Proven Reserves vs RLI



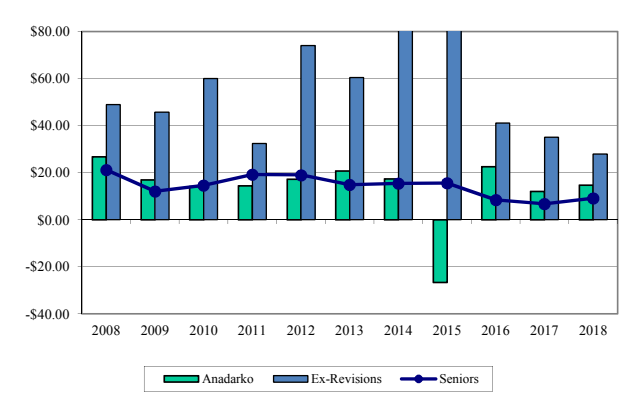
Capital Spending by Region (US$million)



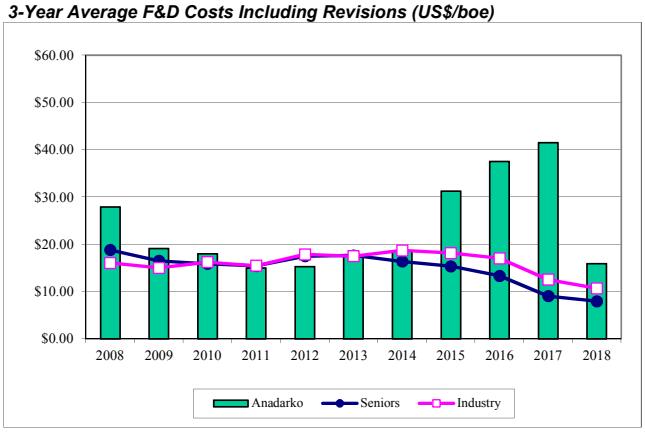
Proven Reserve Additions by Region (million boe)



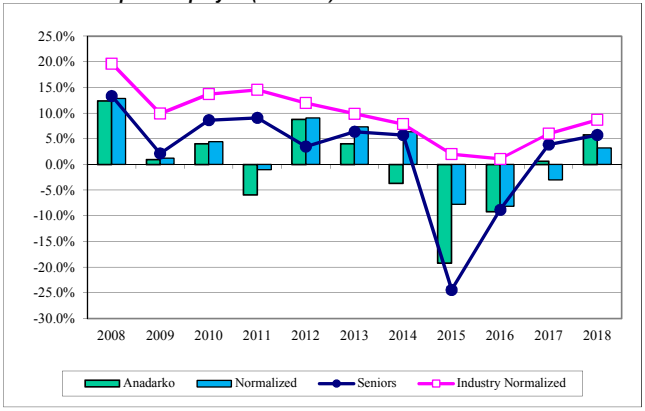
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

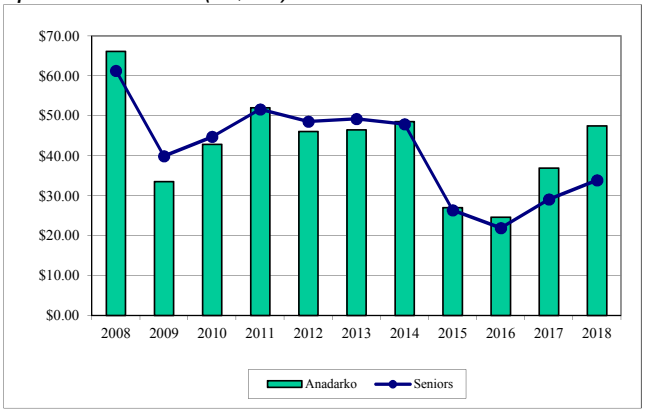
See pages F1 to F4 for analyst coverage.

Anadarko Petroleum Corp. (APC - NYSE)

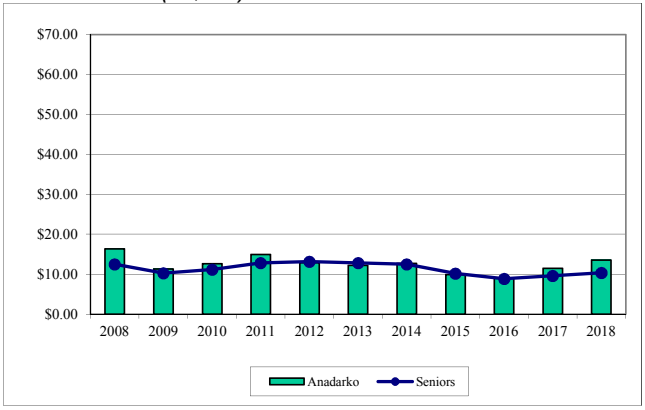
US$/boe, net

Worldwide

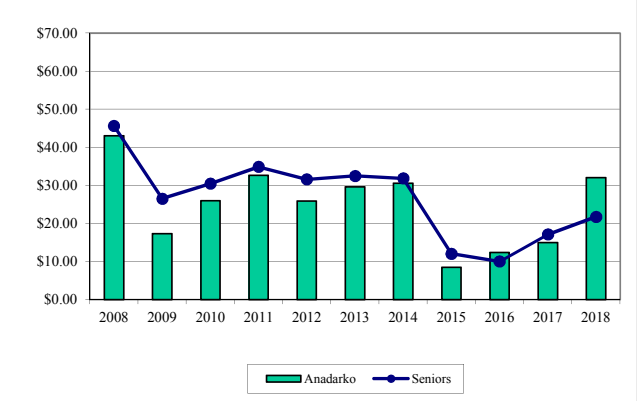
Upstream Net Revenue (US$/boe)



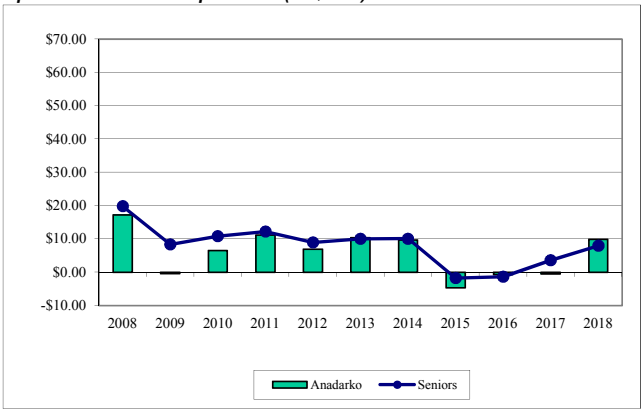
Production Costs (US$/boe)



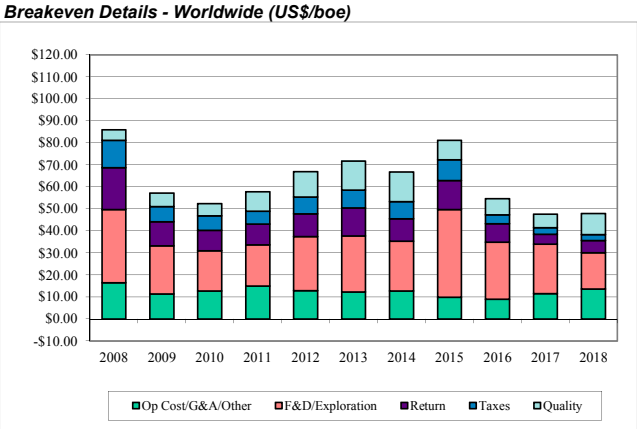
Upstream Operating Earnings (US$/boe)



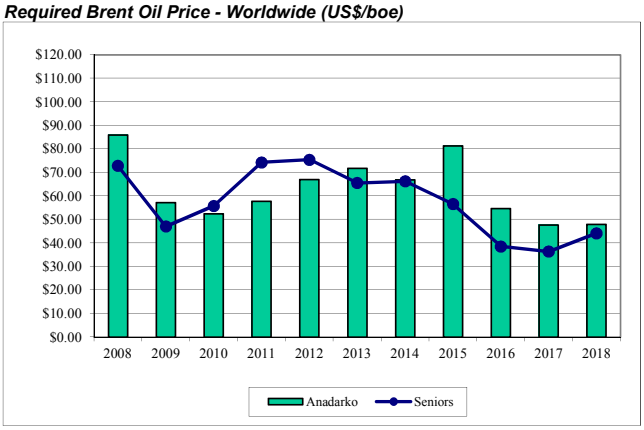
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

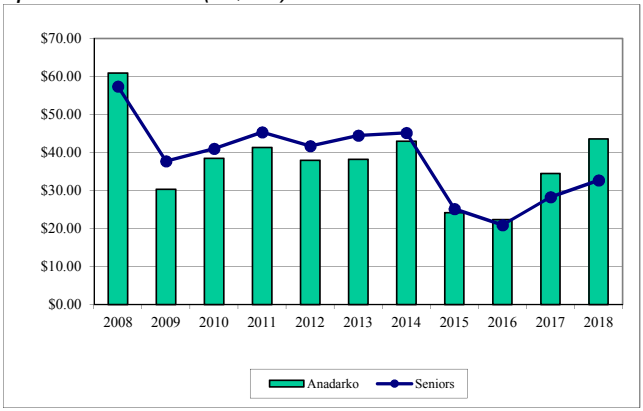
See pages F1 to F4 for analyst coverage.

Anadarko Petroleum Corp. (APC - NYSE)

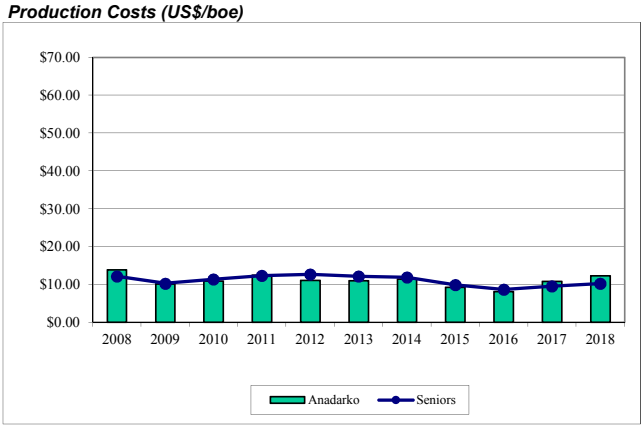
US$/boe, net

North America

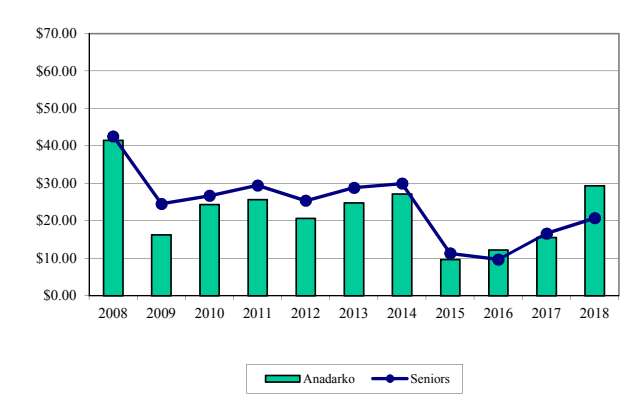
Upstream Net Revenue (US$/boe)



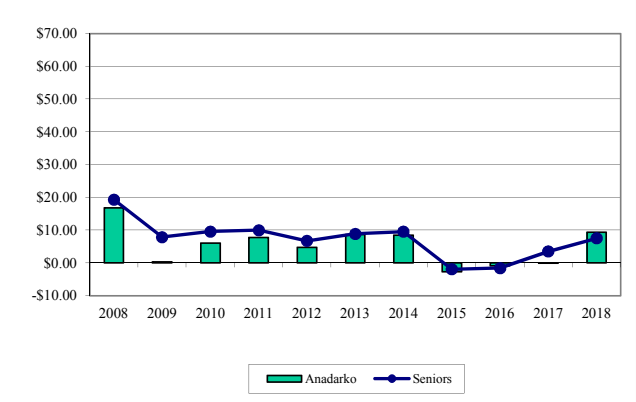
Production Costs (US$/boe)



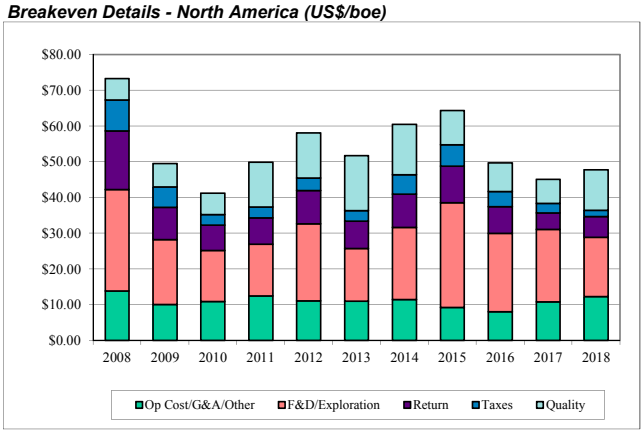
Upstream Operating Earnings (US$/boe)



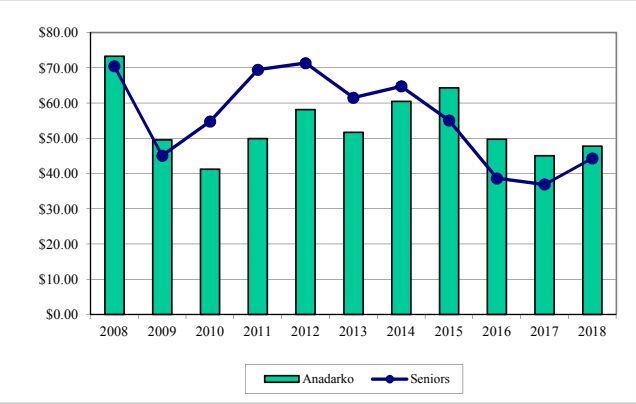
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



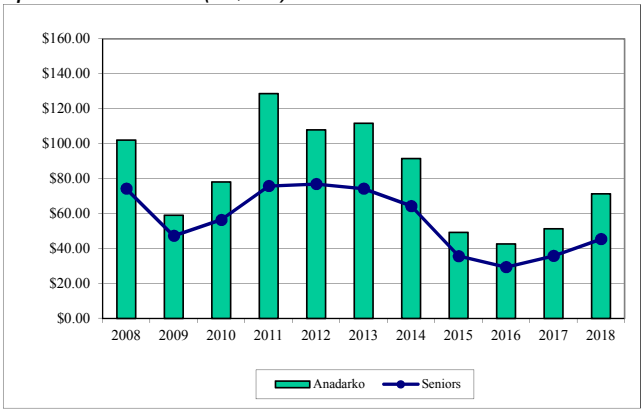
Source: BMO Capital Markets, Company Reports

Anadarko Petroleum Corp. (APC - NYSE)

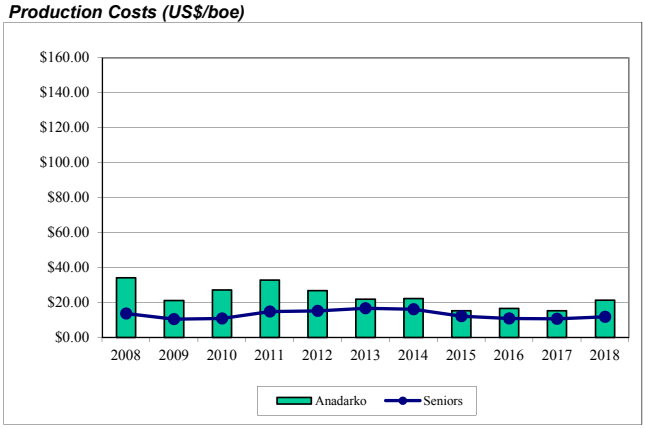
US$/boe, net

Total International

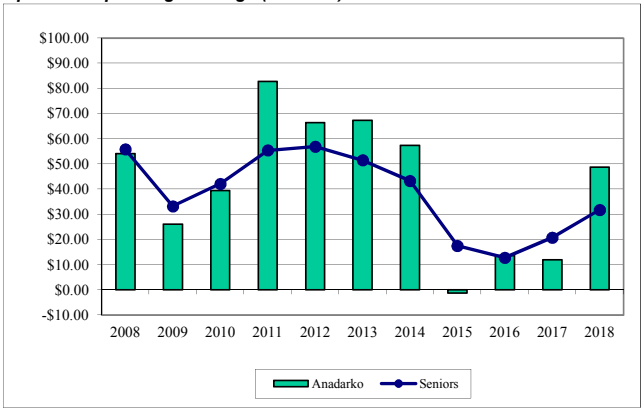
Upstream Net Revenue (US$/boe)



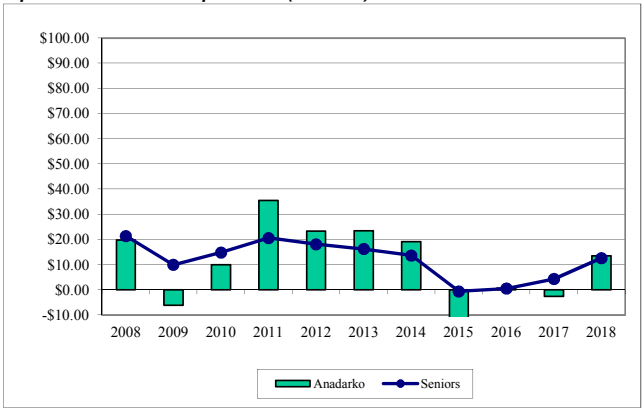
Production Costs (US$/boe)



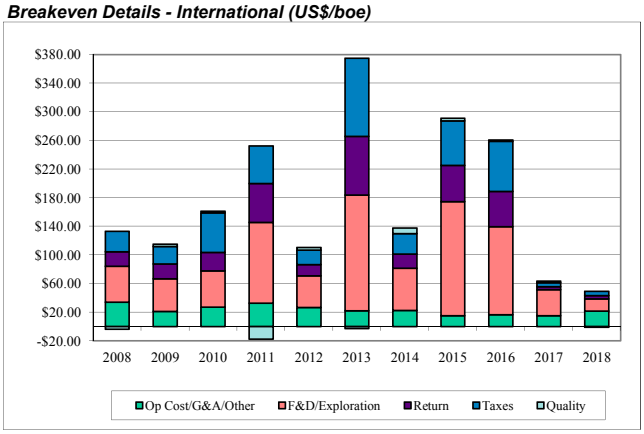
Upstream Operating Earnings (US$/boe)



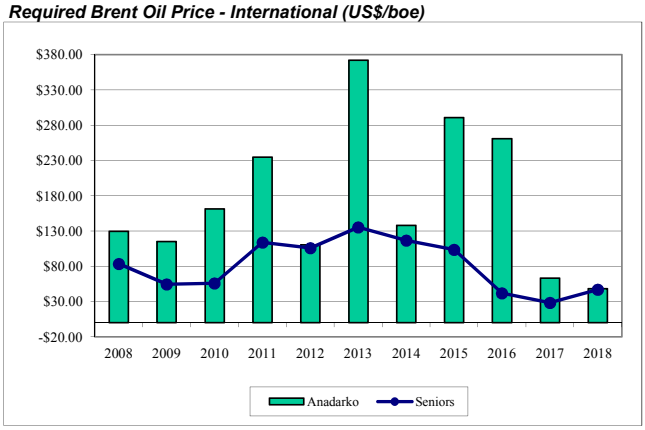
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

Anadarko Petroleum Corp. (APC - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	13,558	7,482	10,009	12,834	12,396	13,828	15,169	8,260	7,153	8,969	11,482
Midstream / Downstream Revenue	1,082	728	833	1,048	911	1,039	1,206	1,226	1,294	2,000	1,588
Other	1,083	790	142	85	104	(286)	2,095	(788)	(578)	939	312
Total Revenue and Other Income	15,723	9,000	10,984	13,967	13,411	14,581	18,470	8,698	7,869	11,908	13,382
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	1,657	1,523	1,646	1,884	1,931	2,112	2,355	2,131	1,813	1,914	2,031
Marketing Expenses	800	617	615	791	763	869	1,030	1,054	1,087	1,560	1,047
Exploration / Dry Hole Costs	1,369	1,107	974	1,076	1,946	1,329	1,639	2,644	946	2,541	459
General and Administrative	866	983	982	1,060	1,246	1,090	1,316	1,176	1,440	1,075	1,084
Depreciation, Depletion and Amortization	3,194	3,532	3,714	3,830	3,964	3,927	4,550	4,603	4,301	4,279	4,254
Interest, net	793	659	736	1,093	488	775	792	974	789	879	888
Other	1,675	687	676	7,657	(492)	2,373	6,734	5,805	1,322	1,348	2,134
Earnings Before Income Tax	5,369	(108)	1,641	(3,424)	3,565	2,106	54	(9,689)	(3,829)	(1,688)	1,485
Current Income Taxes	2,182	160	943	605	956	1,075	1,764	300	237	698	2,908
Future Income Taxes	(34)	(165)	(123)	(1,461)	164	90	(147)	(3,177)	(1,258)	(2,175)	(2,175)
Total Income Taxes	2,148	(5)	820	(856)	1,120	1,165	1,617	(2,877)	(1,021)	(1,477)	733
Minority Interest	(23)	(32)	(60)	(81)	(54)	(140)	(187)	120	(263)	(245)	
Earnings From Continuing Operations	3,198	(135)	761	(2,649)	2,391	801	(1,750)	(6,692)	(3,071)	(456)	752
Discontinued Operations/Extraordinary Items	63	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	3,261	(135)	761	(2,649)	2,391	801	(1,750)	(6,692)	(3,071)	(456)	752
Preferred Stock Dividends	1	-	-	-	-	-	-	-	-		
Net Earnings to Common Shareholders	3,260	(135)	761	(2,649)	2,391	801	(1,750)	(6,692)	(3,071)	(456)	752

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	3,261	(135)	761	(2,649)	2,391	801	(1,750)	(6,692)	(3,071)	(456)	752
Charges and Credits Not Impacting Cash	4,177	4,262	4,489	4,768	4,517	4,811	5,281	6,526	3,290	2,518	5,193
Other	(1,605)	231	130	1,129	2,278	1,413	259	3,724	2,689	2,253	111
Cash Flow From Operations	5,833	4,358	5,380	3,248	9,186	7,025	3,790	3,558	2,908	4,315	6,056
Change in Working Capital / Other	609	(432)	(133)	(743)	(847)	1,863	4,676	(5,435)	92	(306)	(127)
Net Cash From Operating Activities	6,442	3,926	5,247	2,505	8,339	8,888	8,466	(1,877)	3,000	4,009	5,929
Total Capital Expenditures	(4,801)	(4,352)	(5,008)	(6,452)	(7,242)	(7,721)	(9,508)	(6,067)	(3,505)	(5,031)	(6,183)
Acquisitions, net	2,455	176	70	555	657	94	3,441	1,412	616	4,033	417
Other	(182)	(60)	(26)	(78)	(284)	(589)	(405)	(116)	127	(30)	(216)
Net Cash From Investing Activities	(2,528)	(4,236)	(4,964)	(5,975)	(6,869)	(8,216)	(6,472)	(4,771)	(2,762)	(1,028)	(5,982)
Net Change in Debt	(2,331)	365	(280)	2,397	(2,002)	248	1,454	599	(790)	268	615
Net Change in Common Stock	(606)	1,337	65	(11)	66	92	76	(21)	2,150	(1,092)	(2,725)
Net Change in Preferred Stock	(45)	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(171)	(176)	(180)	(181)	(181)	(274)	(505)	(553)	(105)	(111)	(528)
Other	331	(45)	273	305	458	557	650	195	753	(678)	(539)
Net Cash From Financing Activities	(2,822)	1,481	(122)	2,510	(1,659)	623	1,675	220	2,008	(1,613)	(3,177)
Effect of Exchange Rate on Cash	-	-	(12)	(23)	(37)	(68)	2	(2)	(1)	1	(28)
Net Increase/(Decrease) in Cash	1,092	1,171	149	(983)	(226)	1,227	3,671	(6,430)	2,245	1,369	(3,258)
Cash and Equivalents, Beginning of Year	1,268	2,360	3,531	3,680	2,697	2,471	3,698	7,369	939	3,184	4,553
Cash and Equivalents, End of Year	2,360	3,531	3,680	2,697	2,471	3,698	7,369	939	3,184	4,553	1,295

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Anadarko Petroleum Corp. (APC - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	5,375	6,083	6,675	6,931	6,795	7,108	11,221	3,982	5,266	6,762	3,795
Net Property, Plant and Equipment	37,047	37,204	37,957	37,501	38,398	40,929	41,589	33,751	32,168	27,451	28,615
Other Assets	6,501	6,836	6,927	7,347	7,396	7,744	8,879	8,681	8,130	7,873	7,966
Total Assets	48,923	50,123	51,559	51,779	52,589	55,781	61,689	46,414	45,564	42,086	40,376
Total Current Liabilities	5,536	3,824	4,114	4,899	3,994	5,703	10,234	4,181	3,328	3,906	4,658
Long-term Debt	10,867	12,748	12,722	15,060	13,269	13,065	15,092	15,718	15,281	15,547	15,470
Deferred Income Taxes	9,974	9,925	9,861	8,479	8,759	9,245	9,249	5,400	4,324	2,234	2,437
Other Liabilities and Deferred Credits	3,390	3,211	3,423	4,358	4,685	4,118	4,796	5,658	7,134	6,609	6,868
Total Liabilities	29,767	29,708	30,120	32,796	30,707	32,131	39,371	30,957	30,067	28,296	29,433
Minority Interests	361	-	755	878	1,253	1,793	2,593	2,638	3,285	3,094	2,447
Common Shares	47	50	51	51	51	52	52	52	57	57	57
Contributed Surplus (Paid-in Capital)	5,696	7,243	7,496	7,851	8,230	8,629	9,005	9,265	11,875	12,000	12,393
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	14,179	13,868	14,449	11,619	13,829	14,356	12,125	4,880	1,704	1,109	1,245
Other / Comprehensive Income (Loss)	(1,127)	(746)	(1,312)	(1,416)	(1,481)	(1,180)	(1,457)	(1,378)	(1,424)	(2,470)	(5,199)
Total Shareholders' Equity	18,795	20,415	20,684	18,105	20,629	21,857	19,725	12,819	12,212	10,696	8,496
Total Liabilities and Shareholders' Equity	48,923	50,123	51,559	51,779	52,589	55,781	61,689	46,414	45,564	42,086	40,376
Return on Equity Employed (ROCE)	**12.4%**	**1.0%**	**4.0%**	**-5.9%**	**8.8%**	**4.0%**	**-3.7%**	**-19.2%**	**-9.2%**	**0.6%**	**5.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	13,558	7,525	10,035	12,793	12,332	13,207	15,169	8,260	7,153	8,969	11,482	27,604	51,033
Production Costs	3,360	2,540	2,971	3,682	3,445	3,473	3,967	3,028	2,621	2,786	3,278	8,685	15,680
Exploration	1,369	1,107	974	1,076	1,946	1,329	1,639	2,644	946	2,541	459	3,946	8,229
DD&A	2,993	3,319	3,485	3,584	3,710	3,621	4,181	4,184	3,907	3,894	4,172	11,973	20,338
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	5,836	559	2,605	4,451	3,231	4,784	5,382	-1,596	-321	-252	3,573	3,000	6,786
Income Taxes	2,316	658	1,080	1,711	1,376	1,850	2,345	-174	-106	-140	1,175	929	3,100
Results Of Operations	3,520	-99	1,525	2,740	1,855	2,934	3,037	-1,422	-215	-112	2,398	2,071	3,686

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	10,906	6,047	8,006	8,935	8,984	9,634	11,878	6,593	5,755	7,175	9,071	22,001	40,472
Production Costs	2,473	2,010	2,266	2,697	2,616	2,773	3,164	2,514	2,077	2,251	2,556	6,884	12,562
Exploration	1,011	810	677	688	1,484	611	1,218	1,447	541	1,699	417	2,657	5,322
DD&A	2,818	3,138	3,281	3,193	3,320	3,222	3,783	3,785	3,512	3,260	3,571	10,343	17,911
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	4,604	89	1,782	2,357	1,564	3,028	3,713	-1,153	-375	-35	2,527	2,117	4,677
Income Taxes	1,598	34	517	684	433	845	1,366	-426	-138	-13	585	435	1,375
Results Of Operations	3,006	55	1,265	1,673	1,131	2,183	2,347	-727	-237	-22	1,942	1,682	3,302

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	2,652	1,478	2,029	3,858	3,348	3,573	3,291	1,667	1,398	1,794	2,411	5,603	10,561
Production Costs	887	530	705	985	829	700	803	514	544	535	722	1,801	3,118
Exploration	358	297	297	388	462	718	421	1,197	405	842	42	1,289	2,907
DD&A	175	181	204	391	390	399	398	399	395	634	601	1,630	2,427
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	1,232	470	823	2,094	1,667	1,756	1,669	-443	54	-217	1,046	883	2,109
Income Taxes	719	624	563	1,027	943	1,005	979	252	32	-127	590	494	1,725
Results Of Operations	513	-154	260	1,067	724	751	690	-695	22	-90	456	389	384

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Anadarko Petroleum Corp. (APC - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$66.14	$33.57	$42.85	$52.00	$46.07	$46.53	$48.54	$26.98	$24.62	$36.93	$47.48	$35.61	$36.61
Production Costs	$16.39	$11.33	$12.69	$14.97	$12.87	$12.24	$12.69	$9.89	$9.02	$11.47	$13.55	$11.20	$11.25
Exploration	$6.68	$4.94	$4.16	$4.37	$7.27	$4.68	$5.24	$8.64	$3.26	$10.46	$1.90	$5.09	$5.90
DD&A	$14.60	$14.81	$14.88	$14.57	$13.86	$12.76	$13.38	$13.67	$13.45	$16.04	$17.25	$15.45	$14.59
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$28.47	$2.49	$11.12	$18.09	$12.07	$16.85	$17.22	-$5.21	-$1.10	-$1.04	$14.77	$3.87	$4.87
Income Taxes	$11.30	$2.94	$4.61	$6.95	$5.14	$6.52	$7.50	-$0.57	-$0.36	-$0.58	$4.86	$1.20	$2.22
Results Of Operations	$17.17	-$0.44	$6.51	$11.14	$6.93	$10.34	$9.72	-$4.64	-$0.74	-$0.46	$9.92	$2.67	$2.64

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$60.93	$30.36	$38.46	$41.37	$37.96	$38.26	$42.96	$24.21	$22.34	$34.52	$43.61	$32.67	$33.11
Production Costs	$13.82	$10.09	$10.89	$12.49	$11.05	$11.01	$11.44	$9.23	$8.06	$10.83	$12.29	$10.22	$10.28
Exploration	$5.65	$4.07	$3.25	$3.19	$6.27	$2.43	$4.41	$5.31	$2.10	$8.17	$2.00	$3.95	$4.35
DD&A	$15.74	$15.76	$15.76	$14.78	$14.03	$12.79	$13.68	$13.90	$13.63	$15.69	$17.17	$15.36	$14.65
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$25.72	$0.45	$8.56	$10.91	$6.61	$12.02	$13.43	-$4.23	-$1.46	-$0.17	$12.15	$3.14	$3.83
Income Taxes	$8.93	$0.17	$2.48	$3.17	$1.83	$3.36	$4.94	-$1.56	-$0.53	-$0.06	$2.81	$0.65	$1.12
Results Of Operations	$16.80	$0.27	$6.08	$7.75	$4.78	$8.67	$8.49	-$2.67	-$0.92	-$0.11	$9.34	$2.50	$2.70

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$102.00	$59.12	$78.04	$128.60	$108.00	$111.66	$91.42	$49.27	$42.58	$51.26	$71.26	$55.11	$61.58
Production Costs	$34.12	$21.20	$27.12	$32.83	$26.74	$21.88	$22.31	$15.19	$16.57	$15.29	$21.34	$17.71	$18.18
Exploration	$13.77	$11.88	$11.42	$12.93	$14.90	$22.44	$11.69	$35.38	$12.34	$24.06	$1.24	$12.68	$16.95
DD&A	$6.73	$7.24	$7.85	$13.03	$12.58	$12.47	$11.06	$11.79	$12.03	$18.11	$17.76	$16.03	$14.15
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$47.38	$18.80	$31.65	$69.80	$53.77	$54.88	$46.36	-$13.09	$1.64	-$6.20	$30.92	$8.69	$12.30
Income Taxes	$27.64	$24.96	$21.65	$34.23	$30.42	$31.41	$27.19	$7.45	$0.96	-$3.64	$17.44	$4.86	$10.06
Results Of Operations	$19.75	-$6.16	$10.00	$35.57	$23.35	$23.47	$19.17	-$20.54	$0.68	-$2.56	$13.48	$3.82	$2.24

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Anadarko Petroleum Corp. (APC - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	2,054.8	2,238.4	2,271.2	2,334.2	2,509.6	2,643.8	2,605.5	2,353.4	2,112.3	1,279.5	1,082.2	1,491.3	1,886.6
Liquids Production (b/d)	219,178	241,096	263,014	284,932	315,068	336,986	421,918	446,575	443,836	452,055	482,192	459,361	449,315
Total Production (boe/d)	561,644	614,155	641,553	673,973	733,333	777,626	856,164	838,813	795,890	665,297	662,557	707,915	763,744
% Gas Production	61%	61%	59%	58%	57%	57%	51%	47%	44%	32%	27%	35%	41%
% Oil Production	39%	39%	41%	42%	43%	43%	49%	53%	56%	68%	73%	65%	59%
Proven Reserves:													
Gas Reserves (bcf)	8,105.0	7,764.0	8,117.0	8,365.0	8,329.0	9,205.0	8,699.0	6,021.0	4,424.0	3,230.0	3,230.0	3,628.0	5,120.8
Oil Reserves (mmbbls)	926.0	1,010.0	1,069.0	1,145.0	1,172.0	1,258.0	1,408.0	1,053.0	985.0	901.0	935.0	940.3	1,056.4
Total Proven Reserves (mmboe)	2,276.8	2,304.0	2,421.8	2,539.2	2,560.2	2,792.2	2,857.8	2,056.5	1,722.3	1,439.3	1,473.3	1,545.0	1,909.9
% Gas Reserves	59%	56%	56%	55%	54%	55%	51%	49%	43%	37%	37%	39%	45%
% Oil Reserves	41%	44%	44%	45%	46%	45%	49%	51%	57%	63%	63%	61%	55%
Proven Reserve Life Index	11.1	10.3	10.3	10.3	9.6	9.8	9.1	6.7	5.9	5.9	6.1	6.0	6.8
Proven Reserve Additions:													
Gas Additions (bcf)	351.0	476.0	1,182.0	1,100.0	880.0	1,841.0	445.0	(1,819.0)	(826.0)	(727.0)	395.0	(1,158.0)	(2,532.0)
Oil Additions (mmbbls)	(8.0)	172.0	155.0	180.0	142.0	209.0	304.0	(192.0)	94.0	81.0	210.0	385.0	497.0
Total Additions (mmboe)	50.5	251.3	352.0	363.3	288.7	515.8	378.2	-495.2	-43.7	-40.2	275.8	192.0	75.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	102.0	70.0	83.5	174.3	81.7	145.3	62.7	29.0	39.8	113.8	163.7	317.3	409.0
Acquisitions	0.0	31.8	1.2	0.0	4.3	35.5	-	1.3	97.3	3.0	-	100.3	101.7
Dispositions	(136.7)	(23.5)	(6.5)	(28.7)	(81.2)	(11.7)	(124.0)	(279.2)	(293.5)	(379.3)	(36.5)	(709.3)	(1,112.5)
Revisions of Estimates	85.2	173.0	273.8	217.7	283.8	346.7	439.5	(246.3)	112.7	222.3	148.7	483.7	676.8
Components as % of Total Additions:													
Extensions, Discoveries and Additions	202.0%	27.9%	23.7%	48.0%	28.3%	28.2%	16.6%	-5.9%	-91.2%	-283.4%	59.3%	165.3%	545.3%
Acquisitions	0.0%	12.7%	0.3%	0.0%	1.5%	6.9%	0.0%	-0.3%	-222.9%	-7.5%	0.0%	52.3%	135.6%
Dispositions	-270.6%	-9.4%	-1.8%	-7.9%	-28.1%	-2.3%	-32.8%	56.4%	672.1%	944.4%	-13.2%	-369.4%	-1483.3%
Revisions of Estimates	168.6%	68.8%	77.8%	59.9%	98.3%	67.2%	116.2%	49.7%	-258.0%	-553.5%	53.9%	251.9%	902.4%
Additions as % of Production:													
Gas	46.8%	58.3%	142.6%	129.1%	96.1%	190.8%	46.8%	-211.8%	-107.1%	-155.7%	100.0%	-70.9%	-73.5%
Oil	-10.0%	195.5%	161.5%	173.1%	123.5%	169.9%	197.4%	-117.8%	58.0%	49.1%	119.3%	76.5%	60.6%
Total	24.6%	112.1%	150.3%	147.7%	107.8%	181.7%	121.0%	-161.7%	-15.0%	-16.5%	114.1%	24.8%	5.4%
Additions as % of Reserves:													
Gas	4.3%	6.1%	14.6%	13.2%	10.6%	20.0%	5.1%	-30.2%	-18.7%	-22.5%	12.2%	-31.9%	-49.4%
Oil	-0.9%	17.0%	14.5%	15.7%	12.1%	16.6%	21.6%	-18.2%	9.5%	9.0%	22.5%	40.9%	47.0%
Total	2.2%	10.9%	14.5%	14.3%	11.3%	18.5%	13.2%	-24.1%	-2.5%	-2.8%	18.7%	12.4%	3.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,031.0	$1,229.0	$1,278.0	$1,469.0	$2,064.0	$2,095.0	$1,711.0	$1,112.0	$831.0	$972.0	$569.0	$2,372.0	$5,195.0
Development	$3,530.0	$2,886.0	$3,267.0	$3,525.0	$4,064.0	$8,013.0	$6,715.0	$4,266.0	$2,117.0	$2,639.0	$3,753.0	$8,509.0	$19,490.0
Acquisitions	$431.0	$545.0	$541.0	$647.0	$239.0	$830.0	$286.0	$375.0	$2,685.0	$482.0	$245.0	$3,412.0	$4,073.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Other													
Total Expenditures	$4,992.0	$4,660.0	$5,086.0	$5,641.0	$6,367.0	$10,938.0	$8,712.0	$5,753.0	$5,633.0	$4,093.0	$4,567.0	$14,293.0	$28,758.0
Expenditures as % of Total:													
Exploration	20.7%	26.4%	25.1%	26.0%	32.4%	19.2%	19.6%	19.3%	14.8%	23.7%	12.5%	16.6%	18.1%
Development	70.7%	61.9%	64.2%	62.5%	63.8%	73.3%	77.1%	74.2%	37.6%	64.5%	82.2%	59.5%	67.8%
Acquisitions	8.6%	11.7%	10.6%	11.5%	3.8%	7.6%	3.3%	6.5%	47.7%	11.8%	5.4%	23.9%	14.2%
Cashflow (US$million)	$5,833.0	$4,358.0	$5,380.0	$3,248.0	$9,186.0	$7,025.0	$3,790.0	$3,558.0	$2,908.0	$4,315.0	$6,056.0	$13,279.0	$20,627.0
Cashflow (US$/boe)	$28.45	$19.44	$22.98	$13.20	$34.32	$24.75	$12.13	$11.62	$10.01	$17.77	$25.04	$17.13	$24.66
Recycle Ratio	1.1x	1.1x	1.6x	0.9x	2.0x	1.2x	0.7x	-0.4x	0.4x	1.5x	1.7x	1.1x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$24.37	$16.93	$12.72	$12.74	$16.77	$20.54	$16.78	-$24.75	$19.33	$10.74	$13.84	$13.58	$22.73
Acquisition Costs	na	$17.12	$463.71	na	$55.15	$23.38	na	$281.25	$27.59	$160.67	na	$34.01	$40.06
All Sources (incl. Revisions)	$26.67	$16.96	$14.19	$14.39	$17.22	$20.74	$17.35	-$26.63	$22.55	$12.07	$14.62	$15.86	$24.22
Exploration & Development (excl. revisions)	$44.72	$58.79	$54.43	$28.65	$75.04	$69.55	$134.46	$185.45	$74.01	$31.72	$26.41	$34.29	$60.35
Acquisition Costs	na	$17.12	$463.71	na	$55.15	$23.38	na	$281.25	$27.59	$160.67	na	$34.01	$40.06
All Sources (excl. revisions)	$48.94	$45.76	$60.07	$32.36	$74.03	$60.49	$139.02	$189.66	$41.07	$35.03	$27.90	$34.22	$56.31
Geographically Segmented Costs													
North America	$22.74	$14.04	$11.02	$11.23	$15.31	$12.30	$15.77	-$21.14	$19.83	$12.05	$14.57	$15.16	$22.40
Algeria	-$2.05	na	na	na	na	na	na	na	na	na	na	na	na
Other International	$17.69	$33.56	$39.38	$99.64	$29.16	$139.43	$47.36	-$912.00	$155.80	$12.28	$15.92	$28.55	$52.94

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Anadarko Petroleum Corp. (APC - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	16.39	11.33	12.69	14.97	12.87	12.24	12.69	9.89	9.02	11.47	13.55	11.20	11.25
Exploration Expense	6.68	4.94	4.16	4.37	7.27	4.68	5.24	8.64	3.26	10.46	1.90	5.09	5.90
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	26.67	16.96	14.19	14.39	17.22	20.74	17.35	31.22	22.55	12.07	14.62	15.86	19.56
Return on Capital	18.92	10.95	9.23	9.34	10.33	12.78	10.19	13.16	8.35	4.50	5.56	5.97	8.27
Income Taxes	12.45	6.81	6.54	5.83	7.66	8.06	7.87	9.38	4.11	2.93	2.72	3.23	5.09
Breakeven Oil Price	81.11	50.99	46.80	48.91	55.34	58.49	53.35	72.29	47.28	41.43	38.36	41.35	50.08
Quality Differential	4.76	6.20	5.63	8.84	11.60	13.28	13.41	8.91	7.32	6.10	9.58	7.67	9.06
Required Brent Price	85.87	57.19	52.43	57.75	66.94	71.77	66.76	81.20	54.60	47.54	47.94	49.02	59.14

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	13.82	10.09	10.89	12.49	11.05	11.01	11.44	9.23	8.06	10.83	12.29	10.22	10.28
Exploration Expense	5.65	4.07	3.25	3.19	6.27	2.43	4.41	5.31	2.10	8.17	2.00	3.95	4.35
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	22.74	14.04	11.02	11.23	15.31	12.30	15.77	24.00	19.83	12.05	14.57	15.16	17.24
Return on Capital	16.42	9.11	7.14	7.44	9.30	7.66	9.35	10.22	7.43	4.62	5.83	5.86	7.48
Income Taxes	8.73	5.71	2.92	3.04	3.56	2.96	5.44	5.99	4.30	2.67	1.75	2.78	3.86
Breakeven Oil Price	67.35	43.02	35.23	37.38	45.49	36.36	46.40	54.75	41.72	38.35	36.44	37.97	43.21
Quality Differential	5.99	6.54	6.05	12.52	12.63	15.34	14.12	9.60	8.02	6.71	11.31	8.68	9.95
Required Brent Price	73.34	49.56	41.27	49.91	58.12	51.69	60.53	64.35	49.74	45.06	47.75	46.65	53.17

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	34.12	21.20	27.12	32.83	26.74	21.88	22.31	15.19	16.57	15.29	21.34	17.71	18.18
Exploration Expense	13.77	11.88	11.42	12.93	14.90	22.44	11.69	35.38	12.34	24.06	1.24	12.68	16.95
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	36.30	33.56	39.38	99.64	29.16	139.43	47.36	123.88	110.53	12.28	15.92	46.24	61.99
Return on Capital	20.41	21.04	25.64	54.59	15.63	81.84	20.09	50.94	49.43	3.88	4.68	14.72	22.00
Income Taxes	28.57	24.05	55.52	52.55	20.35	109.52	28.50	62.26	70.13	5.50	6.06	20.25	29.73
Breakeven Oil Price	133.16	111.73	159.07	252.55	106.78	375.09	129.95	287.65	258.99	61.00	49.24	111.61	148.85
Quality Differential	(3.72)	3.51	2.31	(17.65)	3.69	(2.92)	7.97	3.36	1.79	2.49	(1.06)	1.07	2.91
Required Brent Price	129.44	115.24	161.38	234.90	110.48	372.17	137.92	291.00	260.78	63.48	48.18	112.68	151.76

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Algeria													
Operating Costs	102.76	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	35.29	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	3.10	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	38.17	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	1.00	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	-	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	180.31	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	0.56	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	180.87	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Anadarko Petroleum Corp. (APC - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.22	17.72	21.10	27.02	24.79	22.22	20.21	14.68	13.04	14.59	17.12	14.88	15.90
Exploration Expense	9.46	7.72	6.92	7.90	14.00	8.50	8.35	12.81	4.71	13.30	2.40	6.76	8.35
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	34.63	21.50	23.01	23.30	29.17	38.56	22.47	46.17	28.29	16.25	17.56	20.10	26.15
Return on Capital	25.20	14.42	15.36	15.76	18.30	24.66	13.18	19.11	10.77	5.78	6.20	7.31	10.84
Income Taxes	16.58	8.97	10.88	9.84	13.58	15.55	10.18	13.62	5.30	3.76	3.04	3.95	6.67
Breakeven Oil Price	**109.09**	**70.32**	**77.28**	**83.82**	**99.84**	**109.48**	**74.40**	**106.38**	**62.11**	**53.69**	**46.31**	**53.01**	**67.90**
Quality Differential	6.75	9.69	9.37	15.97	22.34	24.11	21.35	13.22	10.58	7.76	12.10	10.15	10.00
Required Brent Price	**115.84**	**80.01**	**86.64**	**99.79**	**122.18**	**133.59**	**95.76**	**119.60**	**72.68**	**61.45**	**58.41**	**63.16**	**77.91**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.22	17.72	21.10	27.02	24.79	22.22	20.21	14.68	13.04	14.59	17.12	14.88	15.90
Exploration Expense	9.46	7.72	6.92	7.90	14.00	8.50	8.35	12.81	4.71	13.30	2.40	6.76	8.35
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	22.71	21.52	31.29	21.45	31.29	58.11	34.37	32.69	26.34	15.12	17.76	19.27	25.26
Return on Capital	16.11	14.44	21.09	14.41	19.62	36.77	19.67	13.50	9.97	5.43	6.26	6.99	10.47
Income Taxes	10.60	8.98	14.94	9.00	14.56	23.18	15.19	9.62	4.90	3.53	3.07	3.78	6.44
Breakeven Oil Price	**82.11**	**70.38**	**95.34**	**79.78**	**104.26**	**148.78**	**97.80**	**83.30**	**58.96**	**51.97**	**46.61**	**51.68**	**66.41**
Quality Differential	6.75	9.69	9.37	15.97	22.34	24.11	21.35	13.22	10.58	7.76	12.10	10.15	10.00
Required Brent Price	**88.85**	**80.07**	**104.70**	**95.74**	**126.60**	**172.89**	**119.15**	**96.52**	**69.53**	**59.73**	**58.71**	**61.83**	**76.41**

Source: BMO Capital Markets, Company Reports

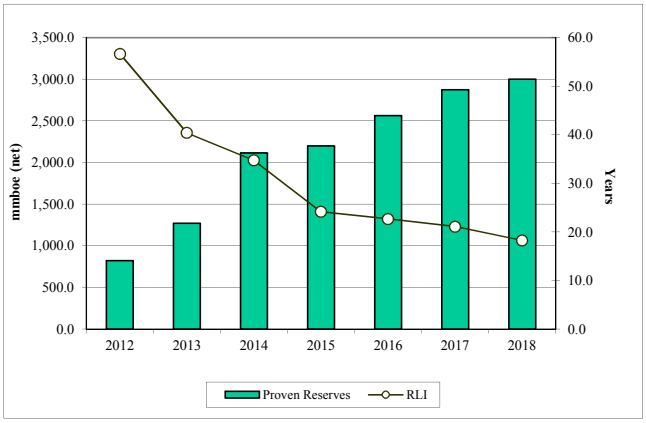
See pages F1 to F4 for analyst coverage.

Antero Resources (AR - NYSE) US$, net

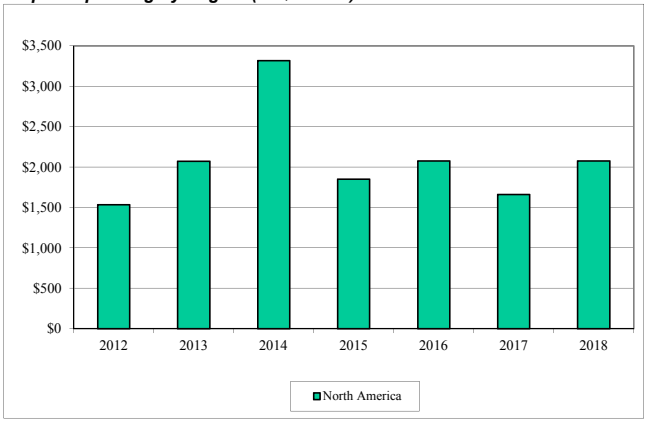
- Antero's results of operations improved to $7.29/boe versus $3.50/boe in 2017.
- The company's one-year F&D cost increased to $7.15/boe from $3.70/boe last year. On a realized oil:gas price ratio basis, F&D costs came in at $8.99/boe versus $4.92/boe in 2017 while the costs for proved developed reserves were recorded at $5.47/boe compared to $5.31/boe the previous year.
- Antero's 2018 results imply a Brent breakeven oil price of $52.94/boe on total proved reserves (realized ratio basis), while its PD costs imply a Brent breakeven oil price of $43.04/boe.
- Antero reported a loss on capital employed of 1.6% in 2018 versus a normalized gain of 3.1% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

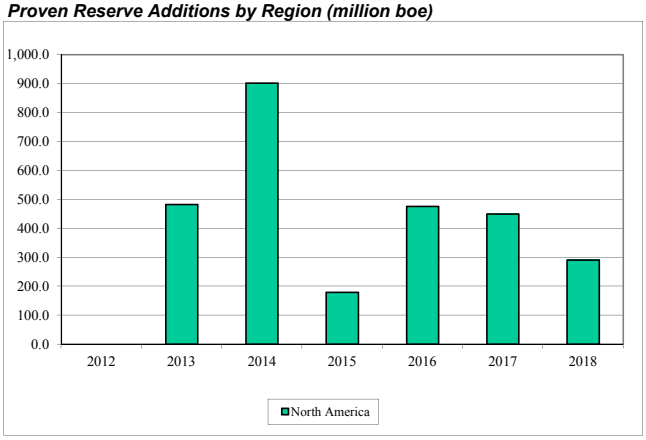
Proven Reserves vs RLI



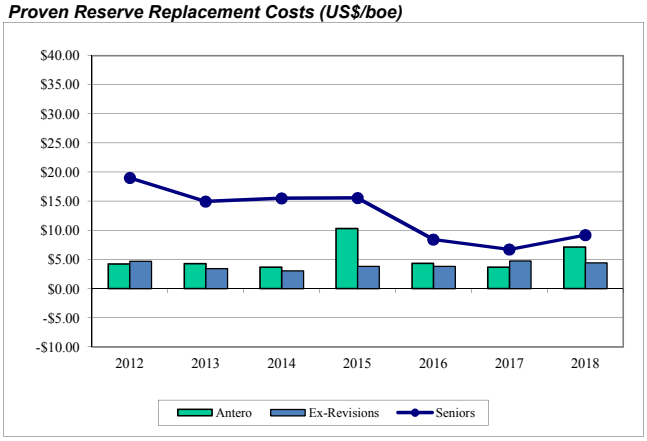
Capital Spending by Region (US$million)



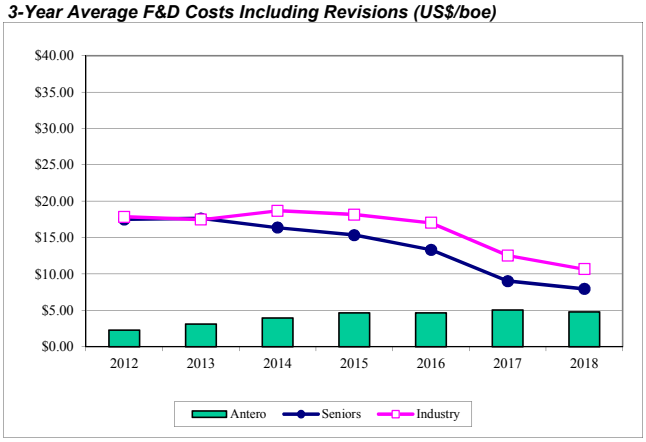
Proven Reserve Additions by Region (million boe)



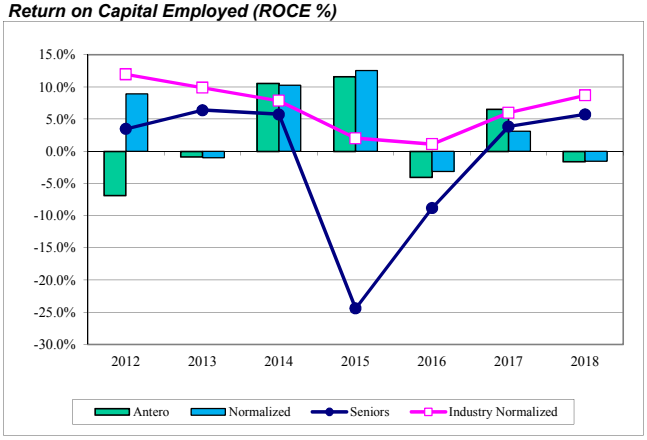
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

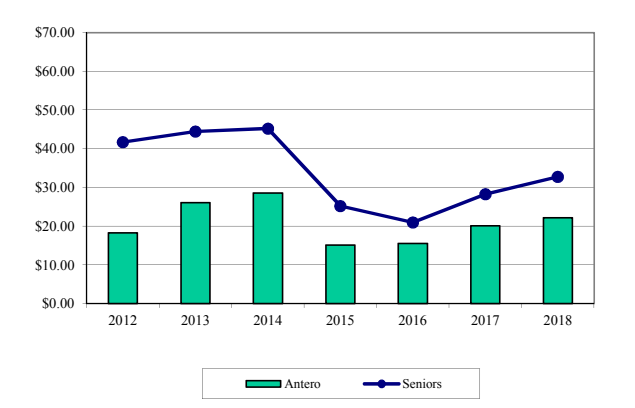
See pages F1 to F4 for analyst coverage.

Antero Resources (AR - NYSE)

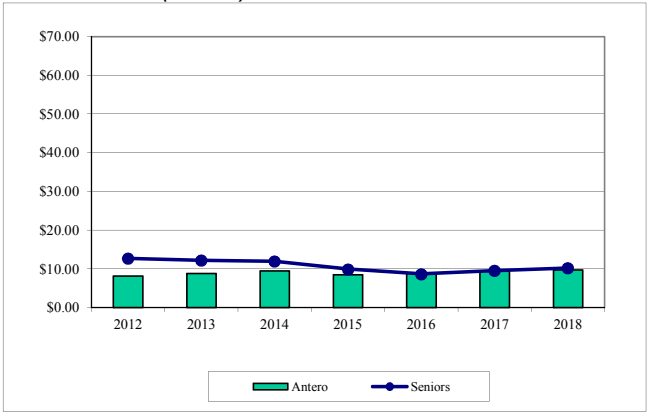
US$/boe, net

North America

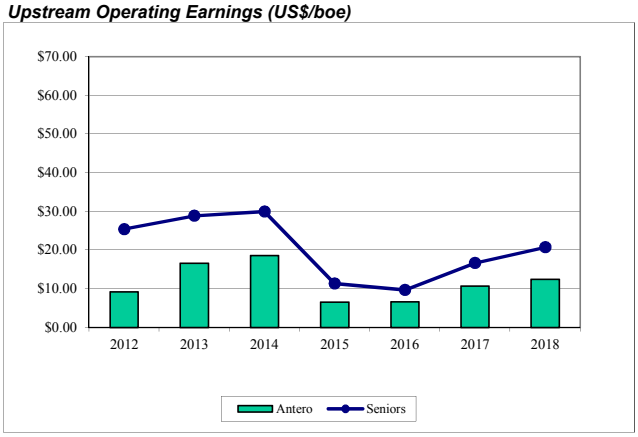
Upstream Net Revenue (US$/boe)



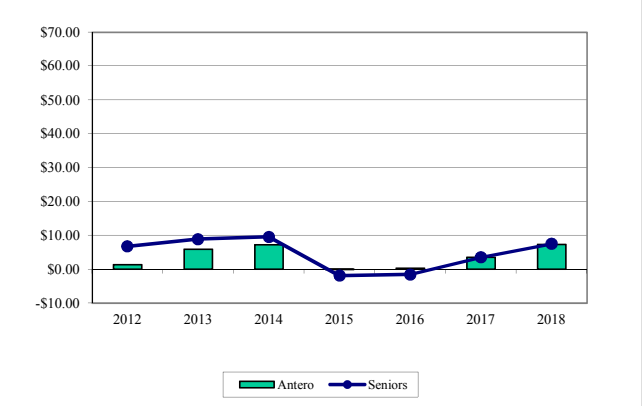
Production Costs (US$/boe)



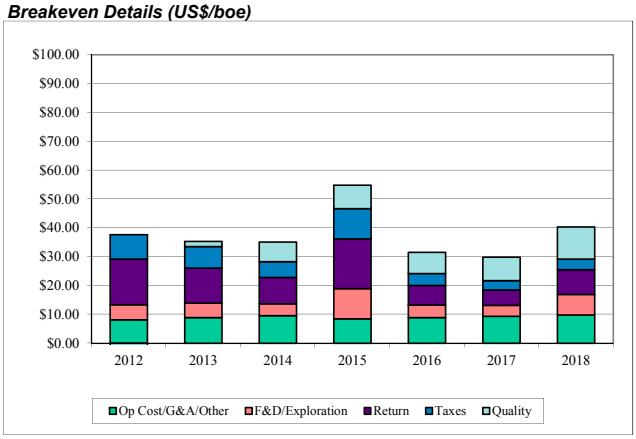
Upstream Operating Earnings (US$/boe)



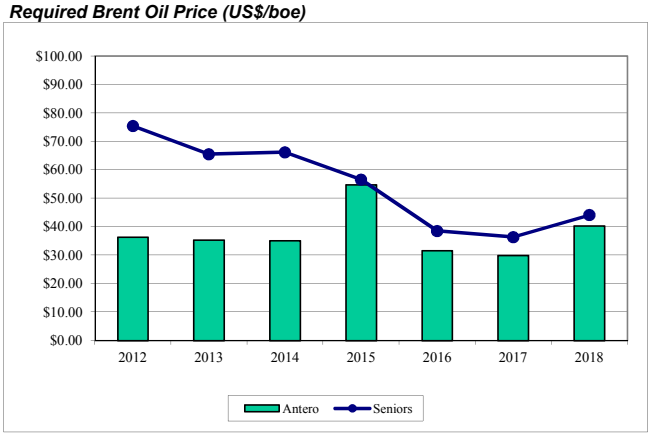
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Antero Resources (AR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	265	821	1,737	1,375	1,755	2,748	3,653
Midstream / Downstream Revenue	-	-	-	-	-	-	76	198	406	271	480
Other	-	-	-	-	471	492	908	2,382	(417)	637	6
Total Revenue and Other Income	-	-	-	-	736	1,313	2,721	3,955	1,745	3,656	4,140
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	-	97	228	491	695	933	1,185	1,476
Marketing Expenses	-	-	-	-	-	-	103	299	499	366	686
Exploration / Dry Hole Costs	-	-	-	-	15	22	28	4	7	9	5
General and Administrative	-	-	-	-	45	425	217	234	239	251	240
Depreciation, Depletion and Amortization	-	-	-	-	102	234	478	710	810	825	972
Interest, net	-	-	-	-	98	137	160	234	254	269	287
Other	-	-	-	-	32	104	124	221	246	259	645
Earnings Before Income Tax	-	-	-	-	347	162	1,119	1,556	(1,246)	490	(175)
Current Income Taxes	-	-	-	-	15	(4)	-	-	(11)	0	-
Future Income Taxes	-	-	-	-	106	190	446	576	(485)	(295)	(129)
Total Income Taxes	-	-	-	-	121	186	446	576	(496)	(295)	(129)
Minority Interest	-	-	-	-	-	-	(2)	(39)	(99)	(170)	(352)
Earnings From Continuing Operations	-	-	-	-	225	(24)	671	941	(849)	615	(398)
Discontinued Operations/Extraordinary Items	-	-	-	-	(510)	5	2	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	(285)	(19)	674	941	(849)	615	(398)
Preferred Stock Dividends	-	-	-	-						-	-
Net Earnings to Common Shareholders	-	-	-	-	(285)	(19)	674	941	(849)	615	(398)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2,012	2,013	2,014	2,015	2,016	2,017	2,018
Net Earnings	-	-	-	-	(285)	(19)	674	941	(849)	615	(398)
Charges and Credits Not Impacting Cash	-	-	-	-	220	435	939	1,390	487	713	1,403
Other					372	84	(632)	(1,355)	1,636	603	1,102
Cash Flow From Operations	-	-	-	-	307	500	980	976	1,274	1,930	2,107
Change in Working Capital / Other	-	-	-	-	25	34	18	30	(33)	76	(25)
Net Cash From Operating Activities	-	-	-	-	332	535	998	1,006	1,241	2,006	2,082
Total Capital Expenditures	-	-	-	-	(1,683)	(2,672)	(4,087)	(2,348)	(2,495)	(2,217)	(2,211)
Acquisitions, net	-	-	-	-	1,218	-	-	40	172	2	
Other	-	-	-	-	1	(2)	(3)	10	(72)	(247)	(140)
Net Cash From Investing Activities	-	-	-	-	(463)	(2,674)	(4,090)	(2,298)	(2,395)	(2,462)	(2,351)
Net Change in Debt	-	-	-	-	152	559	2,285	347	48	74	658
Net Change in Common Stock	-	-	-	-	-	1,579	1,087	779	1,256	560	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	(34)	-	-	-
Other	-	-	-	-	(5)	-	(52)	(22)	(142)	(182)	(418)
Net Cash From Financing Activities	-	-	-	-	147	2,137	3,320	1,069	1,162	452	240
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	16	(2)	228	(223)	8	(3)	(28)
Cash and Equivalents, Beginning of Year	-	-	-	-	3	19	17	246	23	32	28
Cash and Equivalents, End of Year	-	-	-	-	19	17	246	23	32	28	(0)

Source: BMO Capital Markets, Company Reports

Antero Resources (AR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	275	334	1,252	1,248	403	833	807
Net Property, Plant and Equipment	-	-	-	-	2,937	5,560	9,352	10,732	12,027	13,236	13,870
Other Assets	-	-	-	-	407	720	969	2,175	1,826	1,193	843
Total Assets	-	-	-	-	3,619	6,614	11,573	14,155	14,256	15,261	15,519
Total Current Liabilities	-	-	-	-	376	622	1,155	707	817	762	854
Long-term Debt	-	-	-	-	1,444	2,079	4,363	4,709	4,704	4,800	5,462
Deferred Income Taxes	-	-	-	-	92	279	534	1,371	950	780	651
Other Liabilities and Deferred Credits	-	-	-	-	33	35	48	82	55	44	66
Total Liabilities	-	-	-	-	1,945	3,015	6,100	6,869	6,527	6,385	7,032
Minority Interests	-	-	-	-	-	-	1,090	1,352	1,466	727	822
Common Shares	-	-	-	-	-	3	3	3	3	3	3
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	3,402	3,514	4,123	5,299	6,571	6,485
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	213	194	867	1,809	960	1,575	1,178
Other / Comprehensive Income (Loss)	-	-	-	-	1,461	-	-	-	-	-	-
Total Shareholders' Equity	-	-	-	-	1,674	3,599	4,384	5,934	6,263	8,149	7,666
Total Liabilities and Shareholders' Equity	-	-	-	-	3,619	6,614	11,573	14,155	14,256	15,261	15,519
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**-6.9%**	**-0.9%**	**10.5%**	**11.6%**	**-4.1%**	**6.5%**	**-1.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	0	0	0	0	265	821	1,737	1,375	1,755	2,748	3,653	8,156	11,268
Production Costs	0	0	0	0	118	278	579	774	1,000	1,279	1,602	3,881	5,233
Exploration	0	0	0	0	15	22	28	4	7	9	5	20	52
DD&A	0	0	0	0	102	220	419	615	700	694	975	2,370	3,403
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	0	0	0	0	31	301	711	-17	48	766	1,071	1,885	2,579
Income Taxes	0	0	0	0	11	115	269	-6	18	288	-129	178	440
Results Of Operations	0	0	0	0	20	186	443	-11	30	478	1,200	1,707	2,139

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	0	0	0	0	265	821	1,737	1,375	1,755	2,748	3,653	8,156	11,268
Production Costs	0	0	0	0	118	278	579	774	1,000	1,279	1,602	3,881	5,233
Exploration	0	0	0	0	15	22	28	4	7	9	5	20	52
DD&A	0	0	0	0	102	220	419	615	700	694	975	2,370	3,403
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	0	0	0	0	31	301	711	-17	48	766	1,071	1,885	2,579
Income Taxes	0	0	0	0	11	115	269	-6	18	288	-129	178	440
Results Of Operations	0	0	0	0	20	186	443	-11	30	478	1,200	1,707	2,139

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Antero Resources (AR - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$0.00	$0.00	$0.00	$0.00	$18.27	$26.08	$28.55	$15.08	$15.51	$20.13	$22.21	$19.69	$19.90
Production Costs	$0.00	$0.00	$0.00	$0.00	$8.11	$8.84	$9.51	$8.49	$8.83	$9.37	$9.74	$9.37	$9.24
Exploration	$0.00	$0.00	$0.00	$0.00	$1.01	$0.71	$0.46	$0.04	$0.06	$0.06	$0.03	$0.05	$0.09
DD&A	$0.00	$0.00	$0.00	$0.00	$7.04	$6.98	$6.88	$6.74	$6.19	$5.09	$5.93	$5.72	$6.01
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations	$0.00	$0.00	$0.00	$0.00	$2.12	$9.56	$11.69	-$0.19	$0.43	$5.61	$6.51	$4.55	$4.56
Income Taxes	$0.00	$0.00	$0.00	$0.00	$0.74	$3.65	$4.42	-$0.07	$0.16	$2.11	-$0.78	$0.43	$0.78
Results of Operations	$0.00	$0.00	$0.00	$0.00	$1.38	$5.91	$7.28	-$0.12	$0.27	$3.50	$7.29	$4.12	$3.78

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$0.00	$0.00	$0.00	$0.00	$18.27	$26.08	$28.55	$15.08	$15.51	$20.13	$22.21	$19.69	$19.90
Production Costs	$0.00	$0.00	$0.00	$0.00	$8.11	$8.84	$9.51	$8.49	$8.83	$9.37	$9.74	$9.37	$9.24
Exploration	$0.00	$0.00	$0.00	$0.00	$1.01	$0.71	$0.46	$0.04	$0.06	$0.06	$0.03	$0.05	$0.09
DD&A	$0.00	$0.00	$0.00	$0.00	$7.04	$6.98	$6.88	$6.74	$6.19	$5.09	$5.93	$5.72	$6.01
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$0.00	$0.00	$0.00	$0.00	$2.12	$9.56	$11.69	-$0.19	$0.43	$5.61	$6.51	$4.55	$4.56
Income Taxes	$0.00	$0.00	$0.00	$0.00	$0.74	$3.65	$4.42	-$0.07	$0.16	$2.11	-$0.78	$0.43	$0.78
Results Of Operations	$0.00	$0.00	$0.00	$0.00	$1.38	$5.91	$7.28	-$0.12	$0.27	$3.50	$7.29	$4.12	$3.78

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Antero Resources (AR - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	238.4	484.9	868.5	1,202.7	1,383.6	1,619.2	1,947.9	1,650.2	1,404.4
Liquids Production (b/d)	-	-	-	-	-	5,479	21,918	49,315	79,452	104,110	126,027	103,196	76,164
Total Production (boe/d)	-	-	-	-	39,726	86,301	166,667	249,772	310,046	373,973	450,685	378,234	310,228
% Gas Production	-	-	-	-	100%	94%	87%	80%	74%	72%	72%	73%	75%
% Oil Production	-	-	-	-	0%	6%	13%	20%	26%	28%	28%	27%	25%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	3,694.0	6,753.0	10,535.0	9,533.0	9,414.0	11,098.0	11,425.0	10,645.7	10,401.0
Closing Oil Reserves (mmbbls)	-	-	-	-	206.0	147.0	358.0	613.0	995.0	1,027.0	1,098.0	1,040.0	818.2
Closing Total Proven Reserves (mmboe)	-	-	-	-	821.7	1,272.5	2,113.8	2,201.8	2,564.0	2,876.7	3,002.2	2,814.3	2,551.7
% Gas Reserves	-	-	-	-	75%	88%	83%	72%	61%	64%	63%	63%	68%
% Oil Reserves	-	-	-	-	25%	12%	17%	28%	39%	36%	37%	37%	32%
Proven Reserve Life Index	-	-	-	-	56.7	40.4	34.7	24.2	22.7	21.1	18.3	20.7	24.2
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	-150.0	3,236.0	4,099.0	-563.0	386.0	2,275.0	1,038.0	3,699.0	7,235.0
Oil Additions (mmbbls)	-	-	-	-	25.0	-57.0	219.0	273.0	411.0	70.0	117.0	598.0	1,090.0
Total Additions (mmboe)	-	-	-	-	0.0	482.3	902.2	179.2	475.3	449.2	290.0	1,214.5	2,295.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	325.0	597.0	1,074.2	480.5	439.7	285.2	464.2	1,189.0	2,743.7
Acquisitions	-	-	-	-	0.0	0.0	4.8	0.0	104.2	62.2	0.0	166.3	171.2
Dispositions	-	-	-	-	(362.0)	-	-	-	(1.7)	-	-	(1.7)	(1.7)
Revisions of Estimates	-	-	-	-	37.0	-114.7	-176.8	-301.3	-66.8	101.8	-174.2	(139.2)	(617.3)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	-	0.0%	123.8%	119.1%	268.2%	92.5%	63.5%	160.1%	97.9%	119.5%
Net Acquisitions	-	-	-	-	0.0%	0.0%	0.5%	0.0%	21.9%	13.8%	0.0%	13.7%	7.5%
Revisions of Estimates	-	-	-	-	0.0%	-23.8%	-19.6%	-168.2%	-14.1%	22.7%	-60.1%	-11.5%	-26.9%
Additions as % of Production:													
Gas	-	-	-	-	-172.4%	1828.2%	1293.1%	-128.2%	76.4%	384.9%	146.0%	204.7%	282.3%
Oil	-	-	-	-	0.0%	-2850.0%	2737.5%	1516.7%	1417.2%	184.2%	254.3%	529.2%	784.2%
Total	-	-	-	-	0.0%	1531.2%	1483.0%	196.5%	420.0%	329.1%	176.3%	293.2%	405.5%
Additions as % of Reserves:													
Gas	-	-	-	-	-4.1%	47.9%	38.9%	-5.9%	4.1%	20.5%	9.1%	34.7%	69.6%
Oil	-	-	-	-	12.1%	-38.8%	61.2%	44.5%	41.3%	6.8%	10.7%	57.5%	133.2%
Total	-	-	-	-	0.0%	37.9%	42.7%	8.1%	18.5%	15.6%	9.7%	43.2%	90.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	-	-	$158.1	$835.4	$941.0	$1,039.3	$1,000.9	$897.3	$326.9	$2,225.0	$4,205.3
Development	-	-	-	-	$678.3	$780.6	$1,536.2	$612.0	$326.9	$384.7	$1,000.9	$1,712.5	$3,860.6
Acquisitions	-	-	-	-	$697.7	$456.1	$841.5	$198.7	$745.7	$379.9	$745.7	$1,871.4	$2,911.6
Total Expenditures	-	-	-	-	$1,534.0	$2,072.1	$3,318.6	$1,850.0	$2,073.5	$1,661.9	$2,073.5	$5,808.9	$10,977.5
Expenditures as % of Total:													
Exploration	-	-	-	-	10.3%	40.3%	28.4%	56.2%	48.3%	54.0%	15.8%	38.3%	38.3%
Development	-	-	-	-	44.2%	37.7%	46.3%	33.1%	15.8%	23.1%	48.3%	29.5%	35.2%
Net Acquisitions	-	-	-	-	45.5%	22.0%	25.4%	10.7%	36.0%	22.9%	36.0%	32.2%	26.5%
Cashflow (US$million)	-	-	-	-	$307.4	$500.2	$980.3	$976.3	$1,274.2	$1,930.3	$2,107.4	$5,311.8	$7,268.5
Cashflow (US$/boe)	-	-	-	-	$21.20	$15.88	$16.11	$10.71	$11.26	$14.14	$12.81	$12.83	$12.84
Recycle Ratio	-	-	-	-	5.0x	3.7x	4.4x	1.0x	2.6x	3.8x	1.8x	2.7x	2.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	-	$2.31	$3.35	$2.76	$9.22	$3.56	$3.31	$4.58	$3.75	$3.79
Acquisition Costs	-	-	-	-	na	na	$174.10	na	$7.16	$6.11	na	$11.25	$17.01
All Sources (incl. revisions)	-	-	-	-	$4.24	$4.30	$3.68	$10.33	$4.35	$3.70	$7.15	$4.78	$4.78
Exploration & Development (excl. revisions)	-	-	-	-	$2.57	$2.71	$2.31	$3.44	$3.02	$4.50	$2.86	$3.31	$2.94
Acquisition Costs	-	-	-	-	na	na	$174.10	na	$7.16	$6.11	na	$11.25	$17.01
All Sources (excl. revisions)	-	-	-	-	$4.72	$3.47	$3.08	$3.85	$3.81	$4.78	$4.47	$4.29	$3.77

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Antero Resources (AR - NYSE)

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Operating Costs	-	-	-	-	8.11	8.84	9.51	8.49	8.83	9.37	9.74	9.37	9.24
Exploration Expense	-	-	-	-	1.01	0.71	0.46	0.04	0.06	0.06	0.03	0.05	0.09
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	-	-	-	-	4.24	4.30	3.68	10.33	4.35	3.70	7.15	4.78	4.78
Return on Capital	-	-	-	-	15.76	12.15	9.12	17.37	6.75	5.30	8.59	6.68	8.01
Income Taxes	-	-	-	-	8.48	7.51	5.54	10.41	4.11	3.20	3.68	3.62	4.54
Breakeven Oil Price	-	-	-	-	37.59	33.50	28.31	46.64	24.10	21.64	29.19	24.50	26.66
Quality Differential	-	-	-	-	(1.30)	1.80	6.74	8.15	7.45	8.20	11.07	8.91	8.32
Required Brent Price	-	-	-	-	36.30	35.29	35.05	54.78	31.55	29.84	40.25	33.41	34.99

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Operating Costs	-	-	-	-	8.11	8.84	9.51	8.49	8.83	9.37	9.74	9.37	9.24
Exploration Expense	-	-	-	-	1.01	0.71	0.46	0.04	0.06	0.06	0.03	0.05	0.09
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	-	-	-	-	4.24	4.30	3.68	10.33	4.35	3.70	7.15	4.78	4.78
Return on Capital	-	-	-	-	15.76	12.15	9.12	17.37	6.75	5.30	8.59	6.68	8.01
Income Taxes	-	-	-	-	8.48	7.51	5.54	10.41	4.11	3.20	3.68	3.62	4.54
Breakeven Oil Price	-	-	-	-	37.59	33.50	28.31	46.64	24.10	21.64	29.19	24.50	26.66
Quality Differential	-	-	-	-	(1.30)	1.80	6.74	8.15	7.45	8.20	11.07	8.91	8.32
Required Brent Price	-	-	-	-	36.30	35.29	35.05	54.78	31.55	29.84	40.25	33.41	34.99

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Antero Resources (AR - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	26.23	19.53	17.47	10.64	9.81	11.90	12.94	11.64	11.92
Exploration Expense	-	-	-	-	3.27	1.56	0.84	0.05	0.07	0.08	0.04	0.06	0.12
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	7.82	12.40	6.10	9.12	4.43	4.92	8.99	5.61	6.16
Return on Capital	-	-	-	-	38.22	37.26	15.67	15.82	7.02	7.29	11.39	8.07	10.74
Income Taxes	-	-	-	-	20.57	23.03	9.52	9.48	4.27	4.40	4.88	4.37	6.08
Breakeven Oil Price	**-**	**-**	**-**	**-**	**96.11**	**93.79**	**49.60**	**45.11**	**25.59**	**28.58**	**38.24**	**29.75**	**35.02**
Quality Differential	-	-	-	-	(4.20)	3.97	12.38	10.22	8.27	10.41	14.70	11.13	11.20
Required Brent Price	**-**	**-**	**-**	**-**	**91.91**	**97.76**	**61.99**	**55.33**	**33.86**	**39.00**	**52.94**	**40.88**	**46.21**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	26.23	19.53	17.47	10.64	9.81	11.90	12.94	11.64	11.92
Exploration Expense	-	-	-	-	3.27	1.56	0.84	0.05	0.07	0.08	0.04	0.06	0.12
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	23.87	25.65	16.56	4.66	5.07	5.31	5.47	6.07	7.41
Return on Capital	-	-	-	-	208.63	95.49	48.85	8.05	7.84	7.45	6.92	8.33	12.90
Income Taxes	-	-	-	-	112.27	59.02	29.67	4.82	4.77	4.50	2.97	4.52	7.30
Breakeven Oil Price	**-**	**-**	**-**	**-**	**374.27**	**201.25**	**113.40**	**28.22**	**27.56**	**29.24**	**28.34**	**30.62**	**39.65**
Quality Differential	-	-	-	-	(4.20)	3.97	12.38	10.22	8.27	10.41	14.70	11.13	11.20
Required Brent Price	**-**	**-**	**-**	**-**	**370.07**	**205.22**	**125.79**	**38.43**	**35.83**	**39.65**	**43.04**	**41.75**	**50.85**

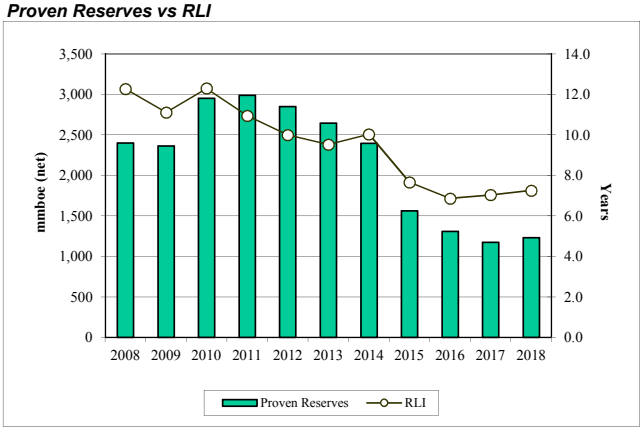
Source: BMO Capital Markets, Company Reports

Apache Corp. (APA - NYSE) US$, net

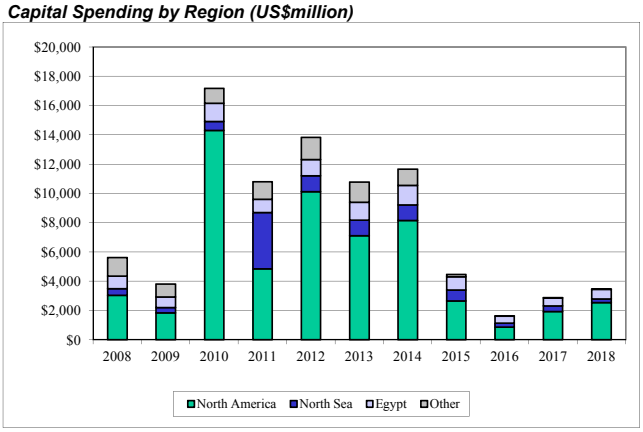
- Apache's results of operations were $9.85/boe in 2018 versus $4.08/boe in 2017.
- The company's one-year F&D costs came in higher at $15.05/boe versus $11.89/boe last year. On a realized oil:gas price ratio basis, F&D costs increased to $21.07/boe versus $15.53/boe while the costs for PD reserves dropped to $18.39/boe from $21.71/boe over the previous year.
- Apache's 2018 results imply a Brent breakeven oil price of $68.68/boe based on a realized ratio on total proved reserves, while the PD costs imply a Brent breakeven oil price of $64.16/boe.
- Apache reported ROCE of 2.7% in 2018 versus a normalized return of 9.7% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

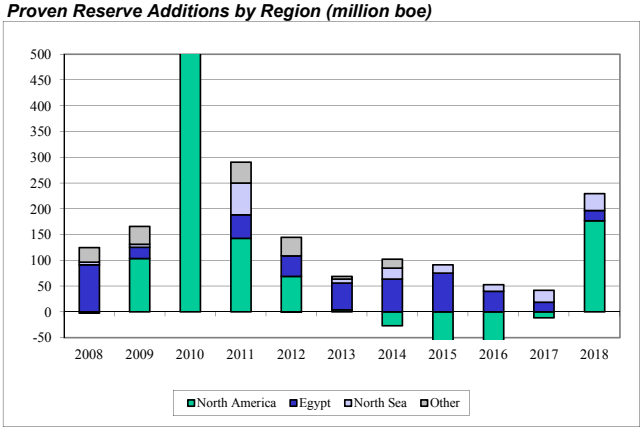
Proven Reserves vs RLI



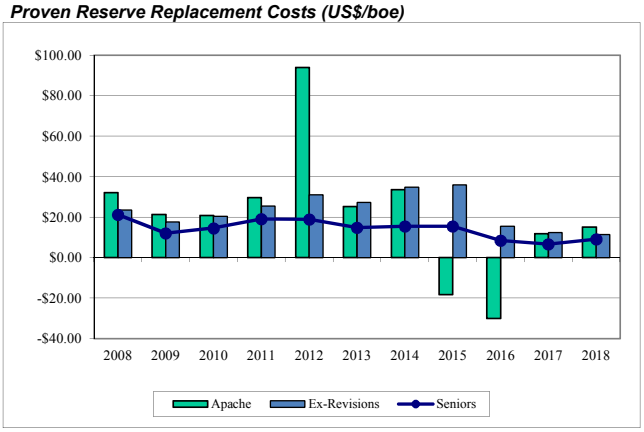
Capital Spending by Region (US$million)



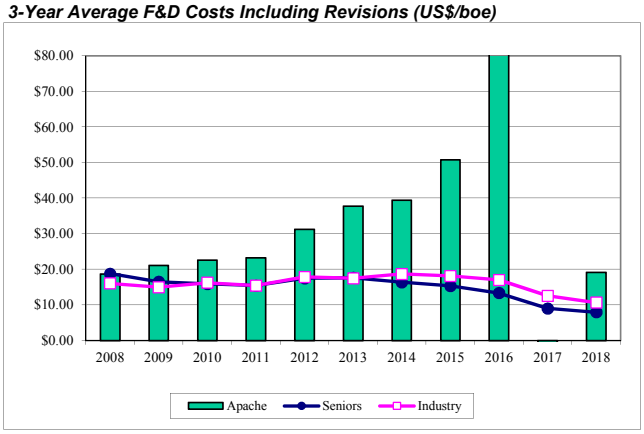
Proven Reserve Additions by Region (million boe)



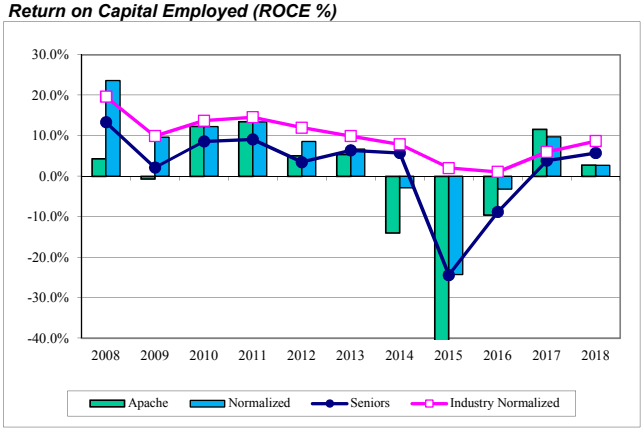
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

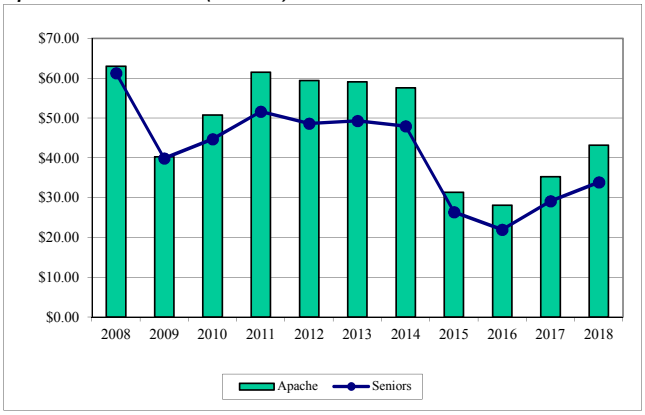
See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

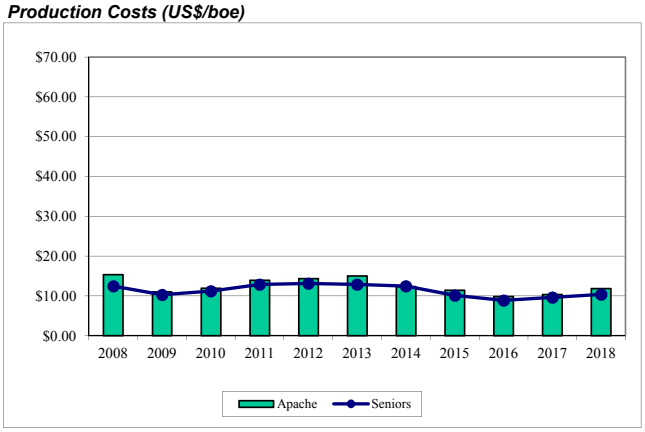
US$/boe, net

Worldwide

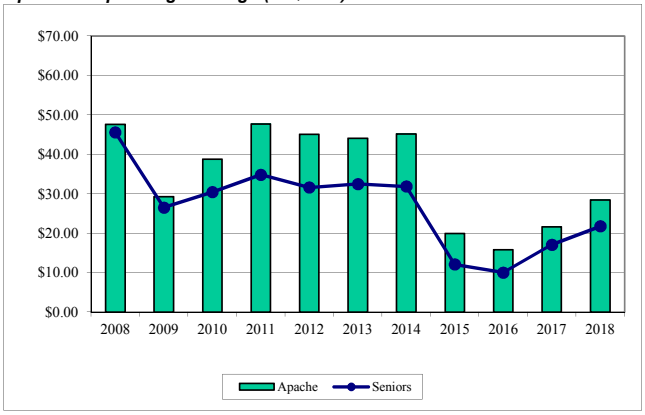
Upstream Net Revenue (US$/boe)



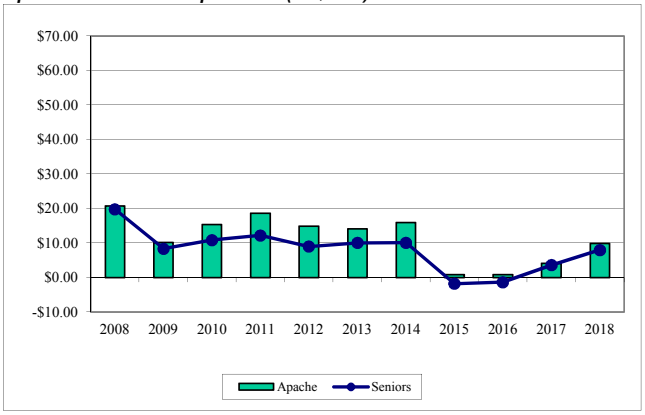
Production Costs (US$/boe)



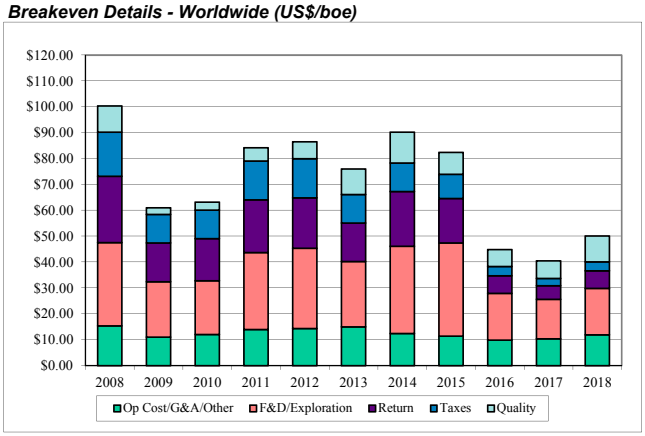
Upstream Operating Earnings (US$/boe)



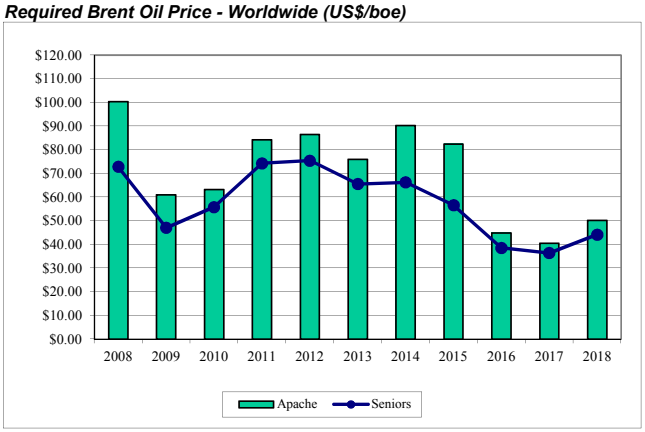
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



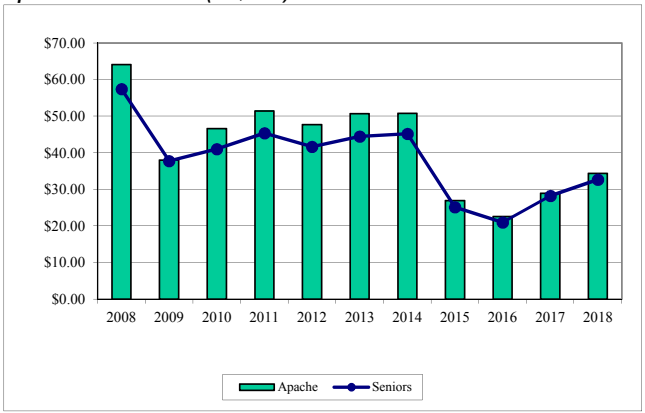
Source: BMO Capital Markets, Company Reports

Apache Corp. (APA - NYSE)

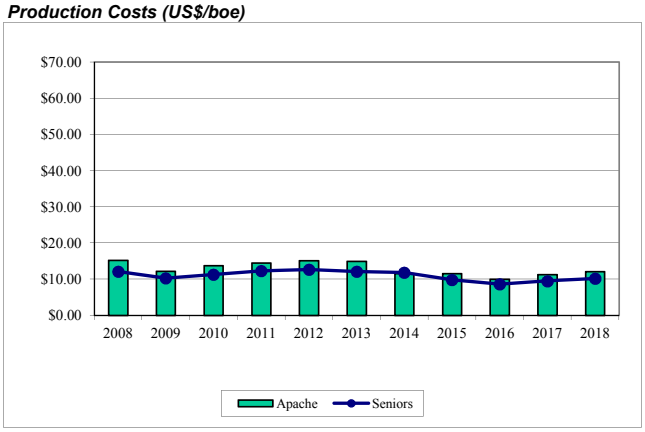
US$/boe, net

North America

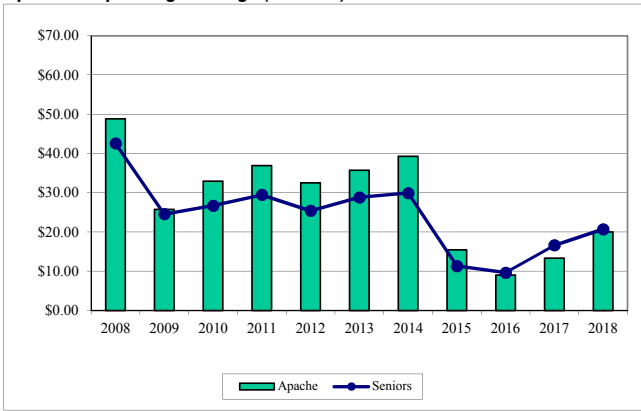
Upstream Net Revenue (US$/boe)



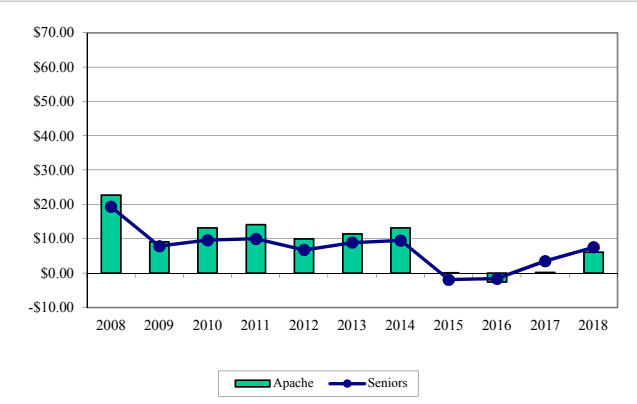
Production Costs (US$/boe)



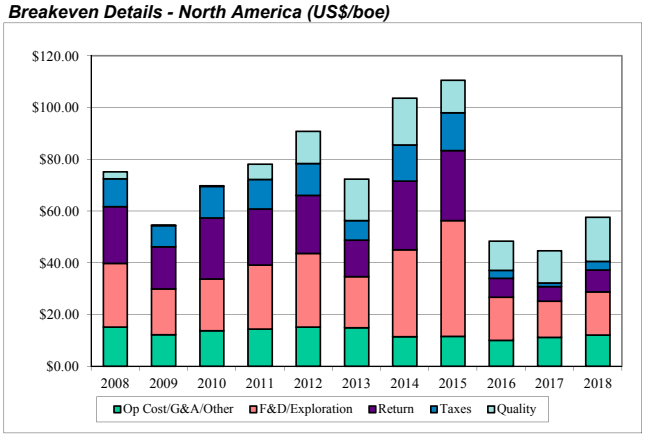
Upstream Operating Earnings (US$/boe)



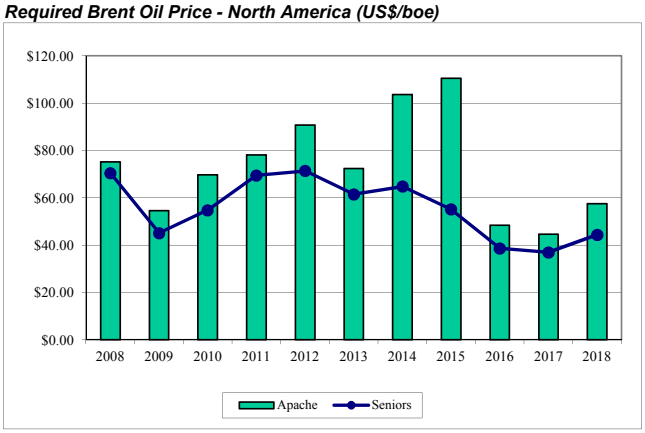
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

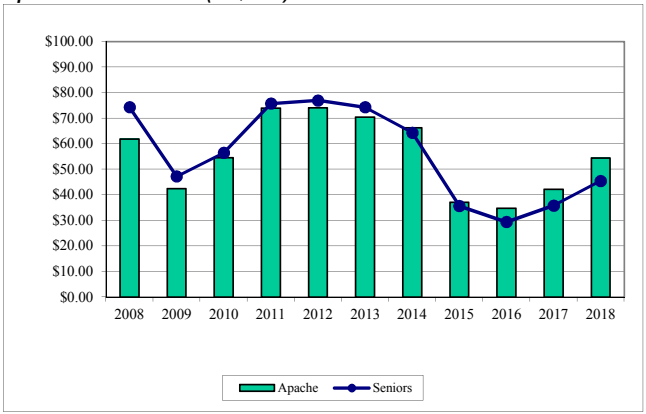
See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

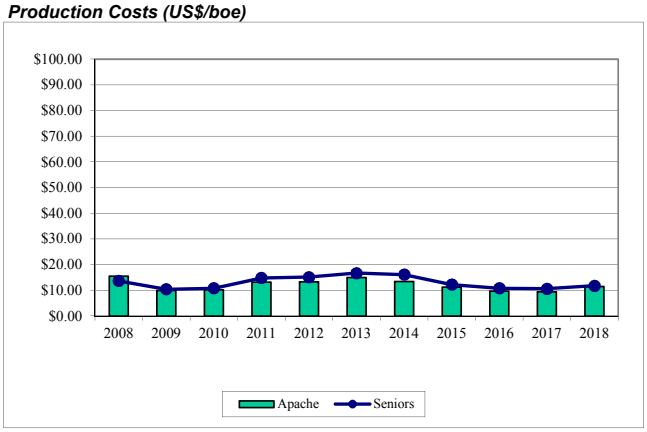
US$/boe, net

Total International

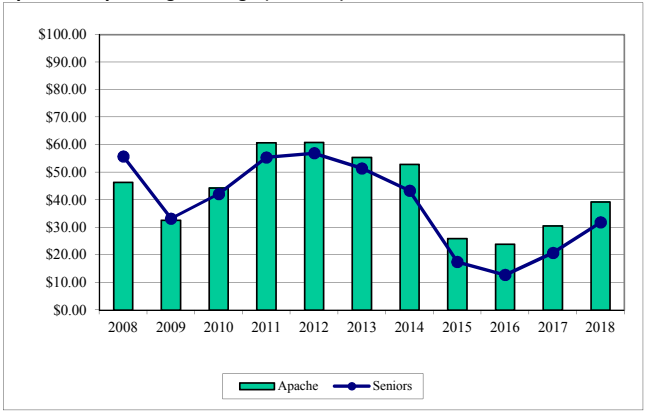
Upstream Net Revenue (US$/boe)



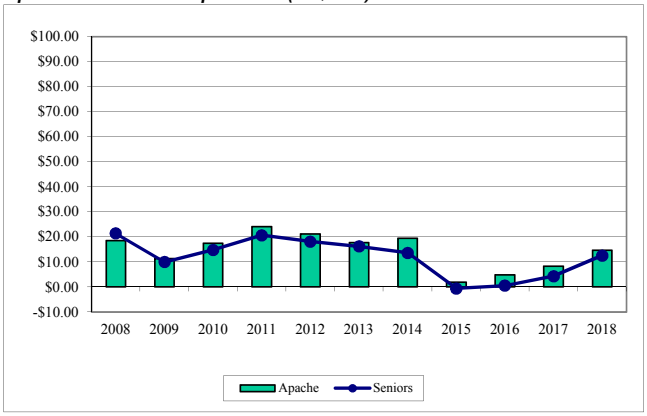
Production Costs (US$/boe)



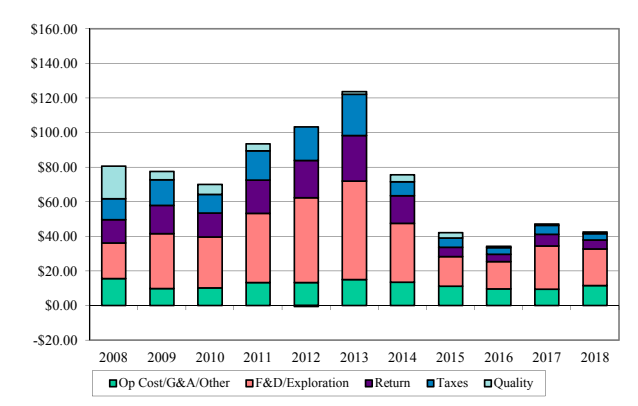
Upstream Operating Earnings (US$/boe)



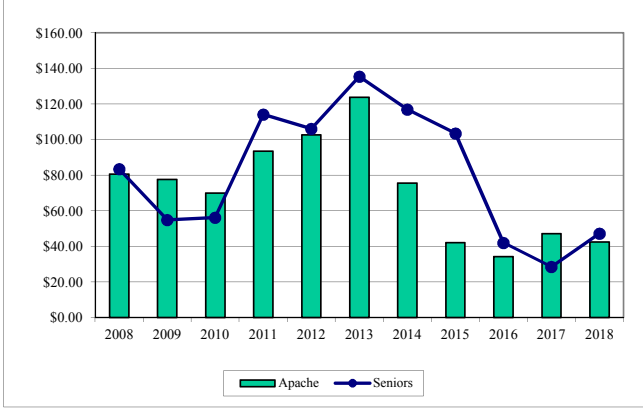
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



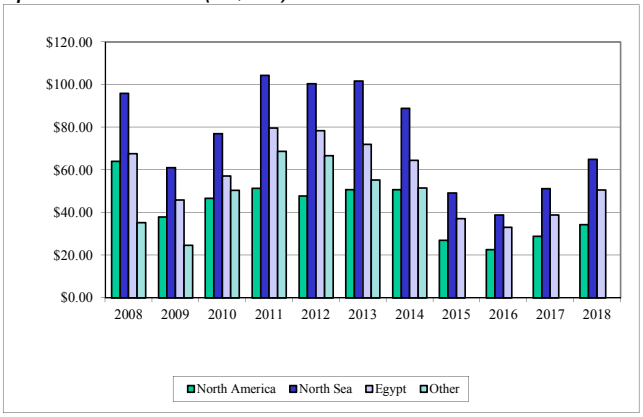
Source: BMO Capital Markets, Company Reports

Apache Corp. (APA - NYSE)

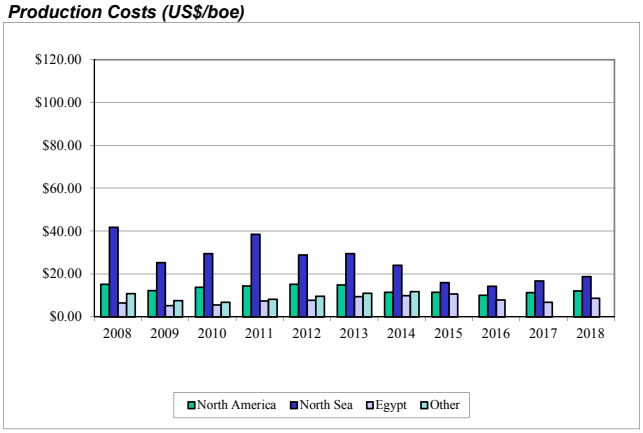
US$/boe, net

International Segments

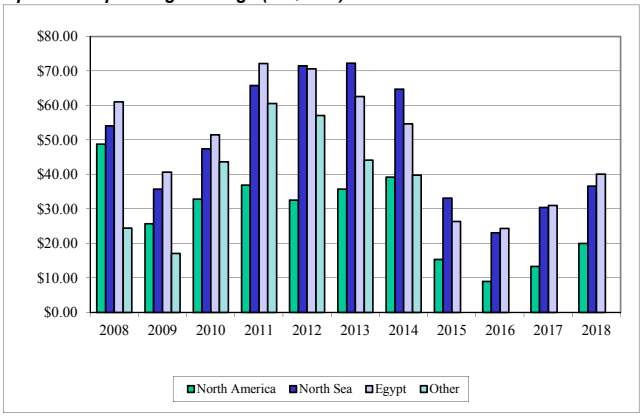
Upstream Net Revenue (US$/boe)



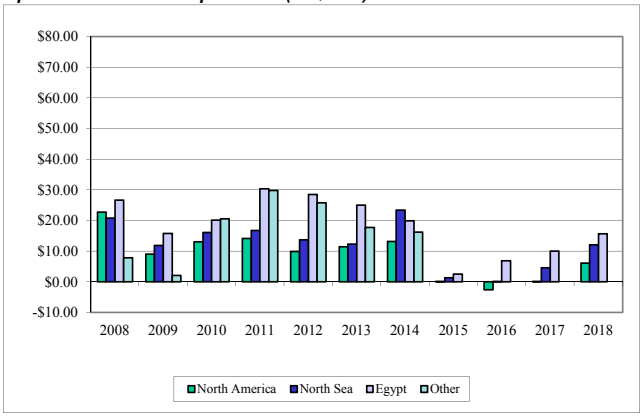
Production Costs (US$/boe)



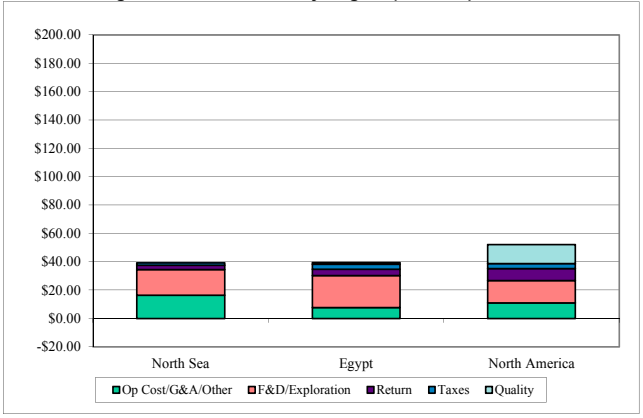
Upstream Operating Earnings (US$/boe)



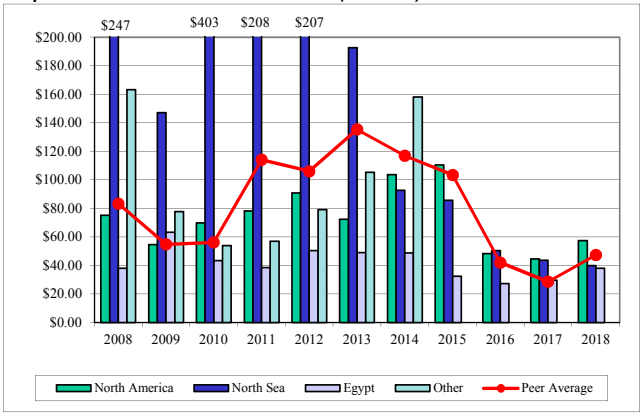
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	12,328	8,574	12,183	16,810	16,947	16,402	13,749	6,383	5,367	5,887	7,348
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	62	41	(91)	78	131	(348)	102	(17)	(13)	536	76
Total Revenue and Other Income	12,390	8,615	12,092	16,888	17,078	16,054	13,851	6,366	5,354	6,423	7,424
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	2,066	1,805	2,210	2,901	3,271	3,353	2,752	2,065	1,694	1,579	1,787
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	289	344	380	459	531	503	434	377	410	395	431
Depreciation, Depletion and Amortization	7,850	5,213	3,083	4,204	7,109	6,700	9,929	29,372	2,618	2,280	2,513
Interest, net	166	242	229	158	165	174	130	299	417	397	478
Other	985	579	873	919	893	865	3,848	2,334	1,741	724	1,127
Earnings Before Income Tax	932	326	5,206	8,093	4,877	4,216	(3,423)	(28,226)	(1,682)	918	958
Current Income Taxes	1,456	842	1,222	2,263	2,199	1,665	1,142	309	391	595	894
Future Income Taxes	(1,236)	(231)	952	1,246	677	263	495	(5,778)	(833)	(1,180)	(222)
Total Income Taxes	220	611	2,174	3,509	2,876	1,928	1,637	(5,469)	(442)	(585)	672
Minority Interest	-	-	-	-	-	(56)	(343)	(409)	(132)	(199)	(246)
Earnings From Continuing Operations	712	(284)	3,032	4,584	2,001	2,232	(5,403)	(23,166)	(1,372)	1,304	40
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	(771)	(33)	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	712	(284)	3,032	4,584	2,001	2,232	(5,403)	(23,937)	(1,405)	1,304	40
Preferred Stock Dividends	6	7	32	76	76	44	-			-	-
Net Earnings to Common Shareholders	706	(292)	3,000	4,508	1,925	2,188	(5,403)	(23,937)	(1,405)	1,304	40

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	712	(284)	3,032	4,584	2,001	2,232	(5,403)	(23,937)	(1,405)	1,304	40
Charges and Credits Not Impacting Cash	6,614	4,982	4,035	5,450	7,786	6,963	12,781	25,514	2,888	1,108	1,341
Other	51	287	301	200	458	559	1,301	1,577	794	336	2,151
Cash Flow From Operations	7,377	4,985	7,368	10,234	10,245	9,754	8,679	3,154	2,277	2,748	3,532
Change in Working Capital / Other	(312)	(761)	(642)	(281)	(1,741)	81	(218)	(170)	153	(320)	245
Net Cash From Operating Activities	7,065	4,223	6,726	9,953	8,504	9,835	8,461	2,984	2,430	2,428	3,777
Total Capital Expenditures	(5,973)	(3,631)	(4,922)	(7,078)	(9,531)	(11,220)	(10,880)	(4,811)	(1,768)	(2,582)	(3,771)
Acquisitions, net	308	(310)	(7,573)	(1,813)	(3,357)	4,190	1,600	1,146	(47)	1,241	(86)
Other	(78)	694	(908)	246	(536)	(86)	476	4,341	155	(75)	(87)
Net Cash From Investing Activities	(5,743)	(3,247)	(13,403)	(8,645)	(13,424)	(7,116)	(8,804)	676	(1,660)	(1,416)	(3,944)
Net Change in Debt	696	148	(1,055)	(925)	5,127	(2,585)	1,568	(2,638)	(181)	(70)	(378)
Net Change in Common Stock	36	34	2,328	52	-	(997)	(1,864)	-	-	-	-
Net Change in Preferred Stock	-	(98)	1,227	-	-	-	-	-	-	-	-
Cash Dividends Paid	(239)	(209)	(226)	(306)	(332)	(360)	(365)	(377)	(379)	(380)	(382)
Other	(760)	15	2,489	32	(10)	2,969	(133)	53	(300)	(271)	(27)
Net Cash From Financing Activities	(267)	(110)	4,763	(1,147)	4,785	(973)	(794)	(2,962)	(860)	(721)	(787)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	1,056	866	(1,914)	161	(135)	1,746	(1,137)	698	(90)	291	(954)
Cash and Equivalents, Beginning of Year	126	1,181	2,048	134	295	160	1,906	769	1,467	1,377	1,668
Cash and Equivalents, End of Year	1,181	2,048	134	295	160	1,906	769	1,467	1,377	1,668	714

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	4,451	4,586	3,480	4,803	4,962	6,366	6,415	3,752	3,241	3,725	2,687
Net Property, Plant and Equipment	23,959	22,901	38,151	45,448	53,280	52,421	48,076	14,119	18,867	17,759	18,421
Other Assets	777	699	1,794	1,800	2,495	2,850	1,461	971	411	438.00	474.00
Total Assets	29,186	28,186	43,425	52,051	60,737	61,637	55,952	18,842	22,519	21,922	21,582
Total Current Liabilities	2,615	2,393	3,524	4,963	5,536	4,700	3,664	1,841	1,843	2,564	2,201
Long-term Debt	4,809	4,950	8,095	6,785	11,355	9,672	11,245	8,777	8,544	7,934	8,054
Deferred Income Taxes	3,167	2,765	4,249	7,197	8,024	8,364	9,499	1,072	1,710	545	391
Other Liabilities and Deferred Credits	2,087	2,299	3,180	4,113	4,491	3,508	3,407	2,924	2,743	2,088	2,124
Total Liabilities	12,678	12,407	19,048	23,058	29,406	26,244	27,815	14,614	14,840	13,131	12,770
Minority Interests	-	-	-	-	-	1,997	2,200	1,662	1,441	1,375	1,682
Common Shares	214	215	240	241	245	255	256	257	258	259	260
Contributed Surplus (Paid-in Capital)	4,473	4,634	8,864	9,066	9,859	12,251	12,438	12,467	12,364	12,128	12,106
Preferred Stock	98	-	1,227	1,227	1,227	-	-	-	-	-	-
Retained Earnings	11,930	11,437	14,223	18,500	20,161	22,032	16,249	(7,153)	(3,385)	(2,088)	(2,048)
Other / Comprehensive Income (Loss)	(207)	(507)	(177)	(41)	(161)	(1,142)	(3,006)	(3,005)	(2,999)	(2,883)	(3,188)
Total Shareholders' Equity	16,509	15,779	24,377	28,993	31,331	33,396	25,937	2,566	6,238	7,416	7,130
Total Liabilities and Shareholders' Equity	29,186	28,186	43,425	52,051	60,737	61,637	55,952	18,842	22,519	21,922	21,582
Return on Capital Employed (ROCE)	**4.3%**	**-0.7%**	**12.3%**	**13.4%**	**5.0%**	**5.4%**	**-14.0%**	**-108.0%**	**-9.6%**	**11.6%**	**2.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	12,328	8,574	12,183	16,810	16,947	16,402	13,749	6,383	5,367	5,887	7,348	18,602	38,734
Production Costs	3,008	2,347	2,866	3,796	4,088	4,160	2,956	2,324	1,880	1,730	2,013	5,623	10,903
Exploration	0	0	0	0	0	0	0	0	473	549	503	1,525	1,525
DD&A	2,572	2,453	3,139	4,199	5,317	5,468	5,042	3,676	2,616	2,410	2,309	7,335	16,053
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	6,748	3,774	6,178	8,815	7,542	6,774	5,751	383	398	1,198	2,523	4,119	10,253
Income Taxes	2,690	1,598	2,497	3,730	3,286	2,862	1,950	201	242	517	848	1,607	3,758
Results Of Operations	4,058	2,175	3,681	5,085	4,256	3,912	3,801	182	156	681	1,675	2,512	6,495

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	6,734	3,927	5,374	7,720	7,548	8,126	6,836	3,135	2,340	2,502	3,279	8,121	18,092
Production Costs	1,601	1,262	1,583	2,172	2,397	2,393	1,548	1,341	1,035	973	1,155	3,163	6,052
Exploration	0	0	0	0	0	0	0	0	373	374	219	966	966
DD&A	1,571	1,247	1,498	2,303	2,717	2,907	2,595	1,752	1,310	1,134	1,238	3,682	8,029
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	3,562	1,418	2,293	3,245	2,434	2,826	2,693	42	-378	21	667	310	3,045
Income Taxes	1,174	477	781	1,120	861	994	925	30	-114	4	87	-22	933
Results Of Operations	2,388	941	1,512	2,125	1,573	1,832	1,768	12	-264	17	580	332	2,112

	2008	2009	2010	2011	2011	2011	2011	2011	2011	2011	2011	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	5,594	4,647	6,809	9,090	9,399	8,276	6,913	3,248	3,027	3,385	4,069	10,481	20,642
Production Costs	1,407	1,085	1,283	1,624	1,691	1,767	1,408	983	845	757	858	2,460	4,851
Exploration	0	0	0	0	0	0	0	0	100	175	284	559	559
DD&A	1,000	1,206	1,641	1,896	2,600	2,561	2,447	1,924	1,306	1,276	1,071	3,653	8,024
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	3,187	2,356	3,885	5,570	5,108	3,948	3,058	341	776	1,177	1,856	3,809	7,208
Income Taxes	1,517	1,122	1,716	2,610	2,425	1,868	1,025	171	356	513	761	1,630	2,825
Results Of Operations	1,670	1,235	2,169	2,960	2,683	2,080	2,033	171	420	664	1,095	2,179	4,383

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$63.03	$40.27	$50.75	$61.56	$59.46	$59.07	$57.57	$31.32	$28.11	$35.27	$43.21	$35.24	$39.91
Production Costs	$15.38	$11.03	$11.94	$13.90	$14.34	$14.98	$12.38	$11.40	$9.85	$10.36	$11.84	$10.65	$11.23
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2.48	$3.29	$2.96	$2.89	$1.57
DD&A	$13.15	$11.52	$13.08	$15.38	$18.66	$19.69	$21.11	$18.04	$13.70	$14.44	$13.58	$13.89	$16.54
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$34.50	$17.72	$25.74	$32.28	$26.46	$24.39	$24.08	$1.88	$2.08	$7.18	$14.84	$7.80	$10.56
Income Taxes	$13.76	$7.51	$10.40	$13.66	$11.53	$10.31	$8.16	$0.98	$1.27	$3.10	$4.99	$3.04	$3.87
Results Of Operations	$20.75	$10.22	$15.34	$18.62	$14.93	$14.09	$15.91	$0.89	$0.82	$4.08	$9.85	$4.76	$6.69

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$64.08	$37.96	$46.65	$51.43	$47.72	$50.71	$50.81	$26.96	$22.57	$28.89	$34.40	$28.44	$33.73
Production Costs	$15.23	$12.20	$13.74	$14.47	$15.15	$14.93	$11.51	$11.53	$9.98	$11.23	$12.12	$11.08	$11.28
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$3.60	$4.32	$2.30	$3.38	$1.80
DD&A	$14.95	$12.05	$13.00	$15.34	$17.18	$18.14	$19.29	$15.06	$12.64	$13.09	$12.99	$12.89	$14.97
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$33.89	$13.70	$19.90	$21.62	$15.39	$17.63	$20.01	$0.36	-$3.65	$0.24	$7.00	$1.09	$5.68
Income Taxes	$11.17	$4.61	$6.78	$7.46	$5.44	$6.20	$6.87	$0.26	-$1.10	$0.05	$0.91	-$0.08	$1.74
Results Of Operations	$22.73	$9.09	$13.12	$14.16	$9.95	$11.43	$13.14	$0.10	-$2.55	$0.19	$6.09	$1.16	$3.94

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$61.81	$42.45	$54.54	$73.93	$74.12	$70.47	$66.28	$37.11	$34.69	$42.15	$54.44	$43.25	$47.55
Production Costs	$15.54	$9.91	$10.28	$13.21	$13.33	$15.05	$13.50	$11.23	$9.68	$9.43	$11.48	$10.15	$11.17
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.15	$2.18	$3.80	$2.31	$1.29
DD&A	$11.05	$11.01	$13.15	$15.42	$20.50	$21.81	$23.46	$21.98	$14.97	$15.89	$14.33	$15.08	$18.48
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$35.21	$21.52	$31.12	$45.30	$40.28	$33.62	$29.32	$3.90	$8.89	$14.65	$24.83	$15.72	$16.60
Income Taxes	$16.76	$10.25	$13.75	$21.23	$19.12	$15.91	$9.83	$1.95	$4.08	$6.38	$10.18	$6.73	$6.51
Results Of Operations	$18.45	$11.28	$17.38	$24.07	$21.16	$17.71	$19.49	$1.95	$4.81	$8.27	$14.65	$8.99	$10.10

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North Sea													
Net Revenue	$95.88	$61.04	$76.94	$104.30	$100.37	$101.71	$88.85	$49.21	$38.81	$51.25	$64.96	$50.77	$58.81
Production Costs	$41.70	$25.27	$29.51	$38.51	$28.82	$29.42	$24.09	$15.99	$14.20	$16.69	$18.83	$16.41	$18.01
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.48	$4.09	$9.44	$4.75	$2.66
DD&A	$12.49	$12.04	$15.14	$21.25	$35.39	$39.78	$40.17	$30.60	$22.92	$24.63	$18.83	$22.21	$28.01
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$41.69	$23.74	$32.29	$44.54	$36.16	$32.51	$24.59	$2.61	$0.20	$5.85	$17.85	$7.40	$10.13
Income Taxes	$20.84	$11.87	$16.14	$27.78	$22.40	$20.14	$1.23	$1.31	$0.08	$1.23	$5.70	$2.17	$1.77
Results Of Operations	$20.84	$11.87	$16.14	$16.76	$13.75	$12.37	$23.36	$1.31	$0.12	$4.62	$12.15	$5.23	$8.36

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Egypt													
Net Revenue	$67.61	$45.84	$57.14	$79.62	$78.40	$72.04	$64.51	$37.13	$33.03	$38.91	$50.51	$40.42	$44.46
Production Costs	$6.47	$5.17	$5.58	$7.41	$7.73	$9.43	$9.83	$10.70	$7.87	$6.85	$8.73	$7.79	$8.73
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.77	$1.05	$1.62	$1.13	$0.70
DD&A	$9.81	$10.38	$12.78	$13.59	$15.91	$16.20	$18.48	$21.28	$11.77	$12.79	$12.65	$12.38	$15.22
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$51.32	$30.29	$38.79	$58.61	$54.76	$46.40	$36.20	$5.15	$12.62	$18.23	$27.52	$19.12	$19.81
Income Taxes	$24.63	$14.54	$18.62	$28.23	$26.29	$21.35	$16.30	$2.58	$5.68	$8.21	$11.86	$8.44	$8.87
Results Of Operations	$26.69	$15.75	$20.17	$30.38	$28.47	$25.05	$19.91	$2.58	$6.94	$10.02	$15.66	$10.67	$10.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other													
Net Revenue	$35.32	$24.66	$50.47	$68.78	$66.66	$55.21	$51.58	na	na	na	na	na	na
Production Costs	$10.87	$7.52	$6.78	$8.17	$9.57	$11.04	$11.75	na	na	na	na	na	na
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	na	na	na	na	na	na
DD&A	$13.21	$14.07	$14.25	$17.85	$20.19	$18.79	$18.82	na	na	na	na	na	na
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	na	na	na	na	na	na
Pre-tax Results Of Operations	$11.24	$3.06	$29.44	$42.76	$36.91	$25.38	$21.01	na	na	na	na	na	na
Income Taxes	$3.37	$0.92	$8.82	$12.89	$11.09	$7.60	$4.83	na	na	na	na	na	na
Results Of Operations	$7.87	$2.14	$20.62	$29.87	$25.82	$17.77	$16.19	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Apache Corp. (APA - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	1,622.0	1,758.8	1,888.7	2,262.4	2,299.7	2,097.1	1,589.2	1,225.0	1,105.6	957.6	965.5	1,009.6	1,168.6
Liquids Production (b/d)	265,532	290,192	342,858	371,085	397,523	411,260	389,471	354,216	338,866	297,729	304,970	313,855	337,050
Total Production (boe/d)	535,872	583,327	657,634	748,149	780,812	760,775	654,331	558,390	523,127	457,322	465,892	482,114	531,813
% Gas Production	50%	50%	48%	50%	49%	46%	40%	37%	35%	35%	35%	35%	37%
% Oil Production	50%	50%	52%	50%	51%	54%	60%	63%	65%	65%	65%	65%	63%
Proven Reserves:													
Gas Reserves (bcf)	7,917.0	7,796.0	9,867.2	9,722.3	8,464.2	7,338.4	6,238.8	3,430.4	2,859.1	2,326.6	2,513.8	2,566.5	3,473.7
Oil Reserves (mmbbls)	1,081.1	1,067.2	1,308.7	1,369.5	1,441.0	1,423.3	1,356.5	992.0	834.7	787.2	815.4	812.5	957.2
Total Proven Reserves (mmboe)	2,400.6	2,366.6	2,953.3	2,989.9	2,851.7	2,646.4	2,396.3	1,563.7	1,311.3	1,175.0	1,234.4	1,240.2	1,536.1
% Gas Reserves	55%	55%	56%	54%	49%	46%	43%	37%	36%	33%	34%	34%	38%
% Oil Reserves	45%	45%	44%	46%	51%	54%	57%	63%	64%	67%	66%	66%	62%
Proven Reserve Life Index	12.3	11.1	12.3	10.9	10.0	9.5	10.0	7.7	6.9	7.0	7.3	7.1	7.8
Proven Reserve Additions:													
Gas Additions (bcf)	636.4	521.0	2,760.5	680.9	-418.7	-360.4	-519.6	-2,361.2	-167.7	-183.1	539.6	188.8	(2,692.0)
Oil Additions (mmbbls)	44.4	92.0	366.6	196.2	216.6	132.5	75.3	-235.2	-33.6	61.2	139.5	167.1	7.2
Total Additions (mmboe)	150.4	178.9	826.7	309.7	146.8	72.4	-11.3	-628.7	-61.5	30.7	229.5	198.6	-441.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	231.6	194.9	245.1	342.1	372.4	389.3	313.1	117.4	103.2	230.0	302.5	635.7	1,066.2
Acquisitions	6.8	21.0	593.1	80.4	73.5	6.0	21.7	6.9	1.6	2.3	0.3	4.2	32.8
Dispositions	(24.4)	0.0	(0.1)	(53.7)	(0.3)	(355.4)	(357.5)	(384.8)	(7.0)	(212.0)	(0.1)	(219.0)	(961.4)
Revisions of Estimates	(63.6)	(37.0)	(11.4)	(59.1)	(298.7)	32.5	11.4	(368.2)	(159.3)	10.4	(73.3)	(222.3)	(579.0)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	154.0%	109.0%	29.6%	110.5%	253.6%	537.6%	-2767.2%	-18.7%	-167.7%	750.1%	131.8%	320.1%	-241.5%
Acquisitions	4.5%	11.7%	71.7%	26.0%	50.0%	8.3%	-191.9%	-1.1%	-2.6%	7.5%	0.1%	2.1%	-7.4%
Dispositions	-16.2%	0.0%	0.0%	-17.4%	-0.2%	-490.8%	3159.9%	61.2%	11.3%	-691.5%	0.0%	-110.3%	217.8%
Revisions of Estimates	-42.3%	-20.7%	-1.4%	-19.1%	-203.5%	44.9%	-100.8%	58.6%	258.9%	33.9%	-32.0%	-111.9%	131.2%
Additions as % of Production:													
Gas	107.5%	81.2%	400.4%	82.5%	-49.9%	-47.1%	-89.6%	-528.1%	-41.6%	-52.4%	153.1%	17.1%	-126.2%
Oil	45.8%	86.9%	293.0%	144.8%	149.3%	88.3%	53.0%	-181.9%	-27.2%	56.3%	125.3%	48.6%	1.2%
Total	76.9%	84.0%	344.4%	113.4%	51.5%	26.1%	-4.7%	-308.5%	-32.2%	18.4%	134.9%	37.6%	-45.5%
Additions as % of Reserves:													
Gas	8.0%	6.7%	28.0%	7.0%	-4.9%	-4.9%	-8.3%	-68.8%	-5.9%	-7.9%	21.5%	7.4%	-77.5%
Oil	4.1%	8.6%	28.0%	14.3%	15.0%	9.3%	5.6%	-23.7%	-4.0%	7.8%	17.1%	20.6%	0.8%
Total	6.3%	7.6%	28.0%	10.4%	5.1%	2.7%	-0.5%	-40.2%	-4.7%	2.6%	18.6%	16.0%	-28.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,512.4	$1,245.0	$1,564.0	$1,762.0	$2,689.0	$1,892.0	$986.0	$453.0	$470.0	$891.0	$940.0	$2,301.0	$3,740.0
Development	$3,949.4	$2,253.2	$3,727.0	$5,587.0	$7,536.0	$8,548.0	$9,174.0	$3,638.0	$950.0	$1,807.0	$2,381.0	$5,138.0	$17,950.0
Acquisitions	$149.5	$310.5	$11,897.0	$3,443.0	$3,606.0	$342.0	$1,492.0	$375.0	$215.0	$188.0	$133.0	$536.0	$2,403.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$5,611.4	$3,808.7	$17,188.0	$10,792.0	$13,831.0	$10,782.0	$11,652.0	$4,466.0	$1,635.0	$2,886.0	$3,454.0	$7,975.0	$24,093.0
Expenditures as % of Total:													
Exploration	27.0%	32.7%	9.1%	16.3%	19.4%	17.5%	8.5%	10.1%	28.7%	30.9%	27.2%	28.9%	15.5%
Development	70.4%	59.2%	21.7%	51.8%	54.5%	79.3%	78.7%	81.5%	58.1%	62.6%	68.9%	64.4%	74.5%
Acquisitions	2.7%	8.2%	69.2%	31.9%	26.1%	3.2%	12.8%	8.4%	13.1%	6.5%	3.9%	6.7%	10.0%
Cashflow (US$million)	$7,377.0	$4,984.7	$7,368.0	$10,234.0	$10,245.0	$9,754.0	$8,679.0	$3,154.0	$2,277.0	$2,748.0	$3,532.0	$8,557.0	$20,390.0
Cashflow (US$/boe)	$37.72	$23.41	$30.70	$37.48	$35.95	$35.13	$36.34	$15.48	$11.93	$16.46	$20.77	$16.21	$21.01
Recycle Ratio	1.2x	1.1x	1.5x	1.3x	0.4x	1.4x	1.1x	-0.8x	-0.4x	1.4x	1.4x	0.8x	0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$32.52	$22.16	$22.64	$25.97	$138.78	$24.75	$31.31	-$16.31	-$25.30	$11.22	$14.49	$17.99	$44.52
Acquisition Costs	$21.95	$14.79	$20.06	$42.81	$49.09	$57.23	$68.72	$54.66	$136.08	$82.28	$401.81	-$2.49	-$2.59
All Sources (incl. revisions)	$32.10	$21.30	$20.79	$29.70	$94.00	$25.20	$33.66	-$18.31	-$29.97	$11.89	$15.05	$19.10	-$54.58
Exploration & Development (excl. revisions)	$23.59	$17.95	$21.59	$21.48	$27.46	$26.81	$32.45	$34.85	$13.76	$11.73	$10.98	$11.70	$20.34
Acquisition Costs	$21.95	$14.79	$20.06	$42.81	$49.09	$57.23	$68.72	$54.66	$136.08	$82.28	$401.81	-$2.49	-$2.59
All Sources (excl. revisions)	$23.54	$17.64	$20.51	$25.54	$31.02	$27.27	$34.80	$35.94	$15.60	$12.43	$11.41	$18.95	$175.14
Geographically Segmented Costs													
North America	$139.84	$17.71	$19.98	$24.70	$145.93	$19.79	$33.49	-$7.63	-$8.07	$9.60	$14.35	$103.33	-$42.51
Egypt	$9.30	$33.48	$21.76	$19.90	$28.30	$23.60	$21.15	$12.00	$11.79	$29.42	$32.96	$21.31	$18.05
North Sea	$91.59	$61.55	$180.90	$62.11	-$7,607.02	$136.59	$49.45	$40.95	$22.15	$16.49	$7.57	$13.27	$25.59
Australia	$31.40	$20.05	$20.22	$18.82	$30.20	$251.66	$60.81	$10.60	na	na	na	na	-$4.04

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	15.38	11.03	11.94	13.90	14.34	14.98	12.38	11.40	9.85	10.36	11.84	10.65	11.23
Exploration Expense	-	-	-	-	-	-	-	-	2.48	3.29	2.96	2.89	1.57
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	32.10	21.30	20.79	29.70	31.02	25.20	33.66	35.94	15.60	11.89	15.05	14.18	22.43
Return on Capital	25.66	15.00	16.27	20.48	19.48	14.95	21.28	17.27	6.70	5.30	6.82	6.36	10.90
Income Taxes	17.01	11.02	11.03	15.02	15.04	10.93	10.92	9.30	3.61	2.85	3.46	4.07	6.31
Breakeven Oil Price	90.15	58.34	60.03	79.10	79.88	66.06	78.23	73.91	38.24	33.70	40.12	38.16	52.45
Quality Differential	10.16	2.59	3.08	5.13	6.60	9.91	11.93	8.42	6.52	6.73	9.97	7.74	8.71
Required Brent Price	100.31	60.93	63.11	84.23	86.49	75.97	90.16	82.33	44.76	40.43	50.09	45.89	61.16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	15.23	12.20	13.74	14.47	15.15	14.93	11.51	11.53	9.98	11.23	12.12	11.08	11.28
Exploration Expense	-	-	-	-	-	-	-	-	3.60	4.32	2.30	3.38	1.80
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	24.55	17.71	19.98	24.70	28.47	19.79	33.49	44.77	13.19	9.60	14.35	12.38	23.08
Return on Capital	21.89	16.23	23.65	21.67	22.49	14.05	26.64	27.14	7.19	5.63	8.42	7.06	14.23
Income Taxes	10.76	8.23	12.21	11.42	12.30	7.62	13.94	14.61	3.09	1.50	3.39	2.56	6.29
Breakeven Oil Price	72.43	54.37	69.58	72.25	78.41	56.38	85.57	98.05	37.06	32.28	40.57	36.46	56.68
Quality Differential	2.75	0.23	0.17	5.92	12.40	15.95	18.05	12.47	11.35	12.36	17.01	13.57	14.25
Required Brent Price	75.18	54.60	69.75	78.18	90.82	72.34	103.62	110.52	48.41	44.64	57.58	50.03	70.93

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	15.54	9.91	10.28	13.21	13.33	15.05	13.50	11.23	9.68	9.43	11.48	10.15	11.17
Exploration Expense	-	-	-	-	-	-	-	-	1.15	2.18	3.80	2.31	1.29
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	20.63	31.63	29.43	40.17	49.09	56.94	34.05	17.01	14.58	22.89	17.43	17.97	22.33
Return on Capital	13.45	16.37	13.71	19.14	21.46	26.40	15.97	5.42	4.33	6.74	5.18	5.34	7.35
Income Taxes	12.22	14.88	10.85	16.88	19.39	23.72	8.05	5.42	3.67	5.20	3.60	3.99	4.74
Breakeven Oil Price	61.85	72.79	64.27	89.40	103.27	122.11	71.58	39.09	33.40	46.44	41.49	39.75	46.88
Quality Differential	18.77	4.83	5.75	4.17	(0.64)	1.66	4.04	3.04	0.77	0.66	0.98	0.80	1.90
Required Brent Price	80.62	77.63	70.02	93.57	102.64	123.77	75.62	42.13	34.18	47.09	42.47	40.56	48.78

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North Sea													
Operating Costs	41.70	25.27	29.51	38.51	28.82	29.42	24.09	15.99	14.20	16.69	18.83	16.41	18.01
Exploration Expense	-	-	-	-	-	-	-	-	1.48	4.09	9.44	4.75	2.66
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	91.59	61.55	180.90	62.11	85.16	86.18	49.45	40.95	22.15	16.49	7.57	13.27	27.32
Return on Capital	55.95	29.48	95.01	38.24	35.53	30.49	17.36	15.11	6.95	6.16	3.20	4.91	9.83
Income Taxes	55.95	29.48	95.01	63.39	57.87	49.66	0.91	15.11	4.52	1.64	1.50	2.03	2.08
Breakeven Oil Price	245.20	145.77	400.43	202.24	207.38	195.75	91.81	87.17	49.31	45.07	40.55	41.37	59.91
Quality Differential	2.06	1.31	3.03	6.05	(0.79)	(2.95)	0.89	(1.38)	1.10	(1.29)	(0.67)	(0.29)	(0.27)
Required Brent Price	247.27	147.08	403.47	208.29	206.59	192.80	92.71	85.79	50.41	43.78	39.89	41.09	59.64

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Egypt													
Operating Costs	6.47	5.17	5.58	7.41	7.73	9.43	9.83	10.70	7.87	6.85	8.73	7.79	8.73
Exploration Expense	-	-	-	-	-	-	-	-	0.77	1.05	1.62	1.13	0.70
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	9.30	33.48	21.76	19.90	28.30	23.60	21.15	12.00	11.79	13.58	18.24	21.31	18.05
Return on Capital	4.93	11.81	7.19	6.20	8.54	7.47	7.26	4.34	3.44	3.71	4.54	5.72	5.41
Income Taxes	4.55	10.90	6.64	5.76	7.88	6.37	5.95	4.34	2.82	3.04	3.44	4.53	4.38
Breakeven Oil Price	25.25	61.35	41.17	39.27	52.44	46.87	44.18	31.37	26.70	28.22	36.58	40.48	37.26
Quality Differential	12.85	1.88	2.34	(0.73)	(1.89)	2.26	4.57	1.19	0.65	1.35	1.60	1.20	1.87
Required Brent Price	38.10	63.23	43.51	38.54	50.55	49.13	48.75	32.56	27.35	29.57	38.18	41.68	39.13

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other International													
Operating Costs	10.87	7.52	6.78	8.17	9.57	11.04	11.75	na	na	na	na	na	na
Exploration Expense	-	-	-	-	-	-	-	na	na	na	na	na	na
G&A/Other	-	-	-	-	-	-	-	na	na	na	na	na	na
F&D Costs	32.38	20.36	20.22	20.65	32.90	39.51	60.86	na	na	na	na	na	na
Return on Capital	62.32	28.39	13.80	17.34	30.78	40.66	65.21	na	na	na	na	na	na
Income Taxes	26.71	12.17	5.90	7.48	13.22	17.39	19.45	na	na	na	na	na	na
Breakeven Oil Price	132.27	68.43	46.71	53.64	86.47	108.60	157.27	na	na	na	na	na	na
Quality Differential	30.94	9.45	7.18	3.41	(7.31)	(3.32)	0.97	na	na	na	na	na	na
Required Brent Price	163.21	77.88	53.88	57.05	79.16	105.28	158.24	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Apache Corp. (APA - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.05	16.04	17.87	22.50	23.48	22.93	17.22	14.56	12.47	13.33	15.82	13.79	14.75
Exploration Expense	-	-	-	-	-	-	-	-	3.14	4.23	3.95	3.74	2.06
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	50.27	30.51	33.85	45.18	68.36	34.65	47.41	48.39	22.19	15.53	21.07	19.60	30.92
Return on Capital	37.80	20.45	25.01	31.57	42.67	20.64	28.84	23.24	9.48	6.93	9.64	8.93	14.87
Income Taxes	25.06	15.03	16.97	23.16	32.94	15.10	14.79	12.51	5.11	3.73	4.88	5.71	8.61
Breakeven Oil Price	**134.18**	**82.03**	**93.69**	**122.40**	**167.45**	**93.32**	**108.26**	**98.70**	**52.39**	**43.74**	**55.36**	**51.76**	**71.22**
Quality Differential	13.91	3.77	4.60	8.31	10.81	15.16	16.60	10.76	8.25	8.65	13.32	10.07	10.68
Required Brent Price	**148.09**	**85.80**	**98.30**	**130.71**	**178.26**	**108.48**	**124.86**	**109.46**	**60.64**	**52.39**	**68.68**	**61.84**	**81.90**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.05	16.04	17.87	22.50	23.48	22.93	17.22	14.56	12.47	13.33	15.82	13.79	14.75
Exploration Expense	-	-	-	-	-	-	-	-	3.14	4.23	3.95	3.74	2.06
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	33.98	36.57	45.26	53.48	63.03	38.43	54.23	53.06	38.60	21.71	18.39	23.32	37.20
Return on Capital	25.51	24.50	32.35	35.14	39.35	22.88	33.19	25.47	16.33	9.72	8.41	10.34	18.01
Income Taxes	16.91	18.00	21.94	25.78	30.38	16.74	17.02	13.71	8.79	5.23	4.26	6.62	10.42
Breakeven Oil Price	**97.45**	**95.11**	**117.43**	**136.89**	**156.25**	**100.97**	**121.66**	**106.81**	**79.34**	**54.21**	**50.84**	**57.80**	**82.45**
Quality Differential	13.91	3.77	4.60	8.31	10.81	15.16	16.60	10.76	8.25	8.65	13.32	10.07	10.68
Required Brent Price	**111.37**	**98.88**	**122.03**	**145.20**	**167.05**	**116.14**	**138.26**	**117.57**	**87.59**	**62.86**	**64.16**	**67.87**	**93.13**

Source: BMO Capital Markets, Company Reports

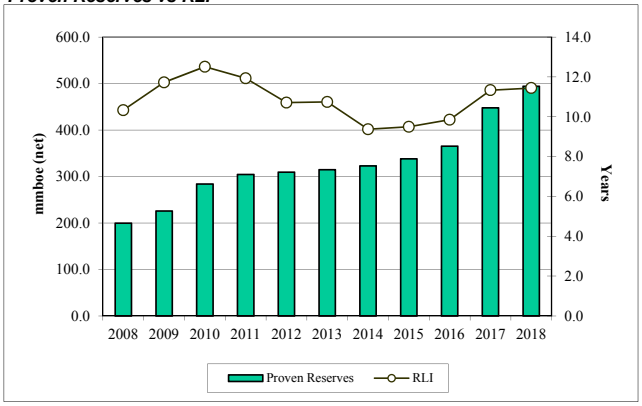
ARC Resources Ltd. (ARX - TSX)

US$, net

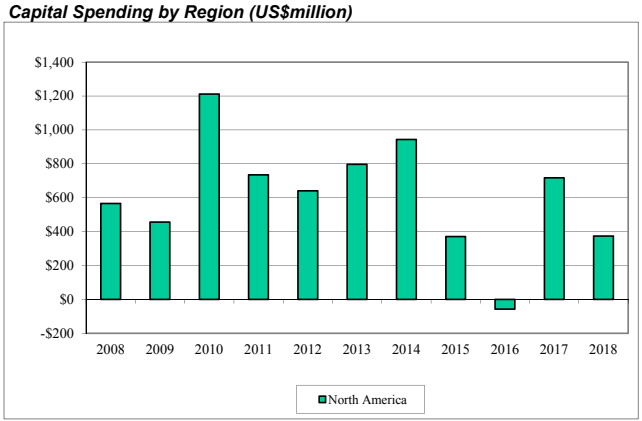
- ARC reported results of operations of $5.45/boe in 2018, higher than the $4.49/boe in 2017.
- One-year F&D costs decreased to $4.48/boe versus $6.48/boe last year. F&D costs on a realized ratio basis dropped to $13.65/boe from $16.21/boe in 2017, while the costs for PD reserves increase to $26.21/boe from $19.30/boe the previous year.
- ARC's 2018 operations imply a required Brent breakeven oil price of $66.63/boe on a realized ratio basis on total proved reserves, while its PD cost assessment implied a Brent breakeven oil price of $91.98/boe.
- ARC reported a return on capital of 5.8% in 2018 versus 10.7% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

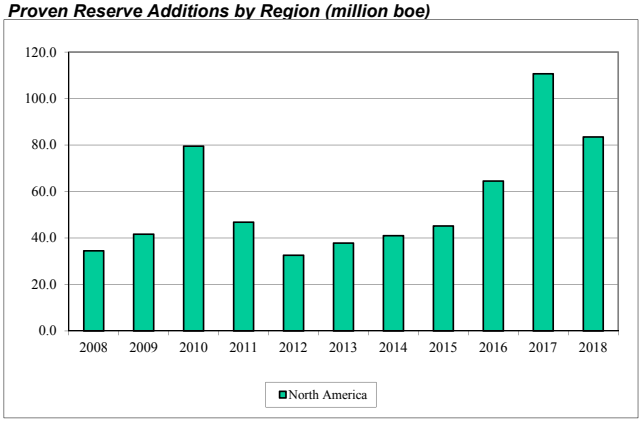
Proven Reserves vs RLI



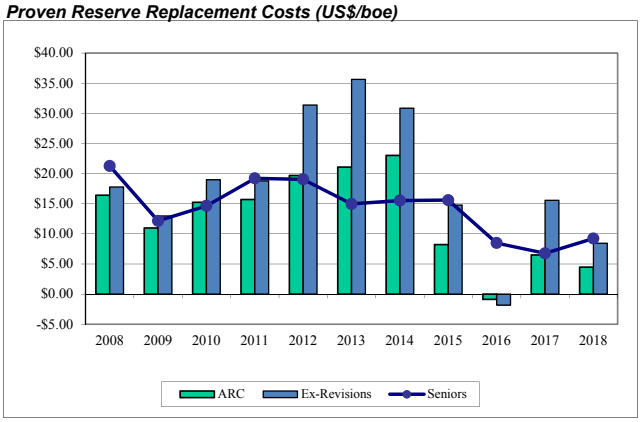
Capital Spending by Region (US$million)



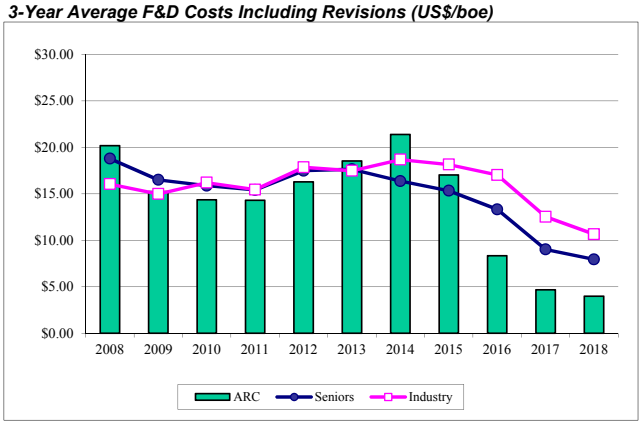
Proven Reserve Additions by Region (million boe)



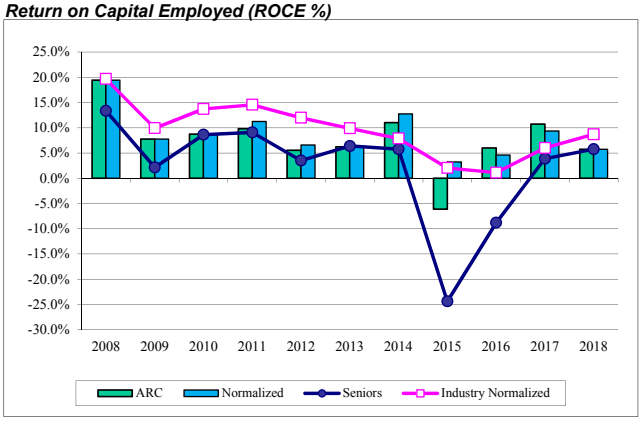
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



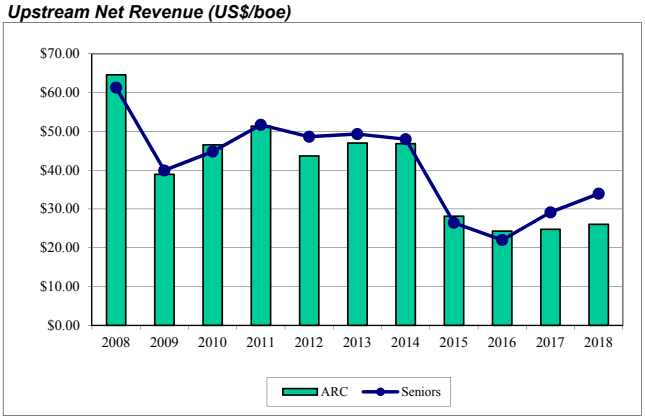
Source: BMO Capital Markets, Company Reports

ARC Resources Ltd. (ARX - TSX)

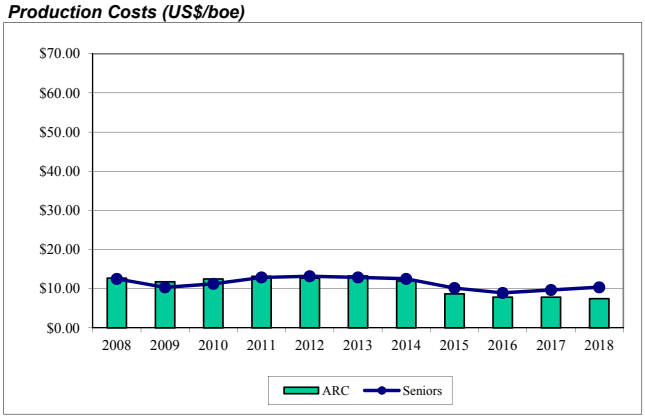
US$/boe, net

North America

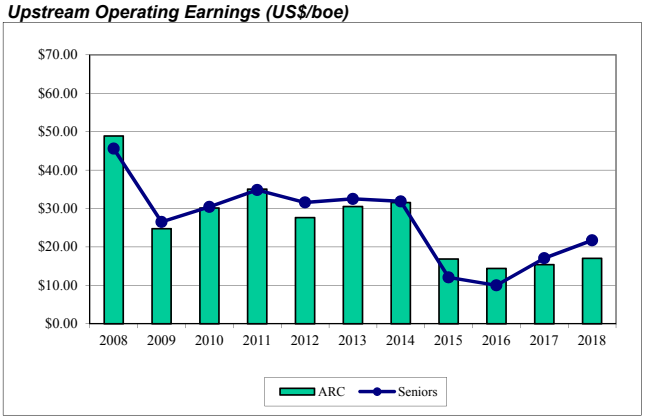
Upstream Net Revenue (US$/boe)



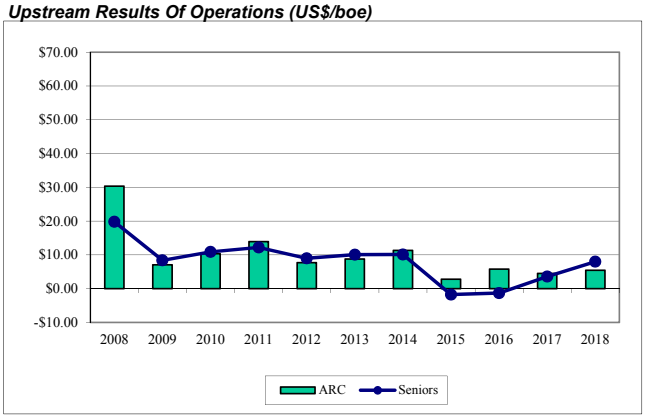
Production Costs (US$/boe)



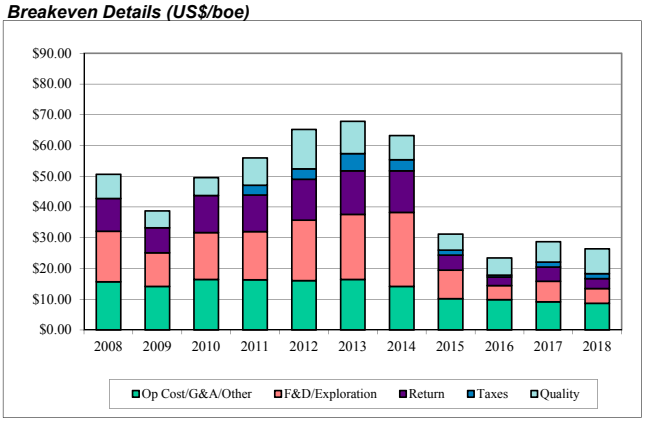
Upstream Operating Earnings (US$/boe)



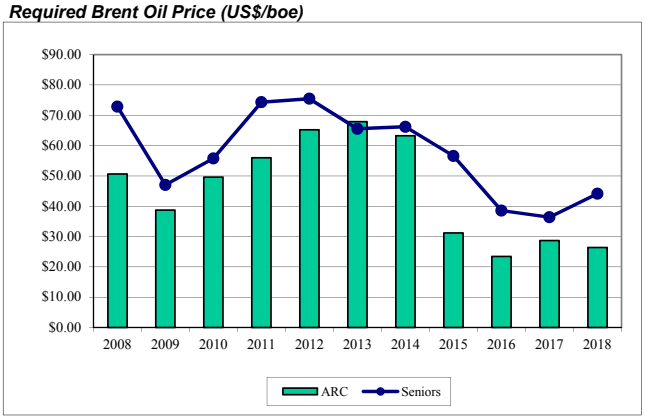
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

ARC Resources Ltd. (ARX - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,319	731	991	1,233	1,194	1,361	1,639	854	736	866	1,072
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(7)	10	91	60	81	45	160	265	(28)	218	73
Total Revenue and Other Income	1,312	742	1,082	1,293	1,275	1,406	1,799	1,119	709	1,084	1,146
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	111
Production and Transportation Expenses	246	226	283	335	366	387	413	309	290	309	322
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	1	36	37	1	7	12
General and Administrative	58	46	89	81	97	94	76	54	75	53	54
Depreciation, Depletion and Amortization	358	340	448	442	518	536	594	467	274	368	382
Interest, net	31	23	41	39	45	41	43	40	38	35	33
Other	115	(63)	(26)	(80)	(6)	8	68	483	(163)	(104)	(25)
Earnings Before Income Tax	505	170	247	461	242	325	555	(281)	183	405	248
Current Income Taxes	-	0	(12)	-	30	16	64	(7)	19	13	37
Future Income Taxes (Recovery)	(4)	(29)	5	98	19	76	54	(5)	12	92	46
Total Income Taxes	(4)	(29)	(6)	98	49	91	117	(12)	31	105	83
Minority Interest	(7)	(2)	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	503	196	253	363	192	234	438	(268)	152	300	165
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	503	196	253	363	192	234	438	(268)	152	300	165
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	503	196	253	363	192	234	438	(268)	152	300	165

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	503	196	253	363	192	234	438	(268)	152	300	165
Charges and Credits Not Impacting Cash	354	311	442	541	538	612	647	461	286	460	428
Other	15	(59)	(42)	(49)	(10)	(8)	(67)	413	35	(196)	39
Cash Flow From Operations	872	449	653	854	720	837	1,018	606	473	564	632
Change in Working Capital / Other	19	(10)	1	59	(16)	(58)	26	(66)	3	(46)	34
Net Cash From Operating Activities	891	438	654	913	704	779	1,044	540	476	519	666
Upstream Spending	(517)	(317)	(572)	(736)	(608)	(849)	(913)	(429)	(344)	(715)	(525)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	-
Acquisitions, net	(48)	(158)	(9)	(58)	(33)	52	(31)	58	402	(2)	120
Other	41	(11)	30	172	4	2	22	(72)	(355)	396	(8)
Net Cash From Investing Activities	(524)	(486)	(550)	(623)	(637)	(795)	(922)	(442)	(297)	(321)	(413)
Net Change in Debt	93	12	(109)	(52)	(324)	103	91	(108)	(42)	(38)	(59)
Net Issuance of Units/Shares	5	212	235	2	332	0	-	315	1	0	-
Net Change in Preferred Stock/Convertibles	-	(213)	-	-	358	(40)	-	-	-	-	-
Cash Dividends Paid	(433)	-	(230)	(241)	(239)	(236)	(207)	(166)	(97)	(161)	(164)
Other	(0)	1	1	-	-	-	-	(13)	(0)	-	-
Net Cash From Financing Activities	(335)	12	(104)	(292)	127	(173)	(116)	28	(138)	(199)	(223)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	31	(35)	0	(2)	194	(189)	6	125	41	(2)	30
Cash and Equivalents, Beginning of Year	7	35	0	2	1	189	-	6	126	171	170
Cash and Equivalents, End of Year	38	0	0	1	195	0	6	131	168	170	200

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

ARC Resources Ltd. (ARX - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	184	130	236	214	405	194	297	399	869	631	432
Net Property, Plant and Equipment	3,185	3,148	4,305	4,889	4,707	4,787	4,788	3,626	3,440	3,834	4,066
Other Assets	184	171	263	283	518	590	644	621	217	334	145
Total Assets	3,553	3,448	4,803	5,386	5,631	5,571	5,729	4,646	4,526	4,799	4,643
Total Current Liabilities	236	179	266	400	374	375	399	196	337	383	220
Long-term Debt	851	745	780	730	748	834	929	827	736	646	640
Deferred Income Taxes	296	290	421	512	523	583	597	508	517	620	666
Other Liabilities and Deferred Credits	150	143	235	546	587	480	588	462	302	321	281
Total Liabilities	1,532	1,357	1,701	2,187	2,232	2,273	2,512	1,992	1,893	1,970	1,806
Minority Interests	40	32	-	-	-	-	-	-	-	-	-
Shareholders' Capital	2,453	2,570	3,102	3,256	3,672	3,691	3,579	3,553	3,517	3,592	3,596
Contributed Surplus (Paid-in Capital)	-	-	-	1	2	4	8	10	13	17	21
Preferred Stock/Convertibles	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	(474)	(510)	-	(58)	(275)	(397)	(369)	(909)	(898)	(780)	(779)
Accumulated Cash Distributions / Other	2	-	(0)	-	-	-	-	0	0	(0)	-
Total Shareholders' Equity	1,981	2,060	3,102	3,199	3,399	3,298	3,217	2,654	2,633	2,829	2,837
Total Liabilities and Shareholders' Equity	3,553	3,448	4,803	5,386	5,631	5,571	5,729	4,646	4,526	4,799	4,643
Return on Capital Employed (ROCE)	**19.4%**	**7.8%**	**8.7%**	**9.8%**	**5.6%**	**6.3%**	**11.0%**	**-6.1%**	**6.0%**	**10.7%**	**5.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	1,312	742	1,082	1,293	1,275	1,406	1,799	1,119	709	1,084	1,146	2,938	5,855
Production Costs	246	226	283	335	366	387	413	309	290	309	322	922	1,644
Exploration	0	0	0	0	0	1	36	37	1	7	12	21	93
DD&A	358	340	448	442	518	536	594	467	274	368	382	1,024	2,085
G&A/Other	58	46	89	81	97	94	76	54	75	53	54	182	312
Pre-tax Results Of Operations	651	129	262	434	293	387	680	252	67	346	376	789	1,722
Income Taxes	0	0	0	92	60	109	144	63	11	90	126	227	434
Results Of Operations	651	129	262	342	234	278	537	189	56	256	250	562	1,288

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	1,312	742	1,082	1,293	1,275	1,406	1,799	1,119	709	1,084	1,146	2,938	5,855
Production Costs	246	226	283	335	366	387	413	309	290	309	322	922	1,644
Exploration	0	0	0	0	0	1	36	37	1	7	12	21	93
DD&A	358	340	448	442	518	536	594	467	274	368	382	1,024	2,085
G&A/Other	58	46	89	81	97	94	76	54	75	53	54	182	312
Pre-tax Results Of Operations	651	129	262	434	293	387	680	252	67	346	376	789	1,722
Income Taxes	0	0	0	92	60	109	144	63	11	90	126	227	434
Results Of Operations	651	129	262	342	234	278	537	189	56	256	250	562	1,288

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

ARC Resources Ltd. (ARX - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$64.56	$38.89	$46.52	$51.35	$43.66	$46.99	$46.79	$28.09	$24.27	$24.75	$26.02	$25.06	$29.58
Production Costs	$12.71	$11.75	$12.49	$13.14	$12.68	$13.23	$11.98	$8.69	$7.83	$7.82	$7.46	$7.70	$8.66
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.04	$1.04	$1.03	$0.03	$0.19	$0.28	$0.17	$0.49
DD&A	$18.52	$17.68	$19.75	$17.34	$17.95	$18.30	$17.23	$13.11	$7.40	$9.32	$8.84	$8.56	$10.98
G&A/Other	$2.99	$2.39	$3.92	$3.18	$3.36	$3.22	$2.22	$1.51	$2.02	$1.35	$1.24	$1.52	$1.64
Pre-tax Results Of Operations	$30.34	$7.06	$10.36	$17.69	$9.67	$12.20	$14.34	$3.74	$6.98	$6.07	$8.20	$7.12	$7.80
Income Taxes	$0.00	$0.00	$0.00	$3.76	$1.97	$3.43	$3.03	$0.94	$1.19	$1.57	$2.75	$1.82	$1.91
Results Of Operations	$30.34	$7.06	$10.36	$13.92	$7.70	$8.76	$11.31	$2.81	$5.79	$4.49	$5.45	$5.30	$5.88

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$64.56	$38.89	$46.52	$51.35	$43.66	$46.99	$46.79	$28.09	$24.27	$24.75	$26.02	$25.06	$29.58
Production Costs	$12.71	$11.75	$12.49	$13.14	$12.68	$13.23	$11.98	$8.69	$7.83	$7.82	$7.46	$7.70	$8.66
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.04	$1.04	$1.03	$0.03	$0.19	$0.28	$0.17	$0.49
DD&A	$18.52	$17.68	$19.75	$17.34	$17.95	$18.30	$17.23	$13.11	$7.40	$9.32	$8.84	$8.56	$10.98
G&A/Other	$2.99	$2.39	$3.92	$3.18	$3.36	$3.22	$2.22	$1.51	$2.02	$1.35	$1.24	$1.52	$1.64
Pre-tax Results Of Operations	$30.34	$7.06	$10.36	$17.69	$9.67	$12.20	$14.34	$3.74	$6.98	$6.07	$8.20	$7.12	$7.80
Income Taxes	$0.00	$0.00	$0.00	$3.76	$1.97	$3.43	$3.03	$0.94	$1.19	$1.57	$2.75	$1.82	$1.91
Results Of Operations	$30.34	$7.06	$10.36	$13.92	$7.70	$8.76	$11.31	$2.81	$5.79	$4.49	$5.45	$5.30	$5.88

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

ARC Resources Ltd. (ARX - TSX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	156.9	161.0	212.8	259.5	288.2	288.4	337.5	376.6	401.4	465.4	516.1	461.0	419.4
Liquids Production (b/d)	26,802	25,902	26,661	26,624	31,081	32,170	38,180	34,719	34,669	30,643	32,268	32,527	34,096
Total Production (boe/d)	52,960	52,731	62,127	69,880	79,121	80,229	94,425	97,478	101,566	108,214	118,289	109,356	103,994
% Gas Production	49%	51%	57%	62%	61%	60%	60%	64%	66%	72%	73%	70%	67%
% Oil Production	51%	49%	43%	38%	39%	40%	40%	36%	34%	28%	27%	30%	33%
Proven Reserves:													
Closing Gas Reserves (bcf)	604.0	769.3	1,076.4	1,197.1	1,199.2	1,205.4	1,278.4	1,351.2	1,516.7	1,968.1	2,257.7	1,914.2	1,674.4
Closing Oil Reserves (mmbbls)	99.0	97.5	104.3	104.8	109.5	113.8	109.8	112.8	112.5	119.6	117.7	116.6	114.5
Closing Total Proven Reserves (mmboe)	199.7	225.7	283.7	304.3	309.4	314.7	322.9	338.0	365.3	447.7	494.0	435.6	393.6
% Gas Reserves	50%	57%	63%	66%	65%	64%	66%	67%	69%	73%	76%	73%	71%
% Oil Reserves	50%	43%	37%	34%	35%	36%	34%	33%	31%	27%	24%	27%	29%
Proven Reserve Life Index	10.3	11.7	12.5	11.9	10.7	10.8	9.4	9.5	9.9	11.3	11.4	10.9	10.3
Proven Reserve Additions:													
Gas Additions (bcf)	177.9	203.1	382.2	224.4	106.3	131.8	190.5	188.1	316.8	547.7	434.3	1,298.9	1,677.5
Oil Additions (mmbbls)	4.8	7.8	15.8	9.4	14.8	15.8	9.3	13.8	11.7	19.4	11.1	42.2	65.3
Total Additions (mmboe)	34.5	41.6	79.5	46.8	32.5	37.8	41.0	45.2	64.5	110.7	83.5	258.7	344.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions	31.8	28.5	37.0	48.9	20.7	26.8	35.8	37.4	42.4	46.3	62.2	150.9	224.1
Net Acquisitions	0.0	6.7	26.9	-9.8	-0.3	-4.4	-5.2	-12.3	-11.3	-0.2	-17.8	(29.3)	(46.8)
Revisions of Estimates	2.6	6.4	15.7	7.7	12.1	15.4	10.4	20.0	33.4	64.6	39.1	137.1	167.6
Components as % of Total Additions:													
Extensions, Discoveries and Additions	92.3%	68.4%	46.5%	104.5%	63.7%	70.9%	87.3%	82.8%	65.8%	41.8%	74.5%	58.3%	65.0%
Net Acquisitions	0.1%	16.2%	33.8%	-21.0%	-1.0%	-11.8%	-12.7%	-27.1%	-17.6%	-0.2%	-21.3%	-11.3%	-13.6%
Revisions of Estimates	7.6%	15.4%	19.7%	16.5%	37.3%	40.9%	25.4%	44.3%	51.8%	58.4%	46.8%	53.0%	48.6%
Additions as % of Production:													
Gas	310.6%	345.7%	492.1%	236.9%	101.0%	125.2%	154.6%	136.9%	216.3%	322.4%	230.6%	257.3%	219.2%
Oil	49.1%	82.2%	162.6%	96.6%	130.7%	134.9%	66.6%	109.1%	92.5%	173.2%	94.3%	118.5%	104.9%
Total	178.2%	216.3%	350.7%	183.4%	112.7%	129.1%	119.0%	127.0%	174.0%	280.2%	193.4%	216.0%	181.7%
Additions as % of Reserves:													
Gas	29.5%	26.4%	35.5%	18.7%	8.9%	10.9%	14.9%	13.9%	20.9%	27.8%	19.2%	67.9%	100.2%
Oil	4.8%	8.0%	15.2%	9.0%	13.5%	13.9%	8.4%	12.3%	10.4%	16.2%	9.4%	36.2%	57.0%
Total	17.3%	18.4%	28.0%	15.4%	10.5%	12.0%	12.7%	13.4%	17.7%	24.7%	16.9%	59.4%	87.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures ($million):													
Land & Seismic	$141.0	$18.2	$74.7	$52.9	$50.4	$14.6	$72.4	$17.7	$11.4	$82.6	$9.0	$103.0	$193.1
Exploration & Development	$376.4	$298.5	$499.1	$605.8	$557.9	$834.5	$840.4	$411.7	$333.2	$632.4	$516.0	$1,481.7	$2,733.8
Net Acquisitions	$48.1	$139.5	$638.1	$75.8	$32.4	-$51.9	$31.0	-$58.3	-$402.3	$1.9	-$151.2	-$551.6	-$578.9
Total Expenditures	$565.6	$456.3	$1,211.9	$734.5	$640.8	$797.2	$943.7	$371.1	-$57.7	$717.0	$373.9	$1,033.1	$2,348.0
Expenditures as % of Total:													
Land & Seismic	24.9%	4.0%	6.2%	7.2%	7.9%	1.8%	7.7%	4.8%	-19.8%	11.5%	2.4%	10.0%	8.2%
Exploration & Development	66.6%	65.4%	41.2%	82.5%	87.1%	104.7%	89.0%	110.9%	-577.2%	88.2%	138.0%	143.4%	116.4%
Net Acquisitions	8.5%	30.6%	52.7%	10.3%	5.1%	-6.5%	3.3%	-15.7%	697.0%	0.3%	-40.4%	-53.4%	-24.7%
Cashflow ($million)	$871.6	$448.6	$653.3	$854.1	$720.2	$837.0	$1,018.0	$605.7	$473.3	$564.4	$632.1	$1,669.8	$3,293.5
Cashflow ($/boe)	$45.09	$23.31	$28.81	$33.49	$24.94	$28.58	$29.54	$17.02	$12.77	$14.29	$14.64	$13.94	$17.35
Recycle Ratio	2.7x	2.1x	1.9x	2.1x	1.3x	1.4x	1.3x	2.1x	-14.3x	2.2x	3.3x	3.5x	2.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs ($/boe):													
Exploration & Development (incl. revisions)	$13.10	$8.72	$9.53	$9.72	$15.75	$17.44	$18.32	$8.20	$5.16	$7.40	$6.02	$5.50	$7.47
Net Acquisition Costs	$962.26	$19.89	$20.78	-$6.45	-$83.58	$10.12	-$5.46	$5.22	$41.58	-$10.78	$9.63	$18.80	$12.37
All Sources (incl. revisions)	$16.41	$10.96	$15.24	$15.70	$19.69	$21.08	$23.00	$8.21	-$0.89	$6.48	$4.48	$3.99	$6.81
Exploration & Development (excl. revisions)	$16.27	$11.13	$15.51	$13.47	$29.33	$31.67	$25.50	$11.48	$8.12	$15.46	$8.44	$10.50	$13.06
Net Acquisition Costs	$962.26	$19.89	$20.78	-$6.45	-$83.58	$10.12	-$5.46	$5.22	$41.58	-$10.78	$9.63	$18.80	$12.37
All Sources (excl. revisions)	$17.76	$12.96	$18.98	$18.79	$31.38	$35.64	$30.85	$14.76	-$1.86	$15.57	$8.42	$8.50	$13.24

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

ARC Resources Ltd. (ARX - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	12.71	11.75	12.49	13.14	12.68	13.23	11.98	8.69	7.83	7.82	7.46	7.70	8.66
Exploration Expense	-	-	-	-	-	0.04	1.04	1.03	0.03	0.19	0.28	0.17	0.49
G&A/Other	2.99	2.39	3.92	3.18	3.36	3.22	2.22	1.51	2.02	1.35	1.24	1.52	1.64
F&D Costs	16.41	10.96	15.24	15.70	19.69	21.08	23.00	8.21	4.54	6.48	4.48	5.17	9.34
Return on Capital	10.66	8.14	12.11	11.86	13.27	14.22	13.51	4.90	2.81	4.64	3.23	3.52	6.05
Income Taxes	-	-	-	3.20	3.40	5.56	3.61	1.63	0.58	1.62	1.63	1.20	1.96
Breakeven Oil Price	42.77	33.25	43.76	47.08	52.40	57.36	55.36	25.98	17.82	22.10	18.32	19.28	28.15
Quality Differential	7.85	5.48	5.80	8.88	12.82	10.54	7.87	5.23	5.63	6.59	8.07	6.76	6.68
Required Brent Price	50.62	38.73	49.57	55.96	65.22	67.90	63.23	31.21	23.46	28.69	26.39	26.04	34.83

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	12.71	11.75	12.49	13.14	12.68	13.23	11.98	8.69	7.83	7.82	7.46	7.70	8.66
Exploration Expense	-	-	-	-	-	0.04	1.04	1.03	0.03	0.19	0.28	0.17	0.49
G&A/Other	2.99	2.39	3.92	3.18	3.36	3.22	2.22	1.51	2.02	1.35	1.24	1.52	1.64
F&D Costs	16.41	10.96	15.24	15.70	19.69	21.08	23.00	8.21	4.54	6.48	4.48	5.17	9.34
Return on Capital	10.66	8.14	12.11	11.86	13.27	14.22	13.51	4.90	2.81	4.64	3.23	3.52	6.05
Income Taxes	-	-	-	3.20	3.40	5.56	3.61	1.63	0.58	1.62	1.63	1.20	1.96
Breakeven Oil Price	42.77	33.25	43.76	47.08	52.40	57.36	55.36	25.98	17.82	22.10	18.32	19.28	28.15
Quality Differential	7.85	5.48	5.80	8.88	12.82	10.54	7.87	5.23	5.63	6.59	8.07	6.76	6.68
Required Brent Price	50.62	38.73	49.57	55.96	65.22	67.90	63.23	31.21	23.46	28.69	26.39	26.04	34.83

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Algeria													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

ARC Resources Ltd. (ARX - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.38	16.88	20.00	24.34	24.90	24.48	19.87	14.96	14.75	16.36	17.10	16.05	16.63
Exploration Expense	-	-	-	-	-	0.08	1.72	1.78	0.07	0.40	0.64	0.36	0.94
G&A/Other	3.85	3.44	6.28	5.88	6.61	5.96	3.68	2.60	3.81	2.82	2.85	3.17	3.16
F&D Costs (1-Year)	26.92	21.31	32.23	38.68	35.16	38.04	47.52	14.98	9.05	16.21	13.65	12.97	20.28
Return on Capital	18.06	15.07	23.85	28.58	22.32	24.71	25.86	8.69	5.34	11.37	9.23	8.49	12.50
Income Taxes	-	-	-	7.72	5.71	9.67	6.92	2.90	1.10	3.97	4.66	2.91	4.06
Breakeven Oil Price	**65.21**	**56.70**	**82.36**	**105.21**	**94.70**	**102.94**	**105.57**	**45.90**	**34.12**	**51.14**	**48.14**	**43.95**	**57.57**
Quality Differential	10.12	7.87	9.29	16.44	25.18	19.50	13.05	9.00	10.61	13.77	18.50	14.29	12.99
Required Brent Price	**75.33**	**64.56**	**91.65**	**121.66**	**119.88**	**122.44**	**118.62**	**54.90**	**44.72**	**64.91**	**66.63**	**58.25**	**70.55**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.38	16.88	20.00	24.34	24.90	24.48	19.87	14.96	14.75	16.36	17.10	16.05	16.63
Exploration Expense	-	-	-	-	-	0.08	1.72	1.78	0.07	0.40	0.64	0.36	0.94
G&A/Other	3.85	3.44	6.28	5.88	6.61	5.96	3.68	2.60	3.81	2.82	2.85	3.17	3.16
F&D Costs (1-Year)	72.55	35.70	48.19	54.69	41.93	40.09	36.98	15.49	16.95	19.30	26.21	20.15	22.98
Return on Capital	46.80	25.05	35.71	39.15	26.41	25.51	20.14	8.99	10.00	13.42	17.73	13.17	14.11
Income Taxes	-	-	-	10.58	6.76	9.98	5.39	3.00	2.06	4.69	8.96	4.51	4.58
Breakeven Oil Price	**139.58**	**81.07**	**110.17**	**134.65**	**106.61**	**106.10**	**87.77**	**46.81**	**47.63**	**56.99**	**73.48**	**57.41**	**62.40**
Quality Differential	10.12	7.87	9.29	16.44	25.18	19.50	13.05	9.00	10.61	13.77	18.50	14.29	12.99
Required Brent Price	**149.70**	**88.94**	**119.47**	**151.10**	**131.79**	**125.60**	**100.82**	**55.80**	**58.23**	**70.76**	**91.98**	**71.70**	**75.39**

Source: BMO Capital Markets, Company Reports

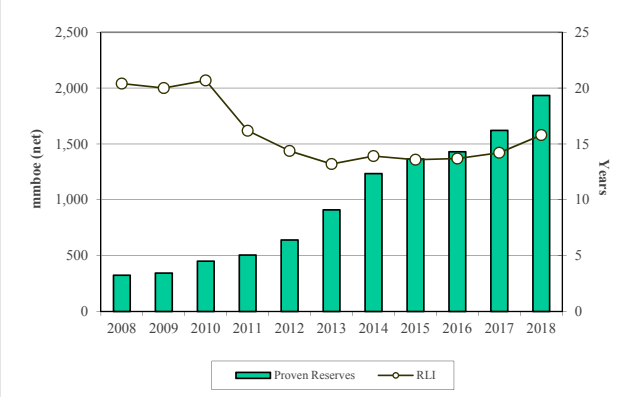
See pages F1 to F4 for analyst coverage.

Cabot Oil & Gas Corporation (COG - NYSE) US$, net

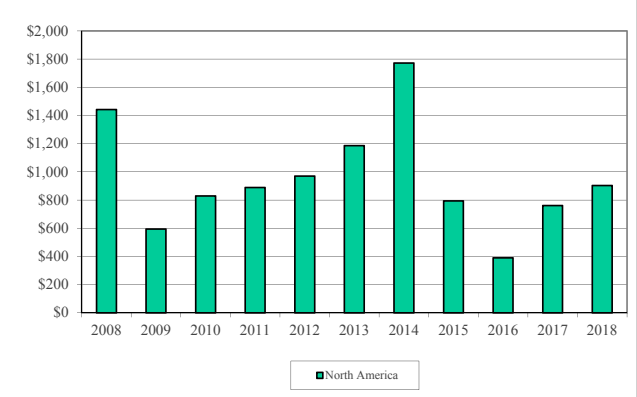
- Cabot reported results of operations of $4.71/boe in 2018 versus $2.34/boe in 2017.
- The company continued to report strong F&D performance and its one-year F&D costs came in at $1.79/boe versus $2.11/boe last year. On a realized oil:gas price ratio basis, F&D costs increased to $7.45/boe in 2018 from $6.50/boe in 2017, while costs for PD reserves jumped to $10.43/boe from $8.73/boe.
- Cabot's 2018 costs imply a Brent breakeven oil price of $55.56/boe on total proved reserves, while its PD costs imply a breakeven of $62.79/boe.
- Cabot reported ROCE of 18.5% in 2018 relative to a normalized 2017 ROCE of 6.1%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

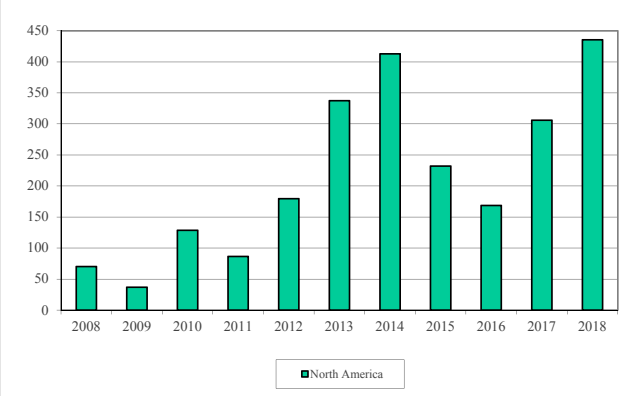
Proven Reserves vs RLI



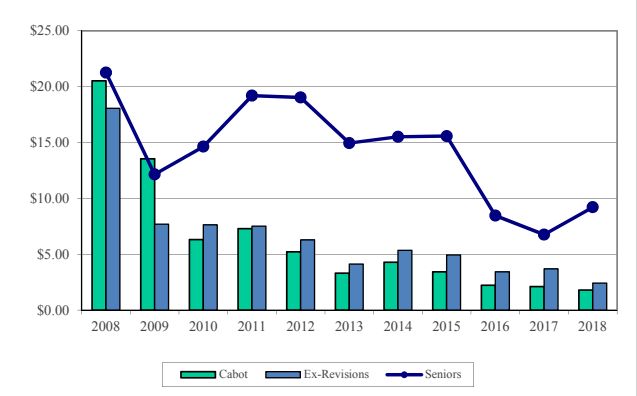
Capital Spending by Region (US$million)



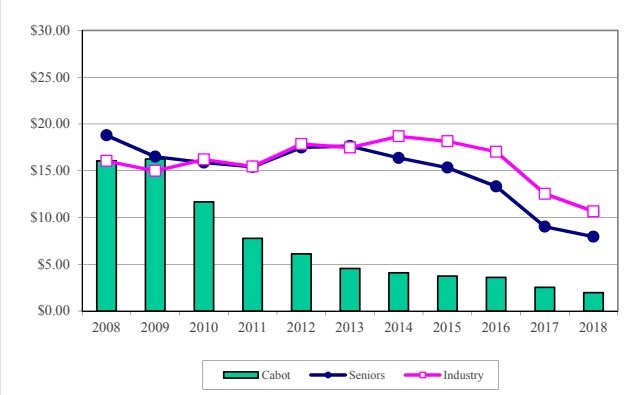
Proven Reserve Additions by Region (million boe)



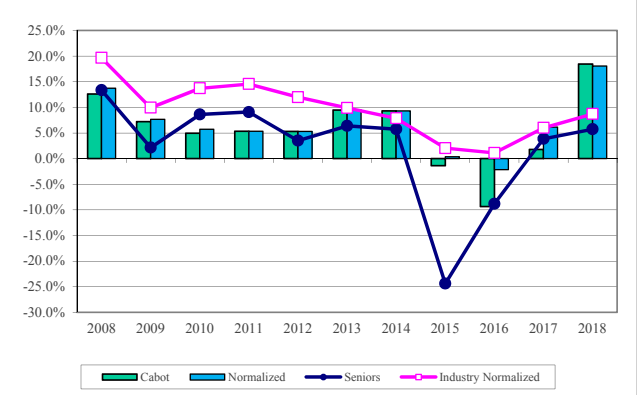
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



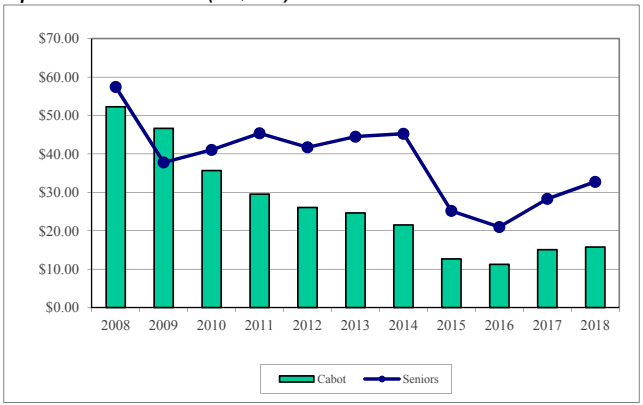
Source: BMO Capital Markets, Company Reports

Cabot Oil & Gas Corporation (COG - NYSE)

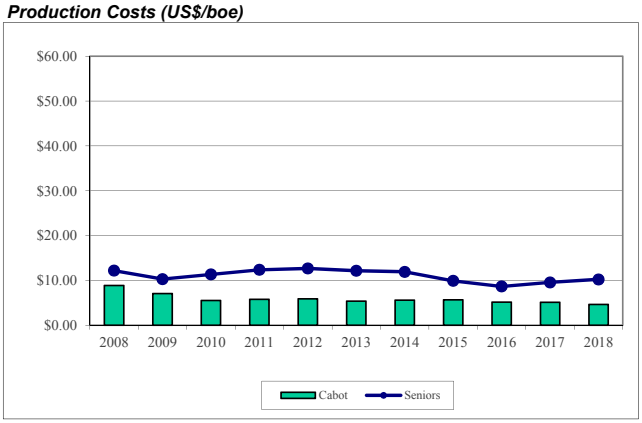
US$/boe, net

North America

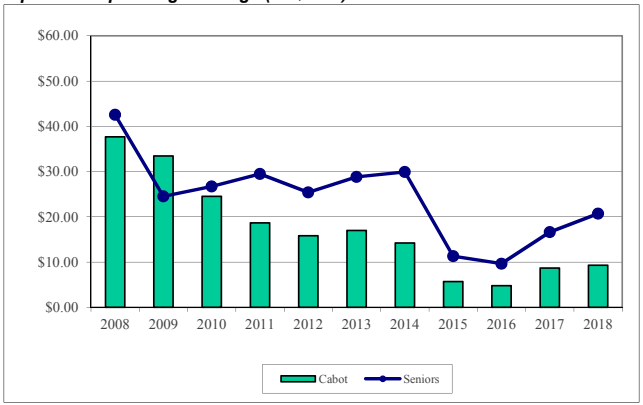
Upstream Net Revenue (US$/boe)



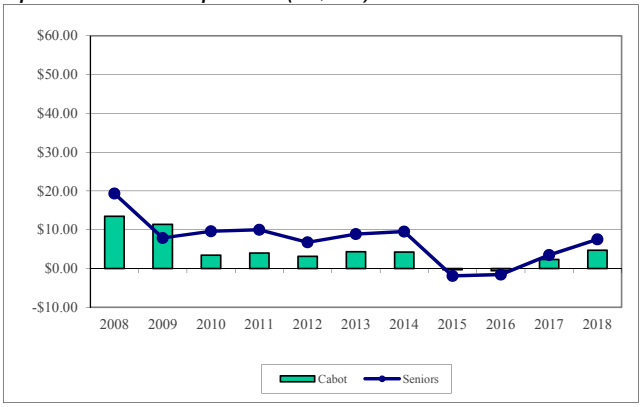
Production Costs (US$/boe)



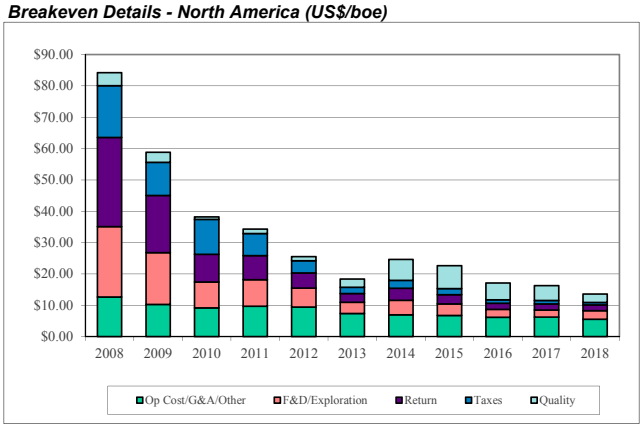
Upstream Operating Earnings (US$/boe)



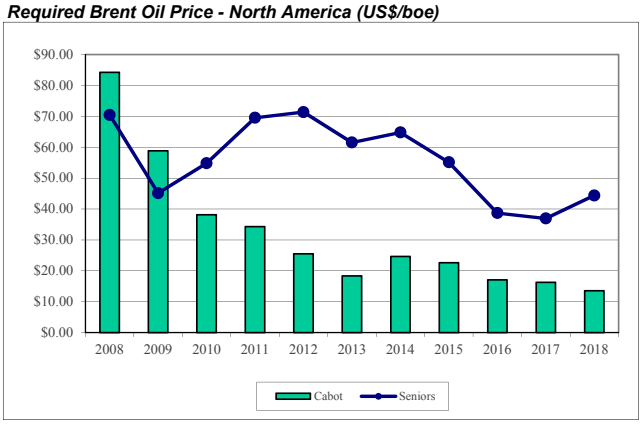
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cabot Oil & Gas Corporation (COG - NYSE)

FInancial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	943	875	760	848	1,162	1,697	1,905	1,273	1,174	1,718	1,930
Midstream / Downstream Revenue	-	-	79	126	34	36	34	16	14	17	210
Other	3	4	5	6	9	13	234	68	(32)	28.59	48.75
Total Revenue and Other Income	946	879	844	980	1,205	1,746	2,173	1,357	1,156	1,764	2,188
Crude Oil and Product Purchases	100	67	56	44	29	30	30	13	11	15.252	184.198
Production and Transportation Expenses	92	94	100	181	262	370	495	568	537	583.749	566.377
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	31	51	43	36	37	18	29	27	28	21.526	113.820
General and Administrative	74	68	79	105	121	105	83	69	87	97.786	96.641
Depreciation, Depletion and Amortization	185	221	327	343	451	651	633	622	590	568.817	417.479
Interest, net	36	59	68	72	68	65	74	97	88	82.130	73.201
Other	91	96	(27)	(36)	(2)	22	798	147	474	623.39	38.30
Earnings Before Income Tax	336	223	198	235	238	486	32	(187)	(660)	(228)	698
Current Income Taxes	3	(27)	33	38	25	67	41	(0)	(12)	(8)	282
Future Income Taxes	121	102	62	75	81	138	(113)	(73)	(231)	(321)	(141)
Total Income Taxes	124	75	95	112	106	206	(72)	(73)	(242)	(329)	141
Minority Interest	-	-	-	-	-	-				-	-
Earnings From Continuing Operations	211	148	103	123	132	280	104	(114)	(417)	100	557
Discontinued Operations/Extraordinary Items	16	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	227	148	103	123	132	280	104	(114)	(417)	100	557
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	227	148	103	123	132	280	104	(114)	(417)	100.393	557.043

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	211	148	103	123	132	280	104	(114)	(417)	100	557
Charges and Credits Not Impacting Cash	415	421	441	432	546	790	528	553	370	734	374
Other	(17)	35	(87)	(5)	2	28	639	260	508	141	337
Cash Flow From Operations	609	605	458	550	680	1,098	1,272	699	461	976	1,268
Change in Working Capital / Other	26	9	27	(47)	(28)	(74)	(36)	42	(68)	(78)	(163)
Net Cash From Operating Activities	634	614	485	502	652	1,025	1,236	741	392	898	1,105
Total Capital Expenditures	(817)	(560)	(857)	(891)	(928)	(1,195)	(1,480)	(956)	(375)	(765)	(894)
Acquisitions, net	(604)	80	244	404	169	324	(175)	(9)	50	115	678
Other	(31)	(51)	-	-	(7)	(47)	(10)	(29)	(28)	(57)	(77)
Net Cash From Investing Activities	(1,452)	(531)	(614)	(488)	(766)	(918)	(1,665)	(993)	(353)	(706)	(293)
Net Change in Debt	517	(62)	170	(25)	137	60	605	273	(497)	-	(297)
Net Change in Common Stock	316	0	1	-	-	(165)	(139)	-	995	(124)	(873)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(12)	(12)	(12)	(13)	(17)	(25)	(33)	(33)	(36)	(79)	(111)
Other	6	3	(14)	(3)	(6)	16	(7)	(8)	(3)	(8)	(8)
Net Cash From Financing Activities	827	(71)	145	(41)	114	(114)	426	232	459	(211)	(1,289)
Effect of Exchange Rate on Cash	-	-	-	-	-	-					
Net Increase/(Decrease) in Cash	10	12	16	(26)	1	(7)	(2)	(20)	498	(18)	(478)
Cash and Equivalents, Beginning of Year	18	28	40	56	30	31	23	21	1	499	480
Cash and Equivalents, End of Year	28	40	56	30	31	23	21	1	499	480	2

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cabot Oil & Gas Corporation (COG - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	461	282	203	346	270	379	413	145	716	765	545
Net Property, Plant and Equipment	3,136	3,358	3,763	3,935	4,311	4,546	4,926	4,977	4,250	3,072	3,464
Other Assets	105	44	39	51	35	56	99	140	157	890.18	190.68
Total Assets	3,702	3,683	4,005	4,331	4,616	4,981	5,438	5,262	5,123	4,727	4,199
Total Current Liabilities	379	309	304	343	444	408	499	236	258	630	287
Long-term Debt	831	805	975	950	1,012	1,147	1,752	2,005	1,521	1,218	1,226
Deferred Income Taxes	599	645	715	803	883	1,068	844	807	579	227	459
Other Liabilities and Deferred Credits	102	112	139	131	146	154	200	205	197	128	139
Total Liabilities	1,911	1,871	2,132	2,227	2,485	2,776	3,295	3,253	2,555	2,203	2,111
Minority Interests										-	-
Common Shares	10	10	10	21	21	42	42	42	48	48	48
Contributed Surplus (Paid-in Capital)	676	706	721	724	717	711	710	722	1,727	1,742	1,763
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	922	1,057	1,148	1,258	1,373	1,628	1,699	1,552	1,099	1,162	1,608
Other / Comprehensive Income (Loss)	183	39	(7)	101	21	(176)	(309)	(307)	(306)	(428.50)	(1,330.25)
Total Shareholders' Equity	1,791	1,813	1,873	2,105	2,131	2,205	2,143	2,009	2,568	2,524	2,088
Total Liabilities and Shareholders' Equity	3,702	3,683	4,005	4,331	4,616	4,981	5,438	5,262	5,123	4,727	4,199
Return on Capital Employed (ROCE)	**12.6%**	**7.2%**	**5.0%**	**5.3%**	**5.3%**	**9.5%**	**9.3%**	**-1.4%**	**-9.3%**	**1.8%**	**18.5%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

												Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	829	800	776	922	1,162	1,697	1,905	1,273	1,174	1,718	1,930	4,822	8,000
Production Costs	141	121	120	181	262	370	495	568	537	584	566	1,687	2,751
Exploration	31	51	43	36	37	18	29	27	28	22	114	163	219
DD&A	259	265	364	343	451	651	633	622	590	569	417	1,576	2,831
G&A/Other	59	55	79	122	158	137	121	105	108	121	110	339	566
Pre-tax Results Of Operations	338	308	169	240	253	520	627	-50	-89	423	723	1,056	1,633
Income Taxes	125	113	94	115	113	220	251	-20	-33	155	146	269	500
Results Of Operations	214	195	75	125	140	300	376	-30	-56	267	577	788	1,133

												Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	829	800	776	922	1,162	1,697	1,905	1,273	1,174	1,718	1,930	4,822	8,000
Production Costs	141	121	120	181	262	370	495	568	537	584	566	1,687	2,751
Exploration	31	51	43	36	37	18	29	27	28	22	114	163	219
DD&A	259	265	364	343	451	651	633	622	590	569	417	1,576	2,831
G&A/Other	59	55	79	122	158	137	121	105	108	121	110	339	566
Pre-tax Results Of Operations	338	308	169	240	253	520	627	-50	-89	423	723	1,056	1,633
Income Taxes	125	113	94	115	113	220	251	-20	-33	155	146	269	500
Results Of Operations	214	195	75	125	140	300	376	-30	-56	267	577	788	1,133

												Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Cabot Oil & Gas Corporation (COG - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$52.27	$46.64	$35.64	$29.52	$26.06	$24.63	$21.49	$12.68	$11.24	$15.06	$15.75	$14.14	$15.09
Production Costs	$8.87	$7.06	$5.53	$5.78	$5.87	$5.38	$5.58	$5.66	$5.14	$5.12	$4.62	$4.95	$5.19
Exploration	$1.97	$2.96	$1.96	$1.17	$0.84	$0.26	$0.32	$0.27	$0.26	$0.19	$0.93	$0.48	$0.41
DD&A	$16.35	$15.46	$16.74	$10.98	$10.13	$9.45	$7.14	$6.20	$5.65	$4.98	$3.41	$4.62	$5.34
G&A/Other	$3.74	$3.19	$3.64	$3.90	$3.54	$1.99	$1.37	$1.05	$1.03	$1.06	$0.89	$0.99	$1.07
Pre-tax Results Of Operations	$21.34	$17.97	$7.78	$7.69	$5.68	$7.55	$7.07	-$0.50	-$0.85	$3.71	$5.90	$3.10	$3.08
Income Taxes	$7.85	$6.60	$4.33	$3.68	$2.53	$3.20	$2.83	-$0.20	-$0.31	$1.36	$1.19	$0.79	$0.94
Results Of Operations	$13.49	$11.38	$3.45	$4.02	$3.15	$4.35	$4.24	-$0.30	-$0.54	$2.34	$4.71	$2.31	$2.14

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$52.27	$46.64	$35.64	$29.52	$26.06	$24.63	$21.49	$12.68	$11.24	$15.06	$15.75	$14.14	$15.09
Production Costs	$8.87	$7.06	$5.53	$5.78	$5.87	$5.38	$5.58	$5.66	$5.14	$5.12	$4.62	$4.95	$5.19
Exploration	$1.97	$2.96	$1.96	$1.17	$0.84	$0.26	$0.32	$0.27	$0.26	$0.19	$0.93	$0.48	$0.41
DD&A	$16.35	$15.46	$16.74	$10.98	$10.13	$9.45	$7.14	$6.20	$5.65	$4.98	$3.41	$4.62	$5.34
G&A/Other	$3.74	$3.19	$3.64	$3.90	$3.54	$1.99	$1.37	$1.05	$1.03	$1.06	$0.89	$0.99	$1.07
Pre-tax Results Of Operations	$21.34	$17.97	$7.78	$7.69	$5.68	$7.55	$7.07	-$0.50	-$0.85	$3.71	$5.90	$3.10	$3.08
Income Taxes	$7.85	$6.60	$4.33	$3.68	$2.53	$3.20	$2.83	-$0.20	-$0.31	$1.36	$1.19	$0.79	$0.94
Results Of Operations	$13.49	$11.38	$3.45	$4.02	$3.15	$4.35	$4.24	-$0.30	-$0.54	$2.34	$4.71	$2.31	$2.14

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Cabot Oil & Gas Corporation (COG - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	247.7	268.3	343.8	490.0	693.2	1,079.5	1,391.8	1,550.7	1,643.8	1,794.5	2,000.0	1,812.8	1,676.2
Liquids Production (b/d)	2,175	2,312	2,351	3,956	6,595	8,825	10,852	16,701	12,203	13,570	2,271	9,348	11,119
Total Production (boe/d)	43,465	47,022	59,645	85,622	122,120	188,733	242,816	275,149	286,175	312,657	335,605	311,479	290,480
% Gas Production	95%	95%	96%	95%	95%	95%	96%	94%	96%	96%	99%	97%	96%
% Oil Production	5%	5%	4%	5%	5%	5%	4%	6%	4%	4%	1%	3%	4%
Proven Reserves:													
Gas Reserves (bcf)	1,886.0	2,013.2	2,644.2	2,909.9	3,695.9	5,294.9	7,081.9	7,855.9	8,280.9	9,352.9	11,603.9	9,745.9	8,835.1
Oil Reserves (mmbbls)	9.3	7.8	9.5	20.5	24.4	26.5	53.1	55.7	49.2	62.3	0.1	37.2	44.1
Total Proven Reserves (mmboe)	323.7	343.3	450.2	505.5	640.4	909.0	1,233.5	1,365.0	1,429.3	1,621.1	1,934.1	1,661.5	1,516.6
% Gas Reserves	97%	98%	98%	96%	96%	97%	96%	96%	97%	96%	100%	98%	97%
% Oil Reserves	3%	2%	2%	4%	4%	3%	4%	4%	3%	4%	0%	2%	3%
Proven Reserve Life Index	20.4	20.0	20.7	16.2	14.4	13.2	13.9	13.6	13.7	14.2	15.8	14.6	14.2
Proven Reserve Additions:													
Gas Additions (bcf)	416.5	225.1	756.5	444.6	1,039.0	1,993.0	2,295.0	1,340.0	1,025.0	1,727.0	2,981.0	5,733.0	9,368.0
Oil Additions (mmbbls)	0.8	-0.7	2.6	12.4	6.3	5.4	30.6	8.7	-2.1	18.0	-61.3	(45.4)	(6.1)
Total Additions (mmboe)	70.2	36.8	128.6	86.5	179.5	337.6	413.1	232.0	168.7	305.9	435.5	910.1	1,555.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	50.6	77.1	108.4	118.3	154.5	287.5	318.4	160.8	113.9	206.0	373.8	693.7	1,172.9
Acquisitions	29.1	0.0	0.1	0.0	0.0	0.0	12.9	0.2	0.0	0.0	0.0	-	13.1
Dispositions	0.0	(7.0)	(2.7)	(35.4)	(6.4)	(22.0)	(0.5)	-	(6.8)	(54.9)	(68.3)	(129.9)	(130.4)
Revisions of Estimates	(9.6)	(33.4)	22.8	3.6	31.4	72.1	82.2	71.0	61.6	154.7	130.0	346.4	499.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	72.1%	209.6%	84.3%	136.8%	86.1%	85.2%	77.1%	69.3%	67.5%	67.3%	85.8%	76.2%	75.4%
Acquisitions	41.5%	0.0%	0.1%	0.0%	0.0%	0.0%	3.1%	0.1%	0.0%	0.0%	0.0%	0.0%	0.8%
Dispositions	0.0%	-19.0%	-2.1%	-40.9%	-3.6%	-6.5%	-0.1%	0.0%	-4.0%	-17.9%	-15.7%	-14.3%	-8.4%
Revisions of Estimates	-13.6%	-90.6%	17.7%	4.2%	17.5%	21.4%	19.9%	30.6%	36.5%	50.6%	29.9%	38.1%	32.1%
Additions as % of Production:													
Gas	460.6%	229.9%	602.9%	248.6%	410.7%	505.8%	451.8%	236.7%	170.8%	263.7%	408.4%	288.8%	306.2%
Oil	101.6%	-84.6%	299.1%	860.3%	262.2%	167.2%	771.5%	142.6%	-47.2%	364.1%	-7394.8%	-443.3%	-30.2%
Total	442.6%	214.4%	590.9%	276.9%	402.7%	490.0%	466.1%	231.0%	161.5%	268.0%	355.5%	266.8%	293.4%
Additions as % of Reserves:													
Gas	22.1%	11.2%	28.6%	15.3%	28.1%	37.6%	32.4%	17.1%	12.4%	18.5%	25.7%	58.8%	106.0%
Oil	8.6%	-9.2%	27.0%	60.7%	25.9%	20.3%	57.5%	15.6%	-4.3%	29.0%	-5108.5.8%	-122.0%	-13.9%
Total	21.7%	10.7%	28.6%	17.1%	28.0%	37.1%	33.5%	17.0%	11.8%	18.9%	22.5%	54.8%	102.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$89.0	$81.5	$66.4	$53.5	$59.2	$44.9	$36.3	$34.0	$27.6	$41.2	$94.3	$163.2	$233.5
Development	$594.2	$365.8	$630.5	$763.6	$821.8	$1,070.0	$1,446.7	$723.5	$359.5	$617.5	$778.6	$1,755.6	$3,925.8
Acquisitions	$758.5	$146.1	$131.5	$71.1	$88.9	$71.2	$288.7	$36.4	$2.7	$102.3	$29.9	$134.8	$459.9
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$1,441.8	$593.4	$828.4	$888.3	$969.9	$1,186.1	$1,771.7	$793.9	$389.8	$761.0	$902.7	$2,053.6	$4,619.2
Expenditures as % of Total:													
Exploration	6.2%	13.7%	8.0%	6.0%	6.1%	3.8%	2.0%	4.3%	7.1%	5.4%	10.4%	7.9%	5.1%
Development	41.2%	61.6%	76.1%	86.0%	84.7%	90.2%	81.7%	91.1%	92.2%	81.1%	86.2%	85.5%	85.0%
Acquisitions	52.6%	24.6%	15.9%	8.0%	9.2%	6.0%	16.3%	4.6%	0.7%	13.4%	3.3%	6.6%	10.0%
Cashflow (US$million)	504.6	511.4	482.2	505.1	629.1	968.8	1037.6	619.2	561.5	857.7	1107.8	2527.0	4183.8
Cashflow (US$/boe)	$31.80	$29.80	$22.15	$16.16	$14.11	$14.06	$11.71	$6.17	$5.38	$7.52	$9.04	$7.41	$7.89
Recycle Ratio	1.5x	2.2x	3.5x	2.2x	2.7x	4.3x	2.7x	1.8x	2.4x	3.6x	5.0x	3.8x	2.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$16.62	$10.22	$5.31	$6.70	$4.74	$3.10	$3.70	$3.27	$2.21	$1.83	$1.73	$1.84	$2.49
Acquisition Costs	$26.03	nm	$1,278.53	na	na	na	$22.30	$194.70	na	na	na	-$1.04	-$3.92
All Sources (incl. revisions)	$20.53	$13.55	$6.31	$7.29	$5.22	$3.30	$4.28	$3.42	$2.22	$2.11	$1.79	$1.97	$2.74
Exploration & Development (excl. revisions)	$13.49	$5.80	$6.43	$6.91	$5.70	$3.88	$4.66	$4.71	$3.40	$3.20	$2.33	$2.77	$3.55
Acquisition Costs	$26.03	nm	$1,278.53	na	na	na	$22.30	$194.70	na	na	na	-$1.04	-$3.92
All Sources (excl. revisions)	$18.07	$7.69	$7.63	$7.51	$6.28	$4.13	$5.35	$4.93	$3.42	$3.69	$2.41	$2.96	$4.38
Geographically Segmented Costs													
North America	$20.53	$13.55	$6.31	$7.29	$5.22	$3.30	$4.28	$3.42	$2.22	$2.11	$1.79	$1.97	$2.74

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cabot Oil & Gas Corporation (COG - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Operating Costs	8.87	7.06	5.53	5.78	5.87	5.38	5.58	5.66	5.14	5.12	4.62	4.95	5.19
Exploration Expense	1.97	2.96	1.96	1.17	0.84	0.26	0.32	0.27	0.26	0.19	0.93	0.48	0.41
G&A/Other	3.74	3.19	3.64	3.90	3.54	1.99	1.37	1.05	1.03	1.06	0.89	0.99	1.07
F&D Costs	20.53	13.55	6.31	7.29	5.22	3.30	4.28	3.42	2.22	2.11	1.79	1.97	2.74
Return on Capital	28.42	18.27	8.84	7.71	4.83	2.78	3.83	2.98	1.95	1.93	1.84	1.86	2.51
Income Taxes	16.54	10.59	11.11	7.06	3.89	2.04	2.56	1.92	1.13	1.12	0.79	0.98	1.45
Breakeven Oil Price	80.07	55.61	37.39	32.90	24.20	15.75	17.95	15.30	11.75	11.53	10.88	11.23	13.37
Quality Differential	4.18	3.22	0.78	1.41	1.32	2.63	6.69	7.32	5.34	4.73	2.69	4.25	5.36
Required Brent Price	84.24	58.84	38.17	34.30	25.52	18.38	24.64	22.62	17.09	16.26	13.57	15.48	18.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Operating Costs	8.87	7.06	5.53	5.78	5.87	5.38	5.58	5.66	5.14	5.12	4.62	4.95	5.19
Exploration Expense	1.97	2.96	1.96	1.17	0.84	0.26	0.32	0.27	0.26	0.19	0.93	0.48	0.41
G&A/Other	3.74	3.19	3.64	3.90	3.54	1.99	1.37	1.05	1.03	1.06	0.89	0.99	1.07
F&D Costs	20.53	13.55	6.31	7.29	5.22	3.30	4.28	3.42	2.22	2.11	1.79	1.97	2.74
Return on Capital	28.42	18.27	8.84	7.71	4.83	2.78	3.83	2.98	1.95	1.93	1.84	1.86	2.51
Income Taxes	16.54	10.59	11.11	7.06	3.89	2.04	2.56	1.92	1.13	1.12	0.79	0.98	1.45
Breakeven Oil Price	80.07	55.61	37.39	32.90	24.20	15.75	17.95	15.30	11.75	11.53	10.88	11.23	13.37
Quality Differential	4.18	3.22	0.78	1.41	1.32	2.63	6.69	7.32	5.34	4.73	2.69	4.25	5.36
Required Brent Price	84.24	58.84	38.17	34.30	25.52	18.38	24.64	22.62	17.09	16.26	13.57	15.48	18.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Operating Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Return on Capital	-	-	-	-	-	-	-	-	-	-	-	-	-
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Cabot Oil & Gas Corporation (COG - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	16.46	17.01	14.57	19.19	26.94	22.07	20.86	19.94	17.03	16.01	18.91	17.23	18.31
Exploration Expense	3.65	7.13	5.17	3.87	3.86	1.08	1.21	0.96	0.88	0.59	3.80	1.66	1.46
G&A/Other	6.94	7.68	9.59	12.93	16.27	8.17	5.11	3.69	3.42	3.33	3.66	3.46	3.77
F&D Costs (1-Year)	39.44	35.92	17.20	20.90	25.80	14.39	14.76	12.86	8.24	6.50	7.45	7.19	9.89
Return on Capital	53.03	46.46	23.21	21.72	22.30	11.38	13.10	10.54	7.03	5.88	7.50	6.61	8.85
Income Taxes	30.86	26.94	29.18	19.88	17.96	8.37	8.73	6.79	4.09	3.42	3.21	3.49	5.09
Breakeven Oil Price	**150.37**	**141.16**	**98.91**	**98.48**	**113.13**	**65.47**	**63.77**	**54.80**	**40.69**	**35.73**	**44.54**	**39.64**	**47.37**
Quality Differential	7.75	7.77	2.06	4.67	6.07	10.78	24.99	25.79	17.68	14.81	11.02	14.50	18.86
Required Brent Price	**158.11**	**148.93**	**100.97**	**103.16**	**119.19**	**76.25**	**88.77**	**80.59**	**58.37**	**50.53**	**55.56**	**54.14**	**66.22**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	16.46	17.01	14.57	19.19	26.94	22.07	20.86	19.94	17.03	16.01	18.91	17.23	18.31
Exploration Expense	3.65	7.13	5.17	3.87	3.86	1.08	1.21	0.96	0.88	0.59	3.80	1.66	1.46
G&A/Other	6.94	7.68	9.59	12.93	16.27	8.17	5.11	3.69	3.42	3.33	3.66	3.46	3.77
F&D Costs (1-Year)	62.10	84.80	25.01	41.03	36.89	20.51	21.12	19.74	5.84	8.73	10.43	8.54	13.17
Return on Capital	81.81	108.21	33.01	42.65	31.92	16.25	18.79	16.21	5.01	7.89	10.47	7.88	11.77
Income Taxes	47.61	62.76	41.50	39.05	25.72	11.95	12.53	10.44	2.92	4.59	4.49	4.15	6.78
Breakeven Oil Price	**218.56**	**287.59**	**128.85**	**158.72**	**141.59**	**80.03**	**79.63**	**70.99**	**35.09**	**41.14**	**51.76**	**42.92**	**55.26**
Quality Differential	7.75	7.77	2.06	4.67	6.07	10.78	24.99	25.79	17.68	14.81	11.02	14.50	18.86
Required Brent Price	**226.31**	**295.36**	**130.91**	**163.39**	**147.66**	**90.82**	**104.62**	**96.79**	**52.77**	**55.94**	**62.79**	**57.42**	**74.12**

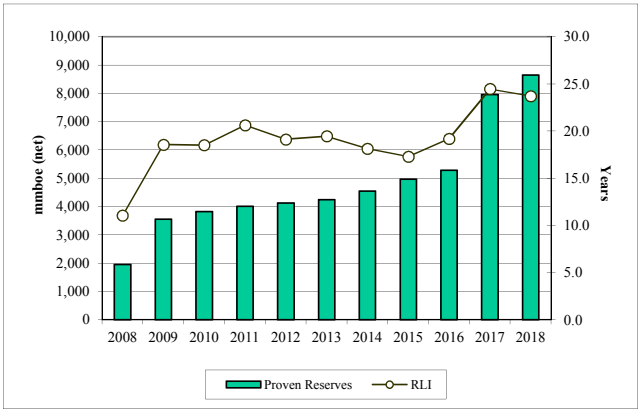
Source: BMO Capital Markets, Company Reports

Canadian Natural Resources Limited (CNQ - TSX, NYSE) US$, net

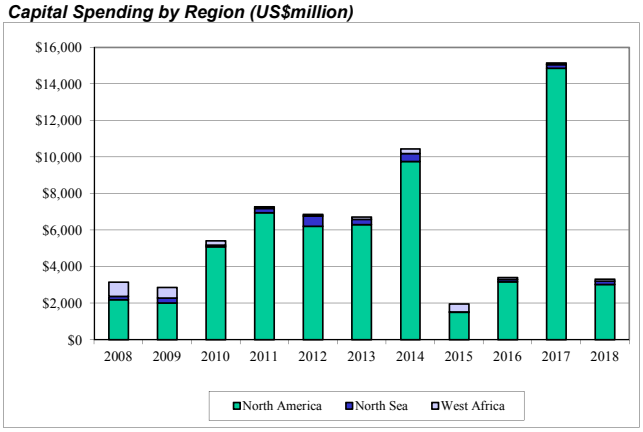
- Canadian Natural Resources managed to improve its operating performance in 2018. The company reported results from operations of $7.36/boe versus $4.85/boe in 2017.
- The company's F&D costs were slightly lower at $5.81/boe in 2018 compared to $7.85/boe last year. On a realized oil:gas price ratio basis, F&D costs were $4.55/boe versus $8.93/boe in 2017, while the costs for PD reserves dropped to $4.86/boe from $9.17/boe.
- Canadian Natural's 2018 costs imply a Brent breakeven oil price of $54.02/boe on total proved reserves, while its PD costs imply a Brent breakeven of $54.50/boe.
- The company reported a return on capital of 5.9% in 2018 versus 6.1% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

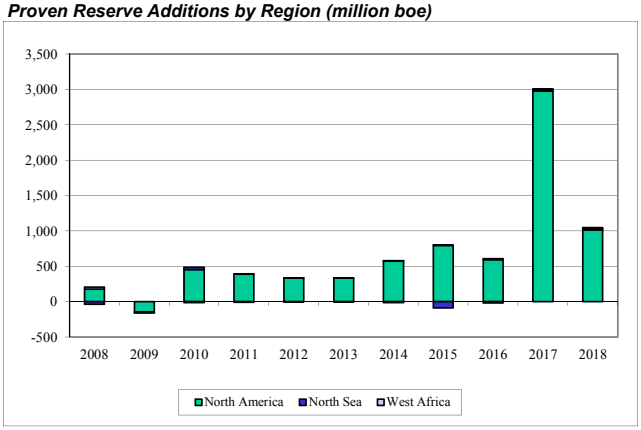
Proven Reserves vs RLI



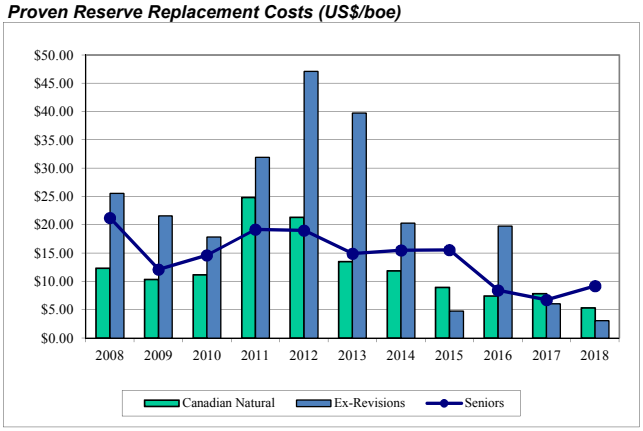
Capital Spending by Region (US$million)



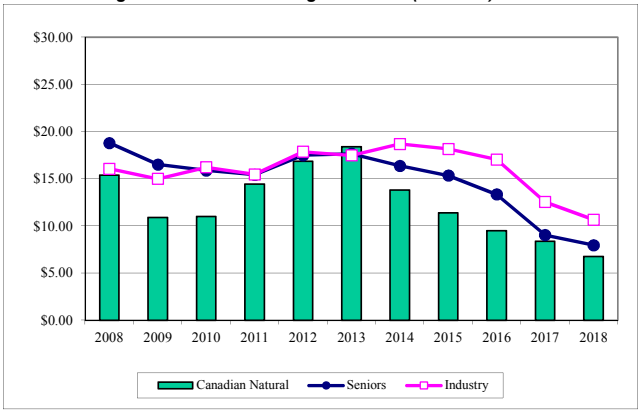
Proven Reserve Additions by Region (million boe)



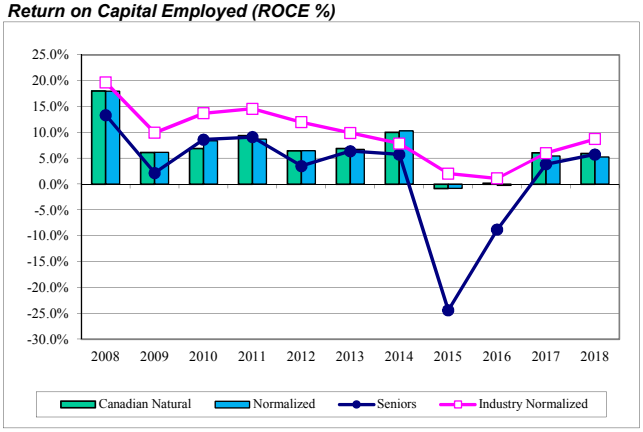
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



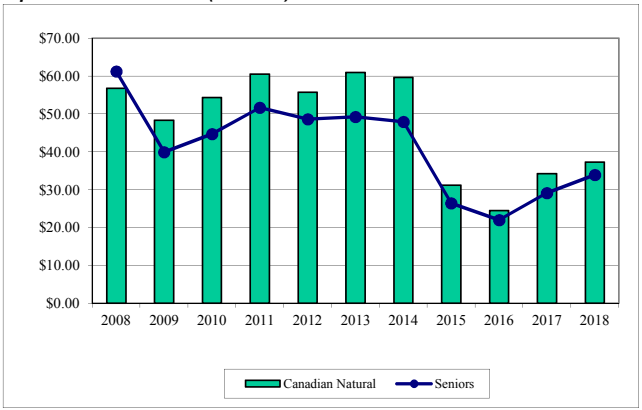
Notes: Reserve estimates reported after royalties; *We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions. Blended with Conventional F&D results for North American Segment
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

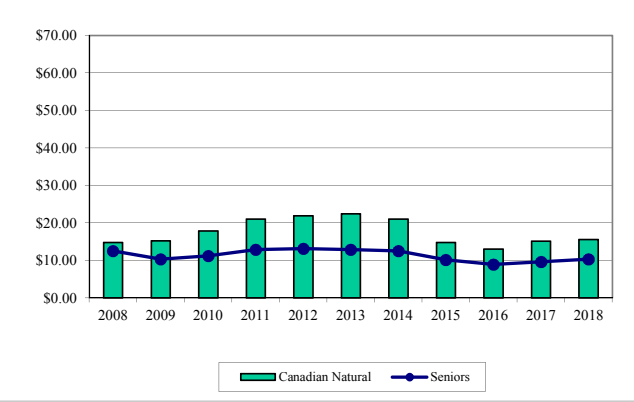
Canadian Natural Resources Limited (CNQ - TSX, NYSE) US$/boe, net

Worldwide

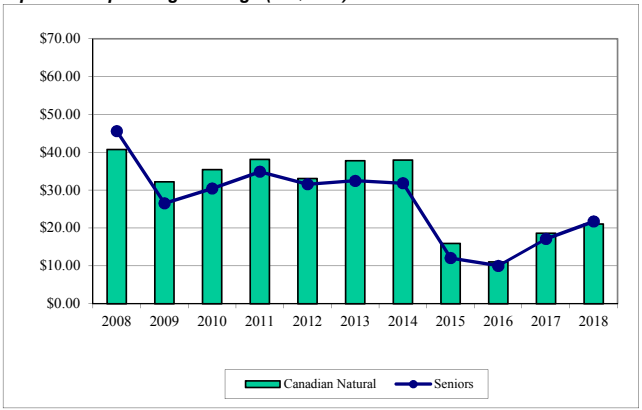
Upstream Net Revenue (US$/boe)



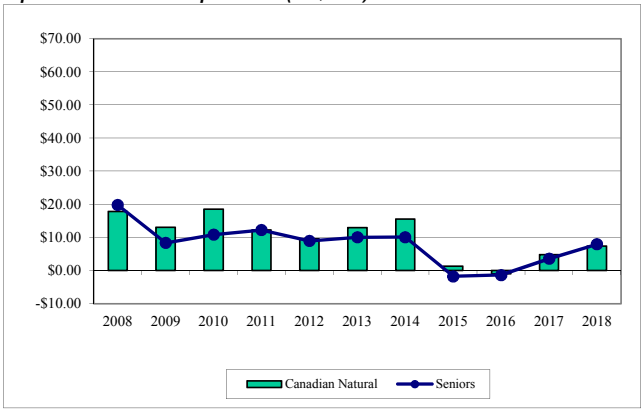
Production Costs (US$/boe)



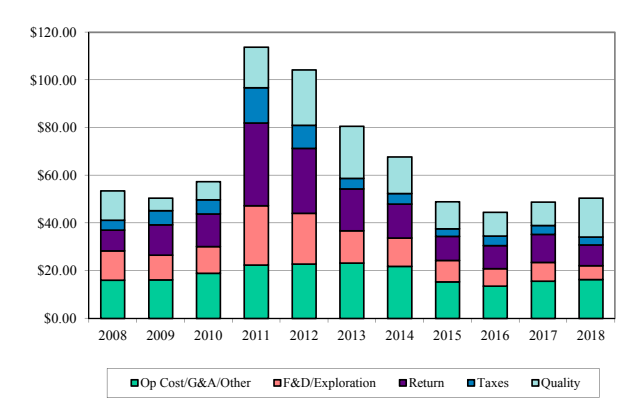
Upstream Operating Earnings (US$/boe)



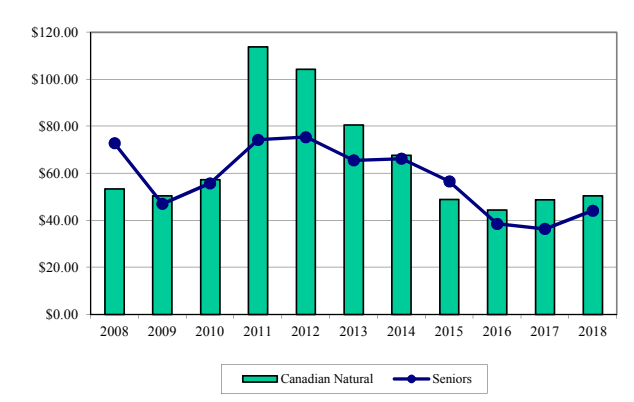
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



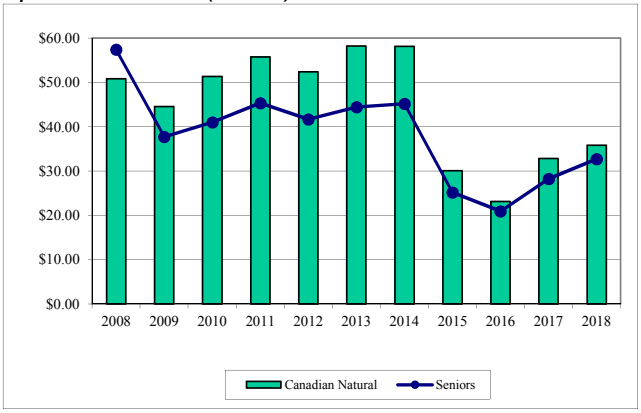
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

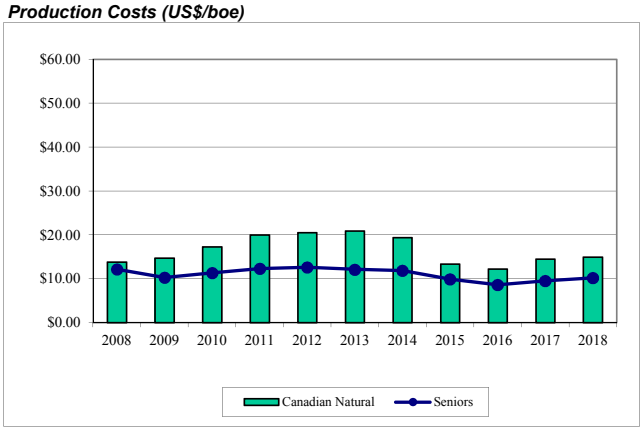
Canadian Natural Resources Limited (CNQ - TSX, NYSE) US$/boe, net

North America

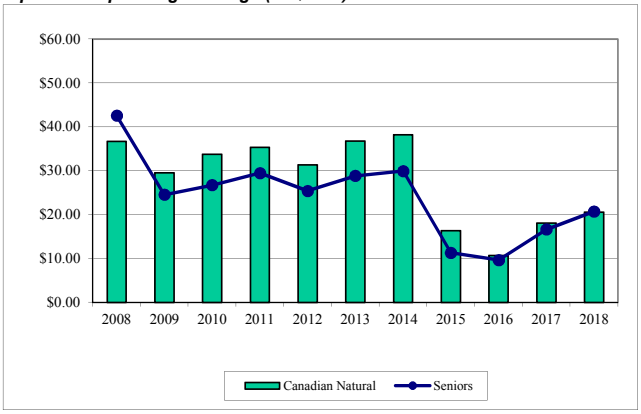
Upstream Net Revenue (US$/boe)



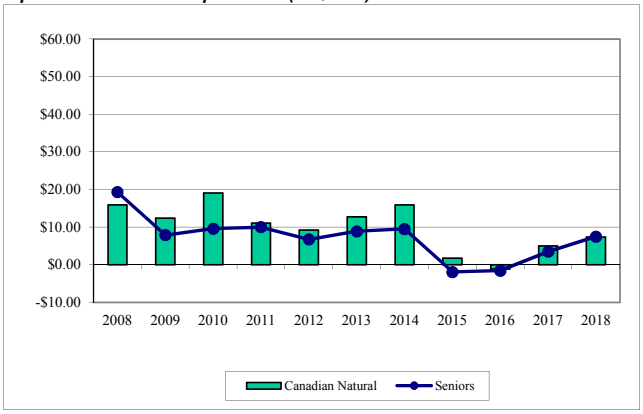
Production Costs (US$/boe)



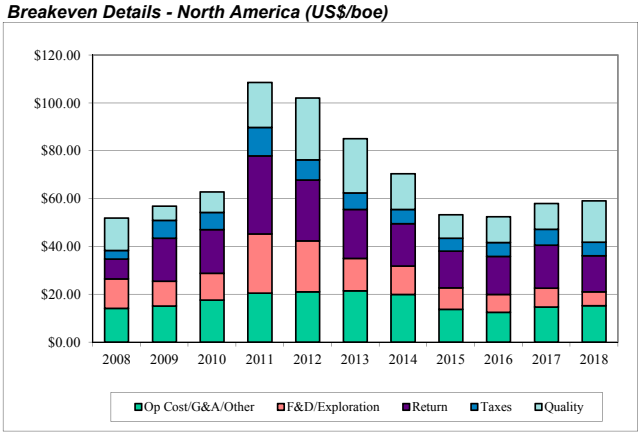
Upstream Operating Earnings (US$/boe)



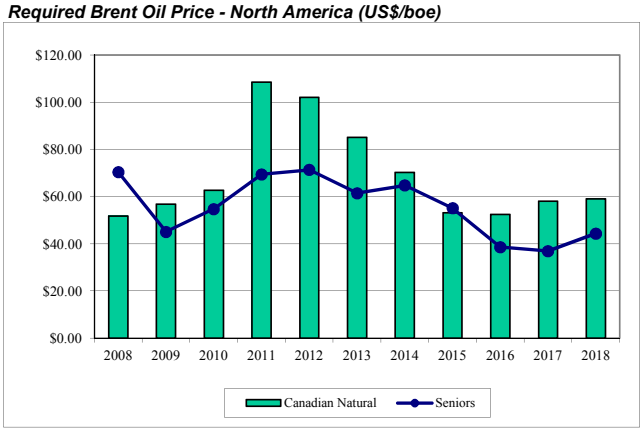
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)

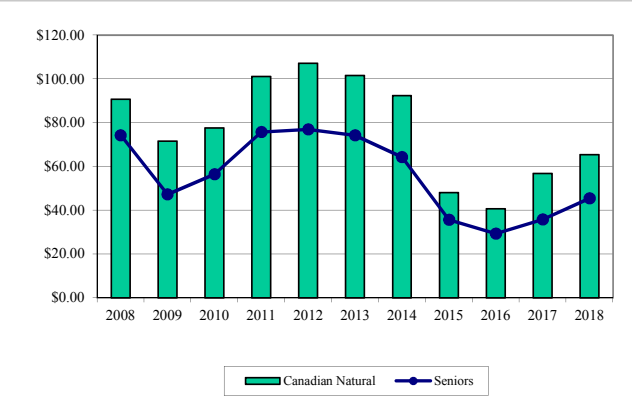


Source: BMO Capital Markets, Company Reports

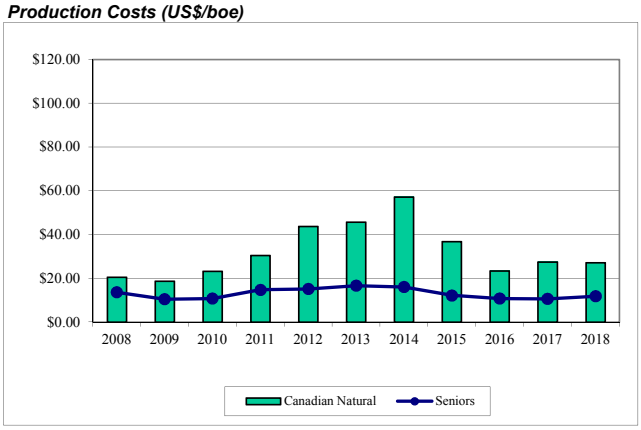
Canadian Natural Resources Limited (CNQ - TSX, NYSE) US$/boe, net

Total International

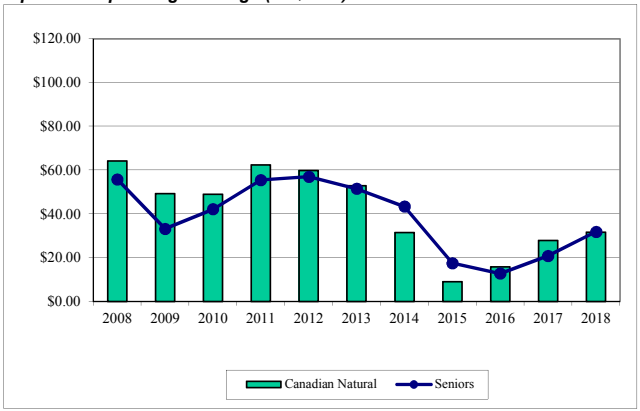
Upstream Net Revenue (US$/boe)



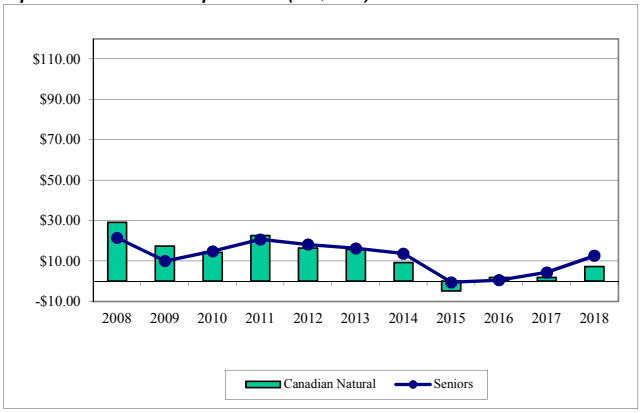
Production Costs (US$/boe)



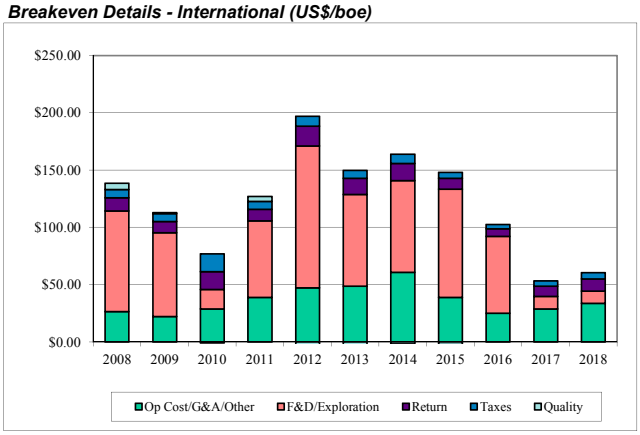
Upstream Operating Earnings (US$/boe)



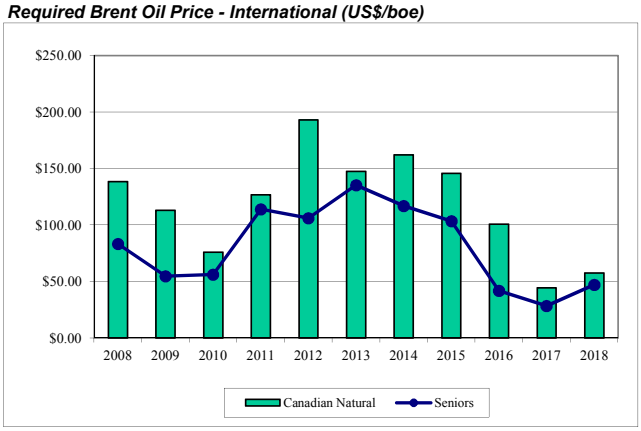
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)

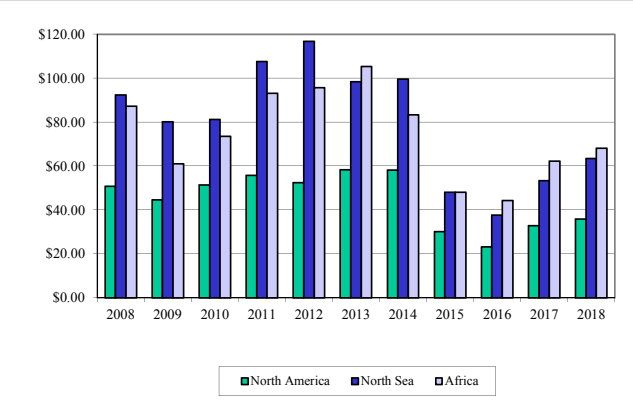


Source: BMO Capital Markets, Company Reports

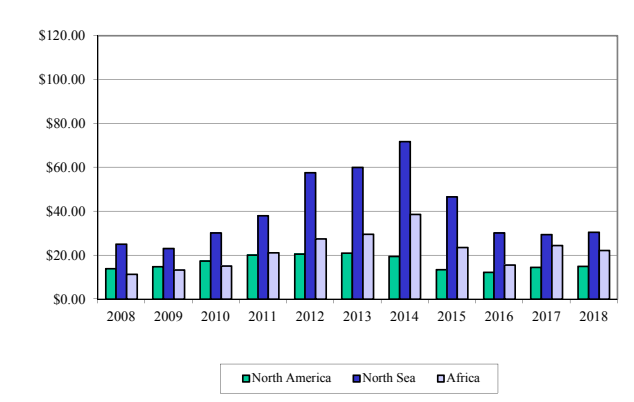
Canadian Natural Resources Limited (CNQ - TSX, NYSE) US$/boe, net

International Segments

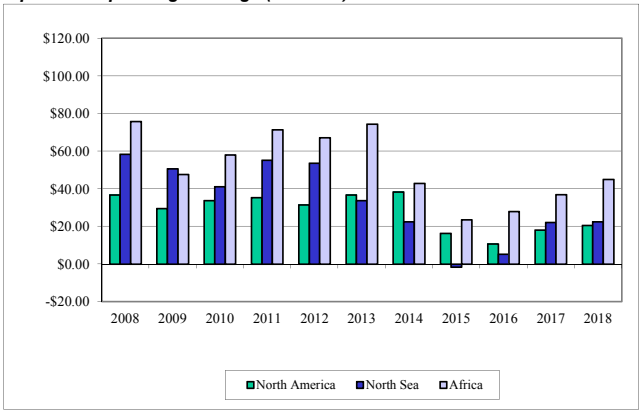
Upstream Net Revenue (US$/boe)



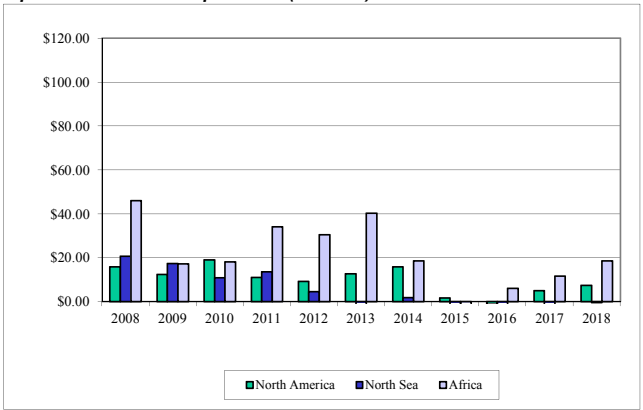
Production Costs (US$/boe)



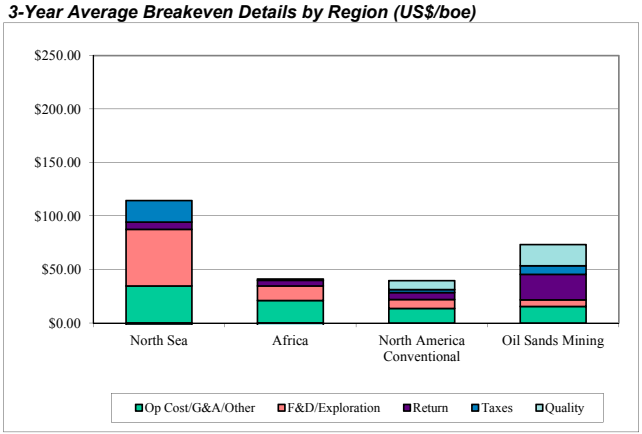
Upstream Operating Earnings (US$/boe)



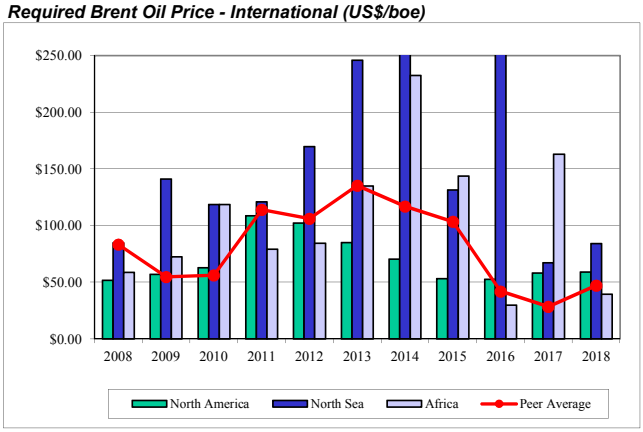
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canadian Natural Resources Limited (CNQ - TSX, NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	13,280	8,870	12,451	13,864	14,505	15,573	17,084	9,682	7,950	12,839	16,229
Midstream / Downstream Revenue	73	63	77	89	93	107	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	13,352	8,934	12,528	13,953	14,598	15,680	17,084	9,682	7,950	12,839	16,229
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	4,138	3,704	5,079	6,068	7,005	7,281	7,696	5,564	4,610	6,564	8,222
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	121	159	204	238	270	325	332	305	261	246	251
Depreciation, Depletion and Amortization	2,531	2,483	3,919	3,646	4,331	4,705	4,420	4,294	3,670	3,999	3,983
Interest, net	121	361	436	377	364	271	293	252	289	487	570
Other	(315)	500	107	(463)	(134)	(17)	(507)	(347)	(184)	(798)	340
Earnings Before Income Tax	6,690	1,646	2,679	3,956	2,611	2,949	4,676	(522)	(803)	2,215	2,718
Current Income Taxes	536	342	678	870	747	714	387	(204)	(467)	(126)	289
Future Income Taxes	1,453	(87)	353	412	(30)	30	731	181	(182)	493	430
Total Income Taxes	1,988	255	1,031	1,282	717	744	1,118	(23)	(649)	367	719
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	4,702	1,392	1,648	2,674	1,893	2,205	3,558	(499)	(154)	1,848	2,000
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	4,702	1,392	1,648	2,674	1,893	2,205	3,558	(499)	(154)	1,848	2,000
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	4,702	1,392	1,648	2,674	1,893	2,205	3,558	(499)	(154)	1,848	2,000

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	4,702	1,392	1,648	2,674	1,893	2,205	3,558	(499)	(154)	1,848	2,000
Charges and Credits Not Impacting Cash	3,983	2,409	4,300	4,058	4,301	4,735	5,151	4,475	3,488	4,492	4,413
Other	(2,112)	1,564	190	(108)	(177)	322	(26)	554	(91)	(753)	601
Cash Flow From Operations	6,573	5,364	6,138	6,623	6,017	7,262	8,683	4,530	3,243	5,588	7,014
Change in Working Capital / Other	(191)	(245)	(36)	(308)	196	(252)	(1,022)	(120)	(635)	12	797
Net Cash From Operating Activities	6,383	5,119	6,102	6,316	6,213	7,010	7,661	4,411	2,608	5,600	7,812
Total Capital Expenditures	(7,011)	(2,629)	(5,181)	(6,273)	(6,108)	(6,864)	(10,323)	(3,499)	(2,869)	(3,623)	(3,428)
Acquisitions, net	19	32	8	-	-	-	-	-	-	(6,654)	-
Other	222	(536)	125	241	177	59	200	(781)	(11)	174	(288)
Net Cash From Investing Activities	(6,771)	(3,134)	(5,048)	(6,032)	(5,931)	(6,804)	(10,123)	(4,280)	(2,879)	(10,103)	(3,716)
Net Change in Debt	529	(1,810)	(847)	(26)	326	489	3,323	843	382	5,202	(2,185)
Net Change in Common Stock	-	-	(66)	(105)	(318)	(311)	(410)	-	-	-	(989)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(196)	(198)	(293)	(382)	(444)	(508)	(865)	(980)	(573)	(965)	(1,206)
Other	60	11	160	243	157	104	422	40	422	359	256
Net Cash From Financing Activities	393	(1,998)	(1,046)	(271)	(279)	(226)	2,470	(96)	232	4,596	(4,124)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	6	(12)	9	12	3	(20)	8	34	(39)	93	(28)
Cash and Equivalents, Beginning of Year	20	24	13	22	34	36	14	20	52	13	106
Cash and Equivalents, End of Year	25	11	21	34	37	16	23	54	13	106	78

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canadian Natural Resources Limited (CNQ - TSX, NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	3,199	1,666	2,109	2,813	1,915	2,152	3,160	3,179	3,276	3,776	2,331
Net Property, Plant and Equipment	36,754	34,454	39,301	44,620	46,668	47,682	50,753	42,337	40,262	50,252	49,828
Other Assets	275	16	24	396	427	429	610	905	771	2,930	3,072
Total Assets	40,229	36,136	41,434	47,829	49,010	50,264	54,523	46,420	44,308	56,958	55,231
Total Current Liabilities	3,226	2,118	3,065	4,081	3,978	5,083	4,657	3,599	3,847	4,828	3,675
Long-term Debt	11,881	8,507	8,253	8,308	7,943	7,980	11,794	11,798	11,327	15,870	15,037
Deferred Income Taxes	6,731	6,771	7,670	8,317	8,179	7,947	8,124	7,318	6,855	8,463	8,838
Other Liabilities and Deferred Credits	1,060	1,628	2,068	3,959	4,612	4,223	3,781	2,263	2,435	3,390	3,002
Total Liabilities	22,898	19,025	21,056	24,664	24,712	25,234	28,356	24,977	24,464	32,551	30,553
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	2,611	2,496	3,056	3,548	3,711	3,743	4,014	3,556	3,529	7,024	7,196
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	14,473	14,707	17,484	19,591	20,529	21,246	22,106	17,828	16,263	17,436	17,388
Other / Comprehensive Income (Loss)	247	(92)	(162)	26	58	41	46	59	53	(52)	94
Total Shareholders' Equity	17,331	17,111	20,378	23,165	24,298	25,030	26,167	21,443	19,845	24,407	24,678
Total Liabilities and Shareholders' Equity	40,229	36,136	41,434	47,829	49,010	50,264	54,523	46,420	44,308	56,958	55,231
Return on Capital Employed (ROCE)	**18.0%**	**6.1%**	**6.9%**	**9.4%**	**6.4%**	**6.9%**	**10.0%**	**-0.8%**	**0.2%**	**6.1%**	**5.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	10,053	9,252	11,219	11,770	12,027	13,293	14,981	8,963	6,749	11,138	13,586	31,474	55,418
Production Costs	2,620	2,924	3,699	4,093	4,727	4,890	5,289	4,259	3,592	4,943	5,664	14,198	23,747
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	2,533	2,504	1,797	4,024	4,324	4,697	4,412	4,285	3,662	3,992	3,973	11,626	20,323
G&A/Other	208	154	198	263	165	166	175	135	107	126	235	469	779
Pre-tax Results Of Operations	4,692	3,670	5,524	3,389	2,812	3,540	5,105	283	-612	2,077	3,715	5,180	10,569
Income Taxes	1,521	1,163	1,692	1,007	733	711	1,191	-103	-357	500	1,033	1,176	2,263
Results Of Operations	3,171	2,507	3,832	2,382	2,078	2,829	3,914	387	-255	1,578	2,682	4,004	8,306

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	7,665	7,345	9,393	9,712	10,616	11,921	13,934	8,115	5,886	10,088	12,399	28,374	50,423
Production Costs	2,083	2,428	3,154	3,474	4,151	4,274	4,643	3,609	3,098	4,435	5,172	12,706	20,958
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	2,109	1,979	1,310	3,529	3,862	4,031	4,073	3,767	3,118	3,441	3,619	10,178	18,018
G&A/Other	46	55	66	91	117	122	131	97	72	99	114	285	513
Pre-tax Results Of Operations	3,427	2,883	4,863	2,618	2,486	3,493	5,087	641	-402	2,113	3,494	5,205	10,934
Income Taxes	1,021	839	1,366	696	623	877	1,278	168	-108	571	944	1,407	2,852
Results Of Operations	2,406	2,044	3,497	1,922	1,862	2,616	3,809	474	-294	1,542	2,550	3,798	8,082

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	2,388	1,908	1,826	2,058	1,412	1,372	1,047	848	863	1,050	1,187	3,100	4,995
Production Costs	538	497	545	619	576	616	647	650	493	507	492	1,492	2,789
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	424	525	487	496	461	666	339	518	544	551	353	1,448	2,304
G&A/Other	162	100	132	172	48	44	43	38	36	28	121	184	266
Pre-tax Results Of Operations	1,265	787	661	771	326	47	18	-358	-210	-35	221	-25	-365
Income Taxes	499	324	326	311	110	-166	-87	-271	-249	-71	89	-231	-589
Results Of Operations	765	463	335	460	216	213	105	-87	39	35	132	206	224

Note: Converted to US$ from CAD
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canadian Natural Resources Limited (CNQ - TSX, NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide - Including Oil Sands													
Net Revenue	$56.74	$48.32	$54.33	$60.51	$55.77	$60.93	$59.69	$31.18	$24.51	$34.22	$37.29	$32.61	$36.86
Production Costs	$14.79	$15.27	$17.91	$21.04	$21.92	$22.41	$21.07	$14.82	$13.04	$15.18	$15.55	$14.71	$15.79
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$14.29	$13.08	$8.70	$20.69	$20.05	$21.53	$17.58	$14.90	$13.30	$12.26	$10.90	$12.05	$13.52
G&A/Other	$1.18	$0.80	$0.96	$1.35	$0.77	$0.76	$0.70	$0.47	$0.39	$0.39	$0.65	$0.49	$0.52
Pre-tax Results Of Operations	$26.48	$19.16	$26.75	$17.42	$13.04	$16.23	$20.34	$0.99	-$2.22	$6.38	$10.20	$5.37	$7.03
Income Taxes	$8.58	$6.07	$8.19	$5.18	$3.40	$3.26	$4.74	-$0.36	-$1.30	$1.54	$2.83	$1.22	$1.51
Results Of Operations	$17.90	$13.09	$18.56	$12.25	$9.64	$12.97	$15.60	$1.35	-$0.93	$4.85	$7.36	$4.15	$5.52

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America - Including Oil Sands													
Net Revenue	$50.82	$44.56	$51.33	$55.76	$52.42	$58.24	$58.14	$30.07	$23.16	$32.86	$35.82	$31.27	$35.59
Production Costs	$13.81	$14.73	$17.23	$19.95	$20.50	$20.88	$19.37	$13.38	$12.19	$14.45	$14.94	$14.00	$14.79
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$13.98	$12.01	$7.16	$20.26	$19.07	$19.69	$16.99	$13.96	$12.27	$11.21	$10.45	$11.22	$12.72
G&A/Other	$0.31	$0.33	$0.36	$0.52	$0.58	$0.60	$0.55	$0.36	$0.28	$0.32	$0.33	$0.31	$0.36
Pre-tax Results Of Operations	$22.72	$17.49	$26.57	$15.03	$12.27	$17.07	$21.23	$2.38	-$1.58	$6.88	$10.09	$5.74	$7.72
Income Taxes	$6.77	$5.09	$7.47	$4.00	$3.08	$4.29	$5.33	$0.62	-$0.43	$1.86	$2.73	$1.55	$2.01
Results Of Operations	$15.95	$12.40	$19.11	$11.04	$9.20	$12.78	$15.89	$1.76	-$1.16	$5.02	$7.37	$4.19	$5.70

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$90.69	$71.55	$77.68	$101.20	$107.23	$101.65	$92.38	$48.01	$40.76	$56.77	$65.34	$53.60	$57.53
Production Costs	$20.42	$18.63	$23.18	$30.45	$43.77	$45.61	$57.06	$36.79	$23.31	$27.43	$27.06	$25.80	$32.12
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$16.08	$19.69	$20.74	$24.38	$35.03	$49.35	$29.89	$29.30	$25.70	$29.76	$19.46	$25.04	$26.54
G&A/Other	$6.16	$3.73	$5.62	$8.46	$3.65	$3.24	$3.84	$2.17	$1.68	$1.50	$6.67	$3.19	$3.07
Pre-tax Results Of Operations	$48.03	$29.50	$28.14	$37.91	$24.77	$3.45	$1.60	-$20.26	-$9.92	-$1.92	$12.15	-$0.43	-$4.20
Income Taxes	$18.97	$12.14	$13.87	$15.27	$8.36	-$12.30	-$7.67	-$15.34	-$11.74	-$3.83	$4.89	-$3.99	-$6.78
Results Of Operations	$29.07	$17.35	$14.27	$22.64	$16.42	$15.76	$9.27	-$4.92	$1.82	$1.92	$7.27	$3.56	$2.58

Operating Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North Sea													
Net Revenue	$92.42	$80.12	$81.19	$107.65	$116.86	$98.39	$99.53	$47.99	$37.66	$53.34	$63.48	$51.32	$56.75
Production Costs	$24.93	$23.06	$30.13	$37.94	$57.52	$59.90	$71.65	$46.60	$30.06	$29.32	$30.42	$29.93	$38.60
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$16.92	$15.68	$19.09	$22.14	$41.33	$74.81	$38.47	$29.89	$30.53	$34.63	$18.31	$27.97	$29.69
G&A/Other	$9.08	$6.55	$9.97	$14.55	$5.72	$4.74	$5.43	$3.00	$2.33	$1.84	$10.54	$4.82	$4.53
Pre-tax Results Of Operations	$41.48	$34.83	$22.00	$33.03	$12.29	-$41.06	-$16.02	-$31.51	-$25.26	-$12.45	$4.20	-$11.40	-$16.07
Income Taxes	$20.74	$17.42	$11.04	$19.46	$7.68	-$35.10	-$17.88	-$25.11	-$23.40	-$8.16	$4.56	-$9.20	-$13.54
Results Of Operations	$20.74	$17.42	$10.96	$13.57	$4.61	-$5.96	$1.86	-$6.39	-$1.87	-$4.29	-$0.36	-$2.20	-$2.54

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$87.18	$61.07	$73.59	$93.07	$95.73	$105.35	$83.32	$48.03	$44.33	$62.19	$68.10	$56.75	$58.58
Production Costs	$11.21	$13.21	$15.06	$21.02	$27.35	$29.44	$38.58	$23.49	$15.52	$24.42	$22.10	$20.13	$23.32
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$14.37	$24.59	$22.68	$27.20	$27.52	$20.55	$19.02	$28.51	$20.13	$22.06	$21.15	$21.01	$22.26
G&A/Other	$0.22	$0.29	$0.54	$0.79	$1.17	$1.53	$1.81	$1.04	$0.92	$0.97	$0.95	$0.94	$1.08
Pre-tax Results Of Operations	$61.38	$22.98	$35.32	$44.06	$39.69	$53.83	$23.91	-$5.01	$7.76	$14.74	$23.89	$14.68	$11.92
Income Taxes	$15.35	$5.70	$17.17	$10.00	$9.17	$13.49	$5.25	-$2.09	$1.69	$3.01	$5.37	$3.19	$2.39
Results Of Operations	$46.04	$17.28	$18.15	$34.06	$30.52	$40.33	$18.66	-$2.92	$6.07	$11.73	$18.52	$11.49	$9.53

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Oil Sands Mining													
Net Revenue	na	$59.56	$77.65	$105.57	$91.19	$95.65	$92.02	$48.32	$44.20	$53.24	$14.42	$32.24	$40.19
Production Costs	na	$35.43	$38.51	$85.92	$52.20	$45.23	$40.14	$25.17	$23.03	$25.28	$6.16	$15.28	$18.96
Exploration	na	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	na	$9.15	$11.11	$19.22	$14.91	$16.15	$14.21	$10.00	$11.11	$9.41	$2.17	$6.02	$7.31
G&A/Other	na	$1.03	$0.67	$1.45	$1.07	$0.94	$1.12	$0.55	$0.49	$0.37	$0.08	$0.24	$0.37
Pre-tax Results Of Operations	na	$13.95	$27.37	-$1.01	$23.01	$33.33	$36.56	$12.60	$9.57	$18.18	$6.00	$10.70	$13.55
Income Taxes	na	$4.04	$7.66	-$0.27	$6.10	$8.33	$9.14	$3.15	$2.39	$4.55	$1.50	$2.68	$3.39
Results Of Operations	na	$9.90	$19.71	-$0.74	$16.92	$24.99	$27.42	$9.45	$7.18	$13.64	$4.50	$8.03	$10.16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide Conventional													
Net Revenue	$56.74	$47.15	$50.05	$57.02	$50.05	$54.30	$53.92	$28.08	$20.66	$25.78	$52.94	$32.77	$35.75
Production Costs	$14.79	$13.18	$14.13	$16.01	$17.02	$18.05	$17.67	$12.95	$11.09	$10.71	$21.96	$14.46	$14.74
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$14.29	$13.48	$8.26	$20.80	$20.88	$22.56	$18.18	$15.79	$13.73	$13.53	$16.88	$14.67	$15.58
G&A/Other	$1.18	$0.78	$1.01	$1.35	$0.72	$0.73	$0.62	$0.46	$0.37	$0.40	$1.03	$0.59	$0.57
Pre-tax Results Of Operations	$26.48	$19.70	$26.64	$18.85	$11.43	$12.96	$17.45	-$1.11	-$4.53	$1.15	$13.07	$3.04	$4.86
Income Taxes	$8.58	$6.28	$8.29	$5.60	$2.96	$2.29	$3.96	-$0.99	-$2.02	$0.20	$3.75	$0.58	$0.88
Results Of Operations	$17.90	$13.42	$18.35	$13.26	$8.46	$10.67	$13.49	-$0.12	-$2.51	$0.95	$9.32	$2.46	$3.98

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America Conventional													
Net Revenue	$50.82	$42.72	$45.75	$51.41	$45.68	$50.53	$51.76	$26.52	$18.63	$23.01	$51.80	$30.81	$33.93
Production Costs	$13.81	$12.19	$12.73	$14.18	$14.98	$15.86	$15.46	$11.08	$9.86	$9.21	$21.50	$13.39	$13.29
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$13.98	$12.36	$6.32	$20.35	$19.80	$20.42	$17.52	$14.73	$12.52	$12.08	$16.64	$13.70	$14.66
G&A/Other	$0.31	$0.25	$0.30	$0.44	$0.49	$0.53	$0.44	$0.32	$0.24	$0.30	$0.51	$0.35	$0.36
Pre-tax Results Of Operations	$22.72	$17.92	$26.41	$16.43	$10.41	$13.72	$18.34	$0.38	-$3.98	$1.42	$13.15	$3.37	$5.62
Income Taxes	$6.77	$5.22	$7.42	$4.37	$2.55	$3.45	$4.61	$0.13	-$1.03	$0.56	$3.64	$1.01	$1.52
Results Of Operations	$15.95	$12.71	$18.98	$12.07	$7.85	$10.26	$13.72	$0.26	-$2.95	$0.86	$9.51	$2.35	$4.10

Note: Converted to US$ from CAD
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canadian Natural Resources Limited (CNQ - TSX, NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	1,252.1	1,241.1	1,191.8	1,208.2	1,194.5	1,104.1	1,430.1	1,668.5	1,632.9	1,586.3	1,484.9	1,568.0	1,560.5
Liquids Production (b/d)	276,712	317,808	367,123	331,507	391,781	413,699	449,315	509,589	482,192	627,397	750,685	620,091	563,836
Total Production (boe/d)	485,388	524,658	565,753	532,877	590,868	597,717	687,671	787,671	754,338	891,781	998,174	881,431	823,927
% Gas Production	43%	39%	35%	38%	34%	31%	35%	35%	36%	30%	25%	30%	32%
% Oil Production	57%	61%	65%	62%	66%	69%	65%	65%	64%	70%	75%	70%	68%
Proven Reserves:													
Gas Reserves (bcf)	3,684.0	3,179.0	3,575.0	3,650.0	2,778.0	3,363.0	5,135.0	4,582.0	4,644.0	5,240.0	4,354.0	4,746.0	4,791.0
Oil Reserves (mmbbls)	1,346.0	3,027.0	3,228.0	3,403.0	3,661.0	3,685.0	3,697.0	4,209.0	4,514.0	7,091.0	7,919.0	6,508.0	5,486.0
Total Proven Reserves (mmboe)	1,960.0	3,556.8	3,823.8	4,011.3	4,124.0	4,245.5	4,552.8	4,972.7	5,288.0	7,964.3	8,644.7	7,299.0	6,284.5
% Gas Reserves	31%	15%	16%	15%	11%	13%	19%	15%	15%	11%	8%	11%	13%
% Oil Reserves	69%	85%	84%	85%	89%	87%	81%	85%	85%	89%	92%	89%	87%
Proven Reserve Life Index	11.1	18.6	18.5	20.6	19.1	19.5	18.1	17.3	19.2	24.5	23.7	22.5	20.6
Proven Reserve Additions:													
Gas Additions (bcf)	475.0	(52.0)	831.0	516.0	-436.0	988.0	2,294.0	56.0	658.0	1,175.0	-344.0	1,489.0	3,839.0
Oil Additions (mmbbls)	89.0	(149.0)	335.0	296.0	401.0	173.0	176.0	698.0	481.0	2,806.0	1,102.0	4,389.0	5,263.0
Total Additions (mmboe)	168.2	(157.7)	473.5	382.0	328.3	337.7	558.3	707.3	590.7	3,001.8	1,044.7	4,637.2	5,902.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	110.8	130.2	136.7	159.7	140.2	136.3	255.7	348.8	140.5	145.3	1,060.0	1,345.8	1,950.3
Acquisitions	12.8	3.5	167.7	68.5	5.7	32.8	258.8	77.3	32.2	2,353.7	27.2	2,413.0	2,749.2
Dispositions	(0.2)	(1.0)	0.0	-0.2	-0.2	-0.2	0.0	-12.8	-0.8	0.0	-4.5	(5.3)	(18.2)
Revisions of Estimates	44.7	(290.3)	169.2	154.0	182.7	168.7	43.8	294.0	418.8	502.8	-38.0	883.7	1,221.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	65.9%	-82.6%	28.9%	41.8%	42.7%	40.4%	45.8%	49.3%	23.8%	4.8%	101.5%	29.0%	33.0%
Acquisitions	7.6%	-2.2%	35.4%	17.9%	1.7%	9.7%	46.4%	10.9%	5.4%	78.4%	2.6%	52.0%	46.6%
Dispositions	-0.1%	0.6%	0.0%	0.0%	-0.1%	0.0%	0.0%	-1.8%	-0.1%	0.0%	-0.4%	-0.1%	-0.3%
Revisions of Estimates	26.6%	184.1%	35.7%	40.3%	55.6%	50.0%	7.9%	41.6%	70.9%	16.8%	-3.6%	19.1%	20.7%
Additions as % of Production:													
Gas	103.9%	-11.5%	191.0%	117.0%	-100.0%	245.2%	439.5%	9.2%	110.4%	202.9%	-63.5%	86.7%	134.8%
Oil	88.1%	-128.4%	250.0%	244.6%	280.4%	114.6%	107.3%	375.3%	273.3%	1225.3%	402.2%	646.4%	511.5%
Total	94.9%	-82.3%	229.3%	196.4%	152.2%	154.8%	222.4%	246.0%	214.5%	922.2%	286.7%	480.5%	392.6%
Additions as % of Reserves:													
Gas	12.9%	-1.6%	23.2%	14.1%	-15.7%	29.4%	44.7%	1.2%	14.2%	22.4%	-7.9%	31.4%	80.1%
Oil	6.6%	-4.9%	10.4%	8.7%	11.0%	4.7%	4.8%	16.6%	10.7%	39.6%	13.9%	67.4%	95.9%
Total	8.6%	-4.4%	12.4%	9.5%	8.0%	8.0%	12.3%	14.2%	11.2%	37.7%	12.1%	63.5%	93.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$139.6	$185.0	$271.9	$255.9	$262.2	$22.3	$365.9	$95.5	$19.6	$97.9	$116.5	$234.1	$695.6
Development	$2,619.4	$2,612.6	$3,165.6	$5,938.4	$6,407.9	$6,357.5	$6,286.4	$2,648.6	$3,344.6	$3,168.4	$2,753.1	$9,266.1	$18,201.1
Net Acquisitions	$398.0	$66.1	$1,985.8	$1,083.5	$191.1	$338.0	$3,801.2	-$784.7	$37.8	$11,884.0	$456.9	$12,378.7	$15,395.2
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$3,157.0	$2,863.6	$5,423.4	$7,277.8	$6,861.2	$6,717.8	$10,453.6	$1,959.4	$3,402.0	$15,150.4	$3,326.6	$21,878.9	$34,291.9
Expenditures as % of Total:													
Exploration	4.4%	6.5%	5.0%	3.5%	3.8%	0.3%	3.5%	4.9%	0.6%	0.6%	3.5%	1.1%	2.0%
Development	83.0%	91.2%	58.4%	81.6%	93.4%	94.6%	60.1%	135.2%	98.3%	20.9%	82.8%	42.4%	53.1%
Net Acquisitions	12.6%	2.3%	36.6%	14.9%	2.8%	5.0%	36.4%	-40.0%	1.1%	78.4%	13.7%	56.6%	44.9%
Cashflow (US$million)	$6,573.4	$5,364.4	$6,138.1	$6,623.3	$6,016.7	$7,261.7	$8,682.9	$4,530.4	$3,243.3	$5,588.1	$7,014.3	$15,845.7	$29,059.1
Cashflow (US$/boe)	$37.10	$28.01	$29.72	$34.05	$27.90	$33.29	$34.59	$15.76	$11.78	$17.17	$19.25	$16.42	$19.33
Recycle Ratio*	3.0x	2.7x	2.7x	1.4x	1.3x	2.5x	2.9x	1.8x	0.0x	2.5x	2.6x	2.4x	2.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$17.74	-$17.47	$11.24	$19.75	$20.66	$20.92	$22.21	$4.27	$6.01	$5.04	$2.81	$4.26	$5.96
Net Acquisition Costs	$31.42	$26.43	$11.84	$15.86	$34.75	$10.35	$14.69	-$12.17	$1.21	$5.05	$20.16	$5.14	$5.64
All Sources (incl. revisions)	$18.77	-$18.16	$11.45	$19.05	$20.90	$19.89	$18.72	$2.77	$5.76	$5.05	$3.18	$4.72	$5.81
All Sources - Adjusted Oil Sands*	$12.30	$10.37	$11.14	$24.85	$21.33	$13.50	$11.89	$8.92	$0.00	$6.74	$7.37	$6.74	$7.37
Exploration & Development (excl. revisions)	$24.89	$21.49	$25.15	$38.80	$47.59	$46.80	$26.02	$7.87	$23.94	$22.47	$2.71	$7.06	$9.69
Net Acquisition Costs	$31.42	$26.43	$11.84	$15.86	$34.75	$10.35	$14.69	-$12.17	$1.21	$5.05	$20.16	$5.13	$5.60
All Sources (excl. revisions)	$25.56	$21.59	$17.82	$31.92	$47.10	$39.75	$20.32	$4.74	$19.80	$6.06	$3.07	$5.83	$7.33
Geographically Segmented Costs													
North America Conventional	$12.30	$11.69	$11.18	$30.53	$28.34	$10.93	$10.21	$7.93	$0.00	$8.20	$7.50	$8.20	$7.50
Oil Sands Mining - Adjusted*	na	$9.15	$11.11	$19.22	$14.91	$16.15	$14.21	$10.00	$0.00	$6.02	$7.31	$6.02	$7.31
North America - Including Oil Sands*	$12.30	$10.37	$11.14	$24.85	$21.33	$13.50	$11.89	$8.92	$0.00	$6.74	$7.37	$6.74	$7.37
North Sea	-$4.68	-$206.78	$3.33	$159.17	-$133.52	$51.25	-$27.51	-$0.11	-$8.35	$7.76	$10.07	$19.50	-$12.31
West Africa	$27.85	-$67.88	-$19.64	-$9.10	$44.53	-$244.74	$169.06	$328.33	$8.21	$134.17	$11.99	$13.69	$39.62

Notes: Reserve estimates reported after royalties; *We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions. Blended with Conventional F&D results for North American Segment
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canadian Natural Resources Limited (CNQ - TSX, NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	14.79	15.27	17.91	21.04	21.92	22.41	21.07	14.82	13.04	15.18	15.55	14.71	15.79
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.18	0.80	0.96	1.35	0.77	0.76	0.70	0.47	0.39	0.39	0.65	0.49	0.52
F&D Costs	12.30	10.37	11.14	24.85	21.33	13.50	11.89	8.92	7.44	7.85	5.81	6.99	7.57
Return on Capital	8.65	12.80	13.68	34.73	27.29	17.64	14.28	10.17	9.57	11.81	8.75	10.03	10.05
Income Taxes	4.15	5.93	6.04	14.67	9.63	4.43	4.34	3.09	4.10	3.74	3.37	3.76	3.48
Breakeven Oil Price	41.07	45.18	49.74	96.65	80.94	58.74	52.28	37.47	34.55	38.97	34.12	35.98	37.41
Quality Differential	12.33	5.24	7.58	17.11	23.26	21.74	15.38	11.34	9.84	9.71	16.27	11.94	12.51
Required Brent Price	53.39	50.42	57.32	113.77	104.20	80.48	67.65	48.81	44.39	48.67	50.39	47.92	49.91

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	13.81	14.73	17.23	19.95	20.50	20.88	19.37	13.38	12.19	14.45	14.94	14.00	14.79
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	0.31	0.33	0.36	0.52	0.58	0.60	0.55	0.36	0.28	0.32	0.33	0.31	0.36
F&D Costs	12.30	10.37	11.14	24.85	21.33	13.50	11.89	8.92	7.44	7.85	5.81	6.99	7.57
Return on Capital	8.34	18.09	18.31	32.60	25.37	20.50	17.73	15.35	15.93	17.95	15.11	16.36	15.91
Income Taxes	3.54	7.42	7.15	11.80	8.49	6.87	5.95	5.43	5.86	6.64	5.59	6.04	5.72
Breakeven Oil Price	38.29	50.94	54.20	89.72	76.27	62.35	55.49	43.44	41.70	47.21	41.78	43.70	44.35
Quality Differential	13.55	5.92	8.58	18.80	25.83	22.79	14.86	9.78	10.81	10.82	17.33	12.98	12.72
Required Brent Price	51.84	56.85	62.77	108.51	102.10	85.14	70.35	53.23	52.51	58.03	59.10	56.69	57.07

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	20.42	18.63	23.18	30.45	43.77	45.61	57.06	36.79	23.31	27.43	27.06	25.80	32.12
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	6.16	3.73	5.62	8.46	3.65	3.24	3.84	2.17	1.68	1.50	6.67	3.19	3.07
F&D Costs	87.94	72.93	16.99	66.81	123.81	79.89	79.89	94.53	67.13	11.00	10.76	29.63	52.66
Return on Capital	11.34	9.85	15.74	10.25	17.15	14.06	15.04	9.45	6.71	8.77	10.47	5.37	7.94
Income Taxes	7.40	6.89	15.29	6.92	8.73	7.16	8.10	5.09	3.61	4.72	5.64	2.89	4.27
Breakeven Oil Price	133.26	112.04	76.83	122.89	197.12	149.96	163.93	148.04	102.44	53.41	60.60	66.89	100.06
Quality Differential	5.34	1.05	(0.79)	4.06	(3.93)	(2.52)	(1.68)	(2.29)	(1.51)	(8.91)	(3.09)	(4.50)	(3.50)
Required Brent Price	138.60	113.09	76.04	126.95	193.19	147.45	162.24	145.74	100.94	44.50	57.51	62.39	96.56

Operating Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North Sea													
Operating Costs	24.93	23.06	30.13	37.94	57.52	59.90	71.65	46.60	30.06	29.32	30.42	29.93	38.60
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	9.08	6.55	9.97	14.55	5.72	4.74	5.43	3.00	2.33	1.84	10.54	4.82	4.53
F&D Costs	31.05	85.23	3.33	39.87	42.81	51.25	51.25	48.43	140.52	7.76	10.07	52.78	51.61
Return on Capital	7.68	11.54	39.25	11.42	26.64	17.69	19.71	7.29	14.05	11.79	11.76	6.85	8.83
Income Taxes	7.68	11.54	39.52	16.37	44.39	104.11	116.04	28.63	176.15	22.45	22.40	20.12	30.91
Breakeven Oil Price	80.42	137.92	122.19	120.14	177.08	237.68	264.07	133.96	363.13	73.16	85.20	114.51	134.48
Quality Differential	4.22	3.20	(3.68)	0.75	(7.37)	8.34	(4.03)	(2.49)	1.32	(6.10)	(0.95)	(1.91)	(2.45)
Required Brent Price	84.64	141.12	118.51	120.89	169.71	246.02	260.04	131.47	364.45	67.06	84.24	112.60	132.03

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	11.21	13.21	15.06	21.02	27.35	29.44	38.58	23.49	15.52	24.42	22.10	20.13	23.32
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	0.22	0.29	0.54	0.79	1.17	1.53	1.81	1.04	0.92	0.97	0.95	0.94	1.08
F&D Costs	27.85	50.95	75.38	39.45	44.53	96.78	169.06	103.46	8.21	134.17	11.99	13.69	39.62
Return on Capital	8.77	7.29	12.77	7.57	8.50	16.54	16.91	10.35	7.68	13.42	8.33	5.02	6.31
Income Taxes	2.92	2.40	12.09	2.22	2.56	5.53	4.76	7.39	2.14	3.45	2.42	1.38	2.18
Breakeven Oil Price	50.97	74.14	115.84	71.05	84.10	149.82	231.12	145.73	34.48	176.43	45.79	41.16	72.51
Quality Differential	7.65	(1.58)	2.60	8.24	0.18	(14.80)	1.30	(2.03)	(4.76)	(13.37)	(6.24)	(8.12)	(5.02)
Required Brent Price	58.62	72.56	118.44	79.28	84.28	135.03	232.42	143.70	29.71	163.06	39.56	33.04	67.49

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America Conventional													
Operating Costs	13.81	12.19	12.73	14.18	14.98	15.86	15.46	11.08	9.86	9.21	21.51	13.40	13.29
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	0.31	0.25	0.30	0.44	0.49	0.53	0.44	0.32	0.24	0.30	0.53	0.35	0.36
F&D Costs	12.30	11.69	11.18	30.53	28.34	10.93	10.21	7.93	3.81	5.10	11.66	8.20	7.50
Return on Capital	4.89	4.95	5.62	6.04	5.59	5.57	5.82	5.28	6.51	6.98	6.71	6.43	6.13
Income Taxes	2.07	2.03	2.20	2.19	1.82	1.87	1.96	2.64	2.28	4.54	2.53	2.87	2.66
Breakeven Oil Price	33.38	31.11	32.01	53.38	51.23	34.77	33.89	27.25	22.70	26.14	42.94	31.25	29.94
Quality Differential	13.55	6.26	9.91	19.80	25.81	25.45	17.85	13.59	12.90	15.31	(4.41)	7.93	11.05
Required Brent Price	46.92	37.37	41.93	73.18	77.04	60.22	51.74	40.84	35.61	41.45	38.53	39.19	40.99

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Canada - Oil Sands Mining													
Operating Costs	-	35.43	38.51	85.92	52.20	45.23	40.14	25.17	23.03	25.28	6.15	15.27	18.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	1.03	0.67	1.45	1.07	0.94	1.12	0.55	0.49	0.37	0.06	0.23	0.36
F&D Costs	-	9.15	11.11	19.22	14.91	16.15	14.21	10.00	11.11	9.41	2.92	6.39	7.61
Return on Capital	-	22.41	20.78	19.62	20.68	20.58	21.13	22.29	21.75	22.58	23.73	24.02	23.58
Income Taxes	-	9.15	8.08	7.07	7.46	6.86	7.04	7.43	7.25	7.53	7.91	8.01	7.86
Breakeven Oil Price	-	77.17	79.14	133.27	96.32	89.76	83.64	65.44	63.63	65.17	40.77	53.93	58.36
Quality Differential	-	3.07	2.69	5.38	20.50	13.08	7.36	5.23	0.92	1.55	58.64	3.07	3.07
Required Brent Price	-	80.24	81.83	138.65	116.82	102.85	91.00	70.67	64.55	66.72	99.42	57.00	61.44

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canadian Natural Resources Limited (CNQ - TSX, NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.76	19.29	22.98	28.78	29.89	28.84	27.00	18.52	17.06	19.09	18.85	18.44	19.86
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.41	1.02	1.23	1.85	1.04	0.98	0.89	0.59	0.51	0.49	0.78	0.61	0.65
F&D Costs (1-Year)	14.70	10.21	12.68	31.09	17.84	16.37	15.13	10.58	8.25	8.93	4.55	7.47	8.23
Return on Capital	10.85	15.09	18.53	54.78	29.16	25.44	20.95	13.96	12.87	13.93	7.11	11.68	12.17
Income Taxes	5.21	7.00	8.18	23.15	10.29	6.39	6.37	4.25	5.52	4.41	2.74	4.38	4.21
Breakeven Oil Price	**49.94**	**52.61**	**63.60**	**139.65**	**88.23**	**78.02**	**70.34**	**47.91**	**44.21**	**46.85**	**34.02**	**42.57**	**45.12**
Quality Differential	14.80	6.62	9.72	23.40	31.72	27.96	19.70	14.18	12.86	12.20	20.00	15.02	15.79
Required Brent Price	**64.74**	**59.23**	**73.32**	**163.05**	**119.94**	**105.99**	**90.05**	**62.08**	**57.07**	**59.05**	**54.02**	**57.59**	**60.90**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.76	19.29	22.98	28.78	29.89	28.84	27.00	18.52	17.06	19.09	18.85	18.44	19.86
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.41	1.02	1.23	1.85	1.04	0.98	0.89	0.59	0.51	0.49	0.78	0.61	0.65
F&D Costs (1-Year)	48.35	0.34	35.38	53.79	27.68	14.56	16.96	10.28	8.19	9.17	4.86	7.71	9.89
Return on Capital	35.73	0.48	49.13	94.97	44.65	21.72	22.73	13.37	12.27	13.71	7.22	11.55	13.83
Income Taxes	17.13	0.22	21.70	40.12	15.76	5.46	6.92	4.07	5.26	4.34	2.78	4.34	4.78
Breakeven Oil Price	**120.38**	**21.35**	**130.42**	**219.51**	**119.02**	**71.56**	**74.50**	**46.83**	**43.29**	**46.79**	**34.50**	**42.65**	**49.02**
Quality Differential	14.80	6.62	9.72	23.40	31.72	27.96	19.70	14.18	12.86	12.20	20.00	15.02	15.79
Required Brent Price	**135.19**	**27.97**	**140.14**	**242.91**	**150.74**	**99.52**	**94.21**	**61.01**	**56.16**	**58.99**	**54.50**	**57.67**	**64.81**

Source: BMO Capital Markets, Company Reports

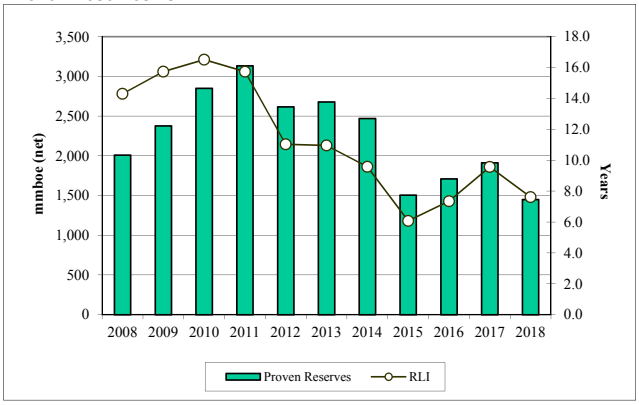
See pages F1 to F4 for analyst coverage.

Chesapeake Energy Corp. (CHK - NYSE) US$, net

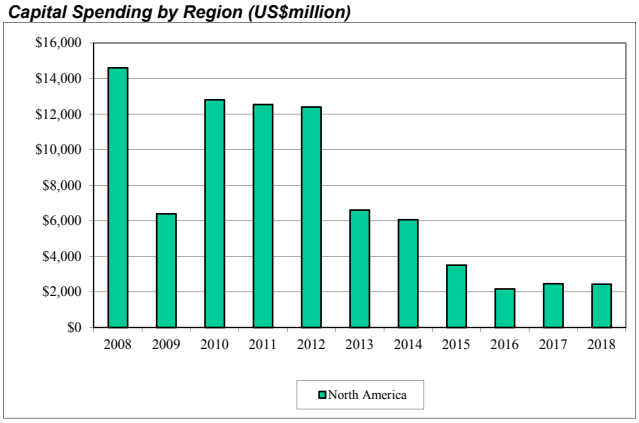
- Chesapeake reported strong operating performance in 2018 and its results of operations jumped to $11.93/boe compared to $9.58/boe in 2017.
- One-year F&D costs increased to $8.55/boe from $5.18/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $16.53/boe from $17.33/boe, while the costs for PD reserves also decreased to $10.69/boe from $28.76/boe the previous year.
- Chesapeake's 2018 results imply a Brent breakeven oil price of $45.01/boe on a realized ratio basis on total proved reserves, while its PD costs imply a breakeven of $35.61/boe.
- Chesapeake reported ROCE of 11.4% in 2018 versus 11.0% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

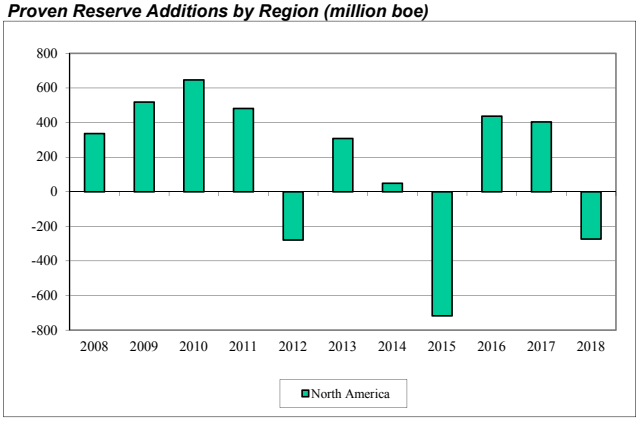
Proven Reserves vs RLI



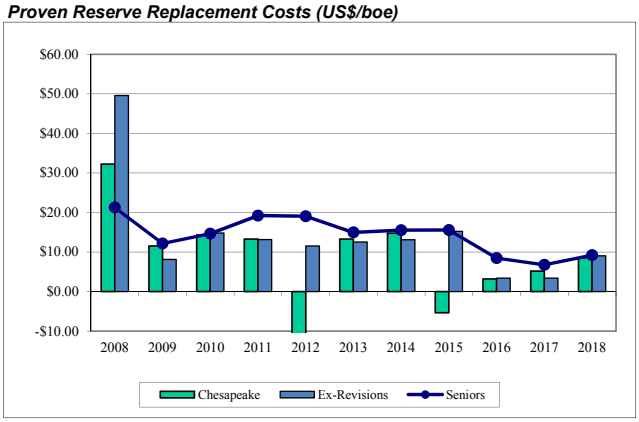
Capital Spending by Region (US$million)



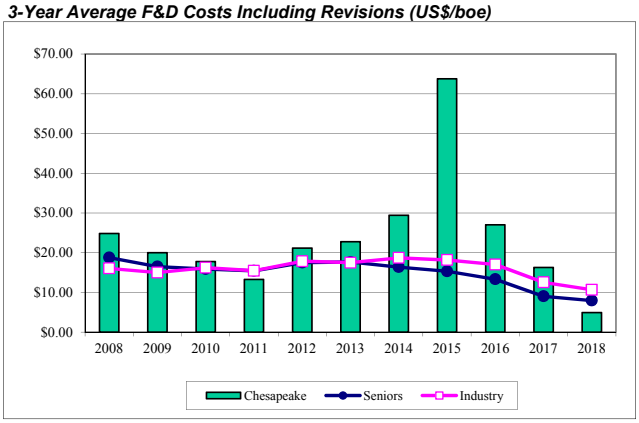
Proven Reserve Additions by Region (million boe)



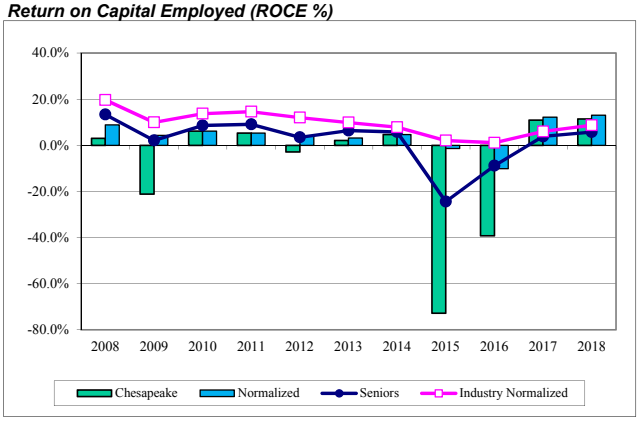
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

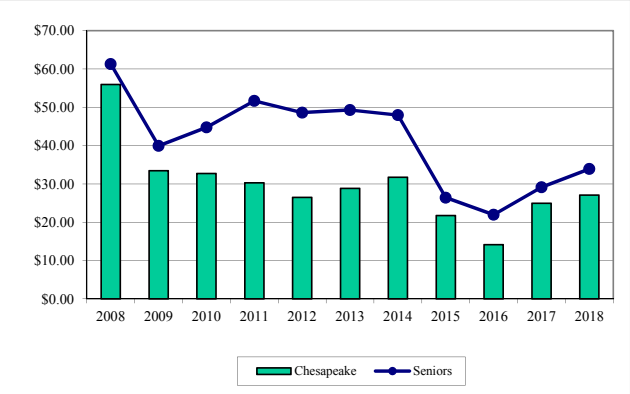
See pages F1 to F4 for analyst coverage.

Chesapeake Energy Corp. (CHK - NYSE)

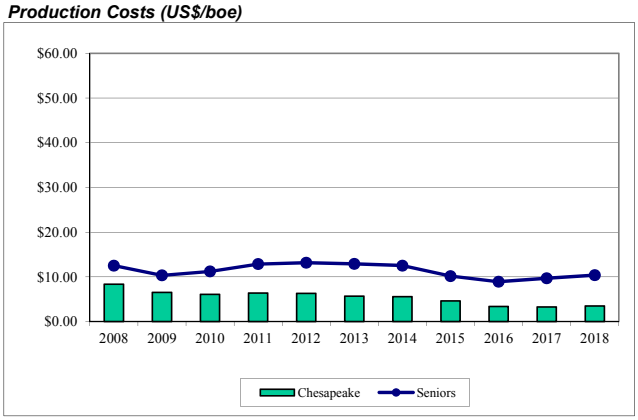
US$/boe, net

North America

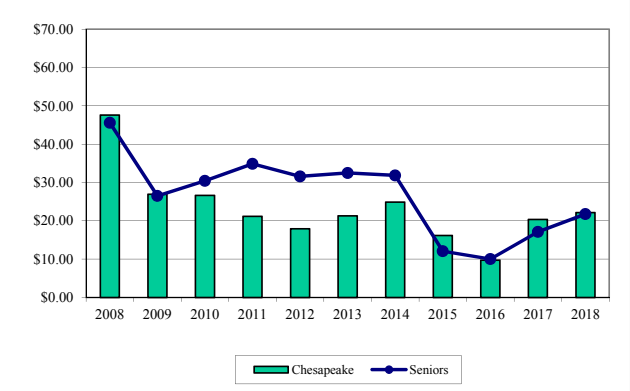
Upstream Net Revenue (US$/boe)



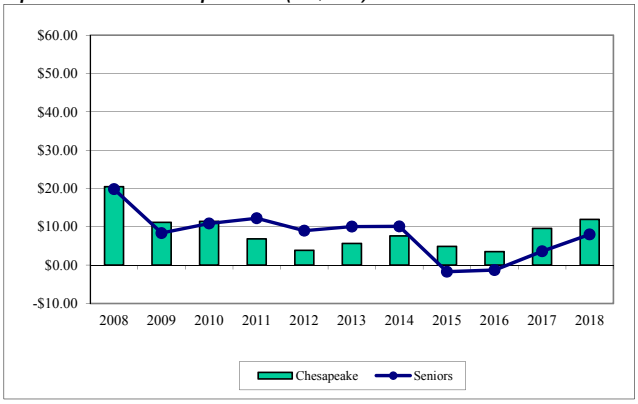
Production Costs (US$/boe)



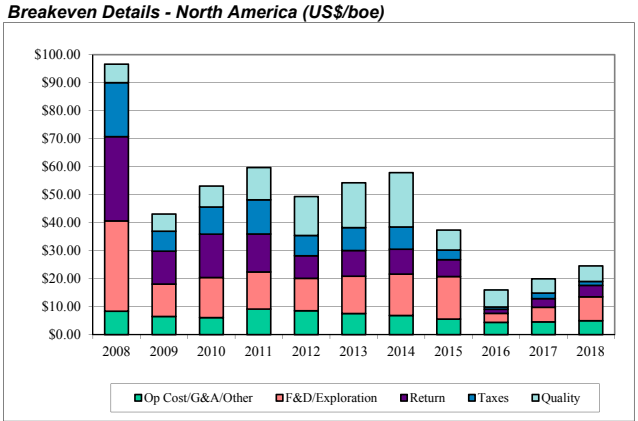
Upstream Operating Earnings (US$/boe)



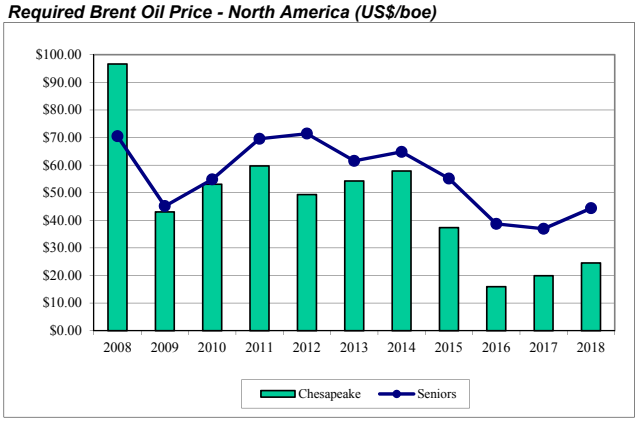
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Chesapeake Energy Corp. (CHK - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	7,858	5,049	5,647	6,024	6,278	7,052	8,180	5,391	3,288	4,985	5,155
Midstream / Downstream Revenue	3,771	2,653	3,719	5,611	6,038	10,454	12,771	7,373	4,584	4,511	5,076
Other											
Total Revenue and Other Income	11,629	7,702	9,366	11,635	12,316	17,506	20,951	12,764	7,872	9,496	10,231
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	1,173	983	1,050	1,265	1,492	1,388	1,440	1,145	784	651	663
Marketing Expenses	3,505	2,316	3,352	4,967	5,312	9,461	12,236	7,130	4,778	4,598	5,158
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	377	349	453	548	535	457	322	235	240	262	280
Depreciation, Depletion and Amortization	2,147	1,615	1,614	1,923	2,811	2,903	2,915	2,229	1,107	995	1,145
Interest, net	325	113	19	44	77	277	89	317	296	426	487
Other	2,916	11,614	(6)	8	3,063	1,578	749	20,806	5,256	1,609	1,631
Earnings Before Income Tax	1,186	(9,288)	2,884	2,880	(974)	1,442	3,200	(19,098)	(4,589)	955	867
Current Income Taxes	423	4	-	13	47	22	47	(36)	(19)	(9)	(9)
Future Income Taxes	40	(3,487)	1,110	1,110	(427)	526	1,097	(4,427)	(171)	11	11
Total Income Taxes	463	(3,483)	1,110	1,123	(380)	548	1,144	(4,463)	(190)	2	2
Minority Interest	-	(25)	-	(15)	(175)	(170)	(139)	(50)	(2)	(4)	(4)
Earnings From Continuing Operations	723	(5,830)	1,774	1,742	(769)	724	1,917	(14,685)	(4,401)	949	861
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	(428)	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	723	(5,830)	1,774	1,742	(769)	724	1,917	(14,685)	(4,829.0)	949	861
Preferred Stock Dividends	100	23	111	172	171	250	644	171	97.0	126	92
Net Earnings to Common Shareholders	623	(5,853)	1,663	1,570	(940)	474	1,273	(14,856)	(4,926.0)	823	769

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	723	(5,830)	1,774	1,757	(594)	894	2,056	(14,635)	(4,399)	953	865
Charges and Credits Not Impacting Cash	2,187	9,258	2,745	3,033	6,015	3,912	4,070	16,215	3,967	1,010	1,209
Other	2,268	905	29	519	(1,368)	150	(1,100)	688	960	(747)	(228)
Cash Flow From Operations	5,178	4,333	4,548	5,309	4,053	4,956	5,026	2,268	528	1,216	1,846
Change in Working Capital / Other	58	23	569	594	(1,216)	(342)	(392)	(1,034)	(732)	(471)	154
Net Cash From Operating Activities	5,236	4,356	5,117	5,903	2,837	4,614	4,634	1,234	(204)	745	2,000
Total Capital Expenditures	(9,251)	(5,266)	(5,242)	(7,467)	(8,930)	(5,604)	(4,581)	(3,095)	(1,295)	(2,186)	(1,958)
Acquisitions, net	(634)	(304)	(6,945)	(4,974)	(3,161)	(1,032)	4,502	(344)	618	964	1,943
Other	41	108	3,684	6,629	7,107	3,669	533	(12)	17	34	200
Net Cash From Investing Activities	(9,844)	(5,462)	(8,503)	(5,812)	(4,984)	(2,967)	454	(3,451)	(660)	(1,188)	185
Net Change in Debt	3,808	(651)	6,343	(343)	1,653	120	110	(508)	952	(226)	(2,061)
Net Change in Common Stock	2,598	-	-	-	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(183)	(204)	(281)	(379)	(398)	(404)	(405)	(118)	-	-	-
Other	133	519	(2,881)	880	828	(813)	(1,522)	(440)	(31)	(208)	(125)
Net Cash From Financing Activities	6,356	(336)	3,181	158	2,083	(1,097)	(1,817)	(1,066)	921	(434)	(2,186)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	1,748	(1,442)	(205)	249	(64)	550	3,271	(3,283)	57	(877)	(1)
Cash and Equivalents, Beginning of Year	1	1,749	307	102	351	287	837	4,108	825	882	5
Cash and Equivalents, End of Year	1,749	307	102	351	287	837	4,108	825	882	5	4

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chesapeake Energy Corp. (CHK - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	4,292	2,446	3,266	3,177	2,948	3,656	7,468	2,480	2,142	1,598	1,598
Net Property, Plant and Equipment	33,145	26,710	32,378	36,739	36,533	37,134	32,515	14,298	10,609	10,680	9,015
Other Assets	1,007	758	1,535	1,919	2,130	992	768	579	277	147	334
Total Assets	38,444	29,914	37,179	41,835	41,611	41,782	40,751	17,357	13,028	12,425	10,947
Total Current Liabilities	3,621	2,688	4,490	7,082	6,266	5,515	5,863	3,685	3,648	2,356	2,828
Long-term Debt	14,184	12,295	12,640	10,626	12,157	12,886	11,154	10,354	9,938	9,921	7,341
Deferred Income Taxes	3,763	1,059	2,384	3,484	2,807	3,407	4,185	-	-	-	53
Other Liabilities and Deferred Credits	579	1,531	2,401	2,682	2,485	1,834	1,344	921	645	520	258
Total Liabilities	22,147	17,573	21,915	23,874	23,715	23,642	22,546	14,960	14,231	12,797	10,480
Minority Interests	-	-	-	1,337	2,327	2,145	1,302	259	257	124	123
Common Shares	6	6	7	7	7	7	7	7	9	9	9
Contributed Surplus (Paid-in Capital)	10,835	12,146	12,194	12,146	12,293	12,446	12,531	12,403	14,486	14,437	14,378
Preferred Stock	505	466	3,065	3,062	3,062	3,062	3,062	3,062	1,771	1,671	1,671
Retained Earnings	4,694	(1,261)	190	1,608	437	688	1,483	(13,202)	(17,603)	(16,525)	(15,660)
Other / Comprehensive Income (Loss)	257	984	(192)	(199)	(230)	(208)	(180)	(132)	(123)	(88.00)	(54.00)
Total Shareholders' Equity	16,297	12,341	15,264	16,624	15,569	15,995	16,903	2,138	(1,460)	(496)	344
Total Liabilities and Shareholders' Equity	38,444	29,914	37,179	41,835	41,611	41,782	40,751	17,357	13,028	12,425	10,947
Return on Capital Emplyed (ROCE)	**3.0%**	**-21.1%**	**6.2%**	**5.3%**	**-2.9%**	**2.1%**	**4.7%**	**-72.8%**	**-39.2%**	**11.0%**	**11.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	7,858	5,049	5,647	6,024	6,278	7,052	8,180	5,391	3,288	4,985	5,155	13,428	26,999
Production Costs	1,173	983	1,050	1,265	1,492	1,388	1,440	1,145	784	651	663	2,098	4,683
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	1,970	1,371	1,394	1,632	2,507	2,589	2,683	2,099	1,003	913	1,145	3,061	7,843
G&A/Other	0	0	0	548	535	457	322	235	240	262	280	782	1,339
Pre-tax Results Of Operations	4,715	2,695	3,203	2,579	1,744	2,618	3,735	1,912	1,261	3,159	3,067	7,487	13,134
Income Taxes	1,839	1,011	1,233	1,220	825	1,238	1,767	702	444	1,244	797	2,485	4,953
Results Of Operations	2,876	1,684	1,970	1,359	919	1,380	1,968	1,210	817	1,915	2,270	5,002	8,181

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	7,858	5,049	5,647	6,024	6,278	7,052	8,180	5,391	3,288	4,985	5,155	13,428	26,999
Production Costs	1,173	983	1,050	1,265	1,492	1,388	1,440	1,145	784	651	663	2,098	4,683
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	1,970	1,371	1,394	1,632	2,507	2,589	2,683	2,099	1,003	913	1,145	3,061	7,843
G&A/Other	0	0	0	548	535	457	322	235	240	262	280	782	1,339
Pre-tax Results Of Operations	4,715	2,695	3,203	2,579	1,744	2,618	3,735	1,912	1,261	3,159	3,067	7,487	13,134
Income Taxes	1,839	1,011	1,233	1,220	825	1,238	1,767	702	444	1,244	797	2,485	4,953
Results Of Operations	2,876	1,684	1,970	1,359	919	1,380	1,968	1,210	817	1,915	2,270	5,002	8,181

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Chesapeake Energy Corp. (CHK - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$55.95	$33.44	$32.72	$30.27	$26.48	$28.84	$31.72	$21.74	$14.14	$24.93	$27.09	$21.56	$23.92
Production Costs	$8.35	$6.51	$6.08	$6.36	$6.29	$5.68	$5.58	$4.62	$3.37	$3.26	$3.48	$3.37	$4.15
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$14.03	$9.08	$8.08	$8.20	$10.58	$10.59	$10.40	$8.47	$4.31	$4.57	$6.02	$4.91	$6.95
G&A/Other	$0.00	$0.00	$0.00	$2.75	$2.26	$1.87	$1.25	$0.95	$1.03	$1.31	$1.47	$1.26	$1.19
Pre-tax Results Of Operations	$33.57	$17.85	$18.56	$12.96	$7.36	$10.71	$14.48	$7.71	$5.42	$15.80	$16.12	$12.02	$11.64
Income Taxes	$13.09	$6.69	$7.15	$6.13	$3.48	$5.07	$6.85	$2.83	$1.91	$6.22	$4.19	$3.99	$4.39
Results Of Operations	$20.47	$11.16	$11.42	$6.83	$3.88	$5.64	$7.63	$4.88	$3.51	$9.58	$11.93	$8.03	$7.25

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$55.95	$33.44	$32.72	$30.27	$26.48	$28.84	$31.72	$21.74	$14.14	$24.93	$27.09	$21.56	$23.92
Production Costs	$8.35	$6.51	$6.08	$6.36	$6.29	$5.68	$5.58	$4.62	$3.37	$3.26	$3.48	$3.37	$4.15
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$14.03	$9.08	$8.08	$8.20	$10.58	$10.59	$10.40	$8.47	$4.31	$4.57	$6.02	$4.91	$6.95
G&A/Other	$0.00	$0.00	$0.00	$2.75	$2.26	$1.87	$1.25	$0.95	$1.03	$1.31	$1.47	$1.26	$1.19
Pre-tax Results Of Operations	$33.57	$17.85	$18.56	$12.96	$7.36	$10.71	$14.48	$7.71	$5.42	$15.80	$16.12	$12.02	$11.64
Income Taxes	$13.09	$6.69	$7.15	$6.13	$3.48	$5.07	$6.85	$2.83	$1.91	$6.22	$4.19	$3.99	$4.39
Results Of Operations	$20.47	$11.16	$11.42	$6.83	$3.88	$5.64	$7.63	$4.88	$3.51	$9.58	$11.93	$8.03	$7.25

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Chesapeake Energy Corp. (CHK - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	2,124.4	2,287.7	2,534.2	2,750.7	3,093.2	3,000.0	3,000.0	2,931.5	2,876.7	2,405.5	2,279.5	2,520.5	2,698.6
Liquids Production (b/d)	30,740	32,329	50,411	86,849	133,973	169,863	206,575	190,685	157,808	146,849	141,370	148,676	168,658
Total Production (boe/d)	384,815	413,607	472,785	545,297	649,498	669,863	706,575	679,269	637,260	547,763	521,279	568,767	618,429
% Gas Production	92%	92%	89%	84%	79%	75%	71%	72%	75%	73%	73%	74%	73%
% Oil Production	8%	8%	11%	16%	21%	25%	29%	28%	25%	27%	27%	26%	27%
Proven Reserves:													
Gas Reserves (bcf)	11,327.5	13,510.5	15,455.5	15,515.5	10,933.5	11,734.5	10,692.5	6,041.5	6,496.5	8,600.5	6,777.5	7,291.5	7,721.7
Oil Reserves (mmbbls)	120.6	124.0	273.4	545.5	792.8	722.8	687.1	497.2	625.5	478.8	318.8	474.4	521.5
Total Proven Reserves (mmboe)	2,008.5	2,375.8	2,849.3	3,131.4	2,615.1	2,678.6	2,469.2	1,504.1	1,708.3	1,912.2	1,448.4	1,689.6	1,808.5
% Gas Reserves	94%	95%	90%	83%	70%	73%	72%	67%	63%	75%	78%	72%	71%
% Oil Reserves	6%	5%	10%	17%	30%	27%	28%	33%	37%	25%	22%	28%	29%
Proven Reserve Life Index	14.3	15.7	16.5	15.7	11.0	11.0	9.6	6.1	7.3	9.6	7.6	8.2	8.0
Proven Reserve Additions:													
Gas Additions (bcf)	1,965.6	3,018.0	2,870.0	1,064.0	-3,453.0	1,896.0	53.0	-3,581.0	1,505.0	2,982.0	-991.0	3,496.0	(32.0)
Oil Additions (mmbbls)	8.3	15.2	167.8	303.8	296.2	-8.0	39.7	-120.3	185.9	-93.1	-108.4	(15.6)	(96.2)
Total Additions (mmboe)	335.9	518.2	646.1	481.1	-279.3	308.0	48.5	-717.1	436.7	403.9	-273.6	567.1	-101.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	265.9	782.1	849.7	947.3	1,066.2	524.3	448.0	230.6	579.9	723.3	269.8	1,572.9	2,251.4
Acquisitions	28.7	5.5	14.9	5.0	7.1	2.0	13.7	0.0	54.4	3.6	0.0	58.0	71.7
Dispositions	(116.9)	(36.6)	(248.9)	(462.8)	(224.5)	(189.0)	(361.8)	(63.4)	(241.1)	(71.4)	(558.6)	(871.1)	(1,296.3)
Revisions of Estimates	158.3	(232.8)	30.4	-8.4	-1,128.1	-29.3	-51.3	-884.3	43.6	-251.6	15.2	(192.8)	(1,128.4)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	79.1%	150.9%	131.5%	196.9%	-381.8%	170.2%	923.0%	-32.2%	132.8%	179.1%	-98.6%	277.4%	-2217.4%
Acquisitions	8.5%	1.1%	2.3%	1.0%	-2.6%	0.7%	28.2%	0.0%	12.5%	0.9%	0.0%	10.2%	-70.7%
Dispositions	-34.8%	-7.1%	-38.5%	-96.2%	80.4%	-61.4%	-745.5%	8.8%	-55.2%	-17.7%	204.2%	-153.6%	1276.7%
Revisions of Estimates	47.1%	-44.9%	4.7%	-1.7%	403.9%	-9.5%	-105.7%	123.3%	10.0%	-62.3%	-5.6%	-34.0%	1111.4%
Additions as % of Production:													
Gas	253.5%	361.4%	310.3%	106.0%	-305.8%	173.2%	4.8%	-334.7%	143.3%	339.6%	-119.1%	126.7%	-0.6%
Oil	74.0%	128.8%	912.0%	958.4%	605.7%	-12.9%	52.7%	-172.8%	322.7%	-173.7%	-210.1%	-9.6%	-31.3%
Total	239.1%	343.3%	374.4%	241.7%	-117.8%	126.0%	18.8%	-289.2%	187.8%	202.0%	-143.8%	91.1%	-9.0%
Additions as % of Reserves:													
Gas	17.4%	22.3%	18.6%	6.9%	-31.6%	16.2%	0.5%	-59.3%	23.2%	34.7%	-14.6%	47.9%	-0.4%
Oil	6.9%	12.3%	61.4%	55.7%	37.4%	-1.1%	5.8%	-24.2%	29.7%	-19.4%	-34.0%	-3.3%	-18.4%
Total	16.7%	21.8%	22.7%	15.4%	-10.7%	11.5%	2.0%	-47.7%	25.6%	21.1%	-18.9%	33.6%	-5.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$926.0	$813.0	$872.0	$2,260.0	$2,353.0	$699.0	$421.0	$112.0	$52.0	$21.0	$132.0	$205.0	$738.0
Development	$5,185.0	$2,729.0	$4,739.0	$5,495.0	$6,733.0	$4,888.0	$4,204.0	$2,941.0	$1,312.0	$2,146.0	$2,009.0	$5,467.0	$12,612.0
Acquisitions	$8,497.0	$2,854.0	$7,196.0	$4,784.0	$3,313.0	$1,019.0	$1,438.0	$454.0	$806.0	$294.0	$296.0	$1,396.0	$3,288.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$14,608.0	$6,396.0	$12,807.0	$12,539.0	$12,399.0	$6,606.0	$6,063.0	$3,507.0	$2,170.0	$2,461.0	$2,437.0	$7,068.0	$16,638.0
Expenditures as % of Total:													
Exploration	6.3%	12.7%	6.8%	18.0%	19.0%	10.6%	6.9%	3.2%	2.4%	0.9%	5.4%	2.9%	4.4%
Development	35.5%	42.7%	37.0%	43.8%	54.3%	74.0%	69.3%	83.9%	60.5%	87.2%	82.4%	77.3%	75.8%
Acquisitions	58.2%	44.6%	56.2%	38.2%	26.7%	15.4%	23.7%	12.9%	37.1%	11.9%	12.1%	19.8%	19.8%
Cashflow (US$million)	$5,178.0	$4,333.0	$4,548.0	$5,309.0	$4,053.0	$4,956.0	$5,026.0	$2,268.0	$528.0	$1,216.0	$1,846.0	$3,590.0	$10,884.0
Cashflow (US$/boe)	$36.87	$28.70	$26.36	$26.67	$17.10	$20.27	$19.49	$9.15	$2.27	$6.08	$9.70	$5.76	$9.64
Recycle Ratio	1.1x	2.5x	1.8x	2.0x	-0.1x	1.5x	1.3x	-1.7x	0.7x	1.2x	1.1x	1.2x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$14.41	$6.45	$6.38	$8.26	-$146.79	$11.29	$11.66	-$4.67	$2.19	$4.59	$7.51	$4.11	$11.89
Acquisition Costs	$296.45	$515.78	$482.95	$950.46	$464.44	$501.15	$104.96	na	$14.81	$81.67	na	$24.06	$45.84
All Sources (incl. revisions)	$32.26	$11.53	$14.31	$13.28	-$226.40	$13.29	$14.77	-$5.36	$3.20	$5.18	$8.55	$4.91	$13.93
Exploration & Development (excl. revisions)	$22.99	$4.53	$6.60	$8.19	$8.52	$10.66	$10.32	$13.24	$2.35	$3.00	$7.94	$3.61	$5.93
Acquisition Costs	$296.45	$515.78	$482.95	$950.46	$464.44	$501.15	$104.96	na	$14.81	$81.67	na	$24.06	$45.84
All Sources (excl. revisions)	$49.60	$8.12	$14.81	$13.17	$11.55	$12.55	$13.13	$15.21	$3.42	$3.39	$9.03	$4.33	$7.16
Geographically Segmented Costs													
North America	$32.26	$11.53	$14.31	$13.28	-$226.40	$13.29	$14.77	-$5.36	$3.20	$5.18	$8.55	$12.46	-$163.87

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chesapeake Energy Corp. (CHK - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	8.35	6.51	6.08	6.36	6.29	5.68	5.58	4.62	3.37	3.26	3.48	3.37	4.15
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	2.75	2.26	1.87	1.25	0.95	1.03	1.31	1.47	1.26	1.19
F&D Costs	32.26	11.53	14.31	13.28	11.55	13.29	14.77	15.21	3.20	5.18	8.55	4.91	9.38
Return on Capital	30.13	11.80	15.50	13.57	8.06	9.18	8.87	5.97	1.47	3.08	4.08	2.51	4.72
Income Taxes	19.27	7.08	9.70	12.18	7.24	8.24	7.97	3.46	0.80	2.00	1.43	1.25	2.86
Breakeven Oil Price	90.00	36.92	45.60	48.14	35.41	38.25	38.45	30.21	9.87	14.83	19.01	13.30	22.30
Quality Differential	6.63	6.14	7.49	11.55	13.91	15.97	19.39	7.15	6.08	5.08	5.55	5.57	8.65
Required Brent Price	96.64	43.05	53.09	59.70	49.31	54.22	57.84	37.36	15.95	19.91	24.57	18.87	30.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	8.35	6.51	6.08	6.36	6.29	5.68	5.58	4.62	3.37	3.26	3.48	3.37	4.15
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	2.75	2.26	1.87	1.25	0.95	1.03	1.31	1.47	1.26	1.19
F&D Costs	32.26	11.53	14.31	13.28	11.55	13.29	14.77	15.21	3.20	5.18	8.55	4.91	9.38
Return on Capital	30.13	11.80	15.50	13.57	8.06	9.18	8.87	5.97	1.47	3.08	4.08	2.51	4.72
Income Taxes	19.27	7.08	9.70	12.18	7.24	8.24	7.97	3.46	0.80	2.00	1.43	1.25	2.86
Breakeven Oil Price	90.00	36.92	45.60	48.14	35.41	38.25	38.45	30.21	9.87	14.83	19.01	13.30	22.30
Quality Differential	6.63	6.14	7.49	11.55	13.91	15.97	19.39	7.15	6.08	5.08	5.55	5.57	8.65
Required Brent Price	96.64	43.05	53.09	59.70	49.31	54.22	57.84	37.36	15.95	19.91	24.57	18.87	30.95

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	-	-	-	-	-	-	-	-	-	-	-	-	-
Return on Capital	-	-	-	-	-	-	-	-	-	-	-	-	-
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	-	-
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Chesapeake Energy Corp. (CHK - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.77	16.59	14.48	16.15	19.13	14.52	11.69	7.93	6.03	5.72	6.10	5.95	7.55
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	6.99	6.86	4.78	2.61	1.63	1.85	2.30	2.58	2.22	2.16
F&D Costs (1-Year)	64.11	31.92	29.76	25.85	37.28	44.10	26.47	22.98	5.24	17.33	16.53	10.04	17.71
Return on Capital	57.94	31.23	32.00	27.42	32.99	32.80	15.39	9.22	2.70	10.20	7.47	5.16	9.15
Income Taxes	37.06	18.74	20.03	24.62	29.62	29.44	13.82	5.35	1.47	6.63	2.62	2.56	5.54
Breakeven Oil Price	**174.89**	**98.47**	**96.26**	**101.04**	**125.88**	**125.64**	**69.98**	**47.11**	**17.29**	**42.17**	**35.29**	**25.94**	**42.11**
Quality Differential	12.53	15.63	17.82	29.35	42.27	40.85	40.58	12.29	10.88	8.92	9.72	9.84	16.48
Required Brent Price	**187.42**	**114.10**	**114.08**	**130.39**	**168.16**	**166.49**	**110.56**	**59.40**	**28.17**	**51.09**	**45.01**	**35.77**	**58.59**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.77	16.59	14.48	16.15	19.13	14.52	11.69	7.93	6.03	5.72	6.10	5.95	7.55
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	6.99	6.86	4.78	2.61	1.63	1.85	2.30	2.58	2.22	2.16
F&D Costs (1-Year)	70.95	83.16	52.16	47.21	71.35	23.75	19.76	19.62	10.87	28.76	10.69	13.78	17.94
Return on Capital	64.00	81.05	55.16	49.77	63.14	17.01	11.59	7.81	5.61	16.94	4.83	7.14	9.10
Income Taxes	40.93	48.62	34.53	44.68	56.69	15.27	10.41	4.53	3.05	11.00	1.70	3.55	5.51
Breakeven Oil Price	**191.65**	**229.42**	**156.32**	**164.80**	**217.16**	**75.33**	**56.07**	**41.52**	**27.41**	**64.72**	**25.89**	**32.63**	**42.27**
Quality Differential	12.53	15.63	17.82	29.35	42.27	40.85	40.58	12.29	10.88	8.92	9.72	9.84	16.48
Required Brent Price	**204.17**	**245.05**	**174.14**	**194.15**	**259.44**	**116.18**	**96.65**	**53.81**	**38.30**	**73.64**	**35.61**	**42.47**	**58.75**

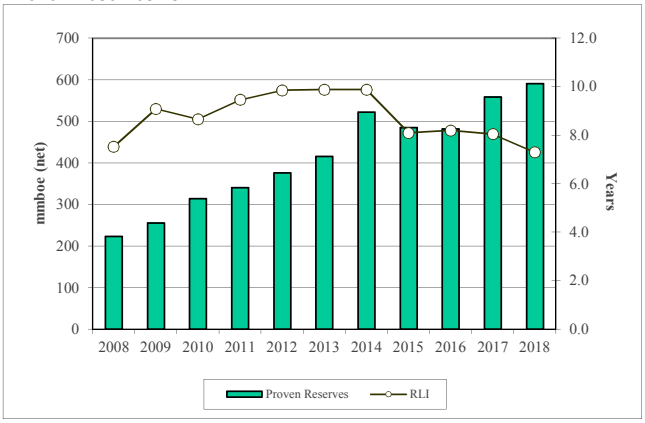
Source: BMO Capital Markets, Company Reports

Cimarex (XEC - NYSE) US$, net

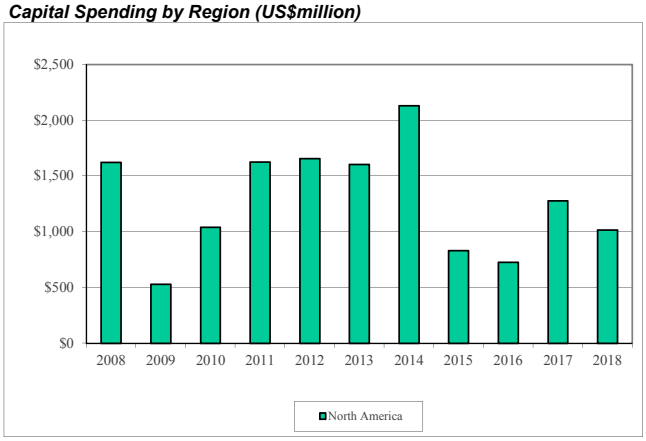
- Cimarex's results of operations were steady at $8.59/boe in 2018 versus $8.72/boe last year.
- 2018 F&D costs dropped to $7.47/boe from $8.68/boe last year. On a realized oil:gas basis, F&D costs decreased to $9.13/boe versus $10.56/boe in 2017, while the costs for PD reserves also improved to $9.41/boe from $10.64/boe the previous year.
- Cimarex's 2018 costs imply a required Brent breakeven oil price of $54.92/boe on total proved reserves, while its PD costs imply a break-even of $55.41/boe.
- The company reported a return on capital employed of 21.4% in 2018 versus 15.2% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

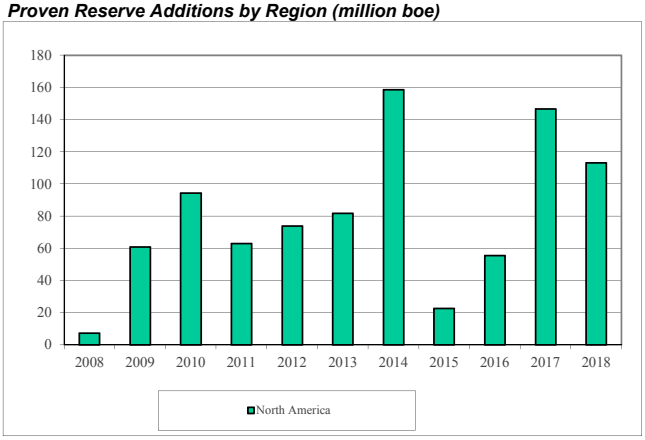
Proven Reserves vs RLI



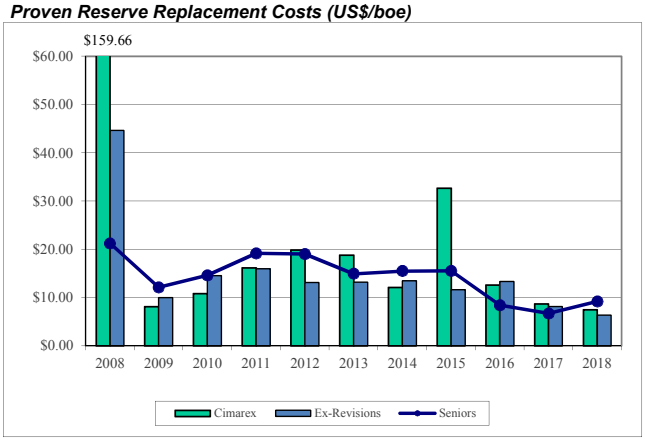
Capital Spending by Region (US$million)



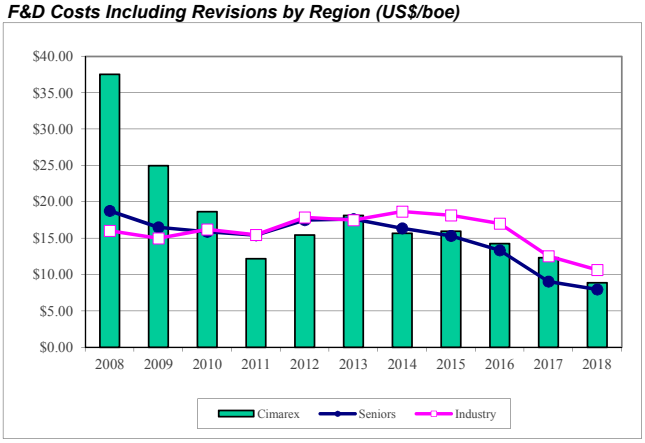
Proven Reserve Additions by Region (million boe)



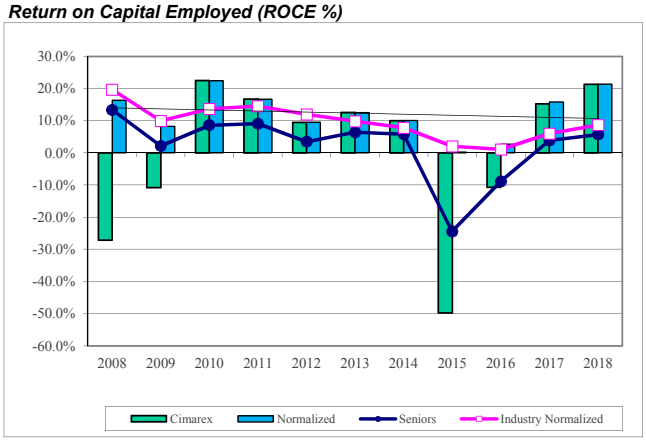
Proven Reserve Replacement Costs (US$/boe)



F&D Costs Including Revisions by Region (US$/boe)



Return on Capital Employed (ROCE %)



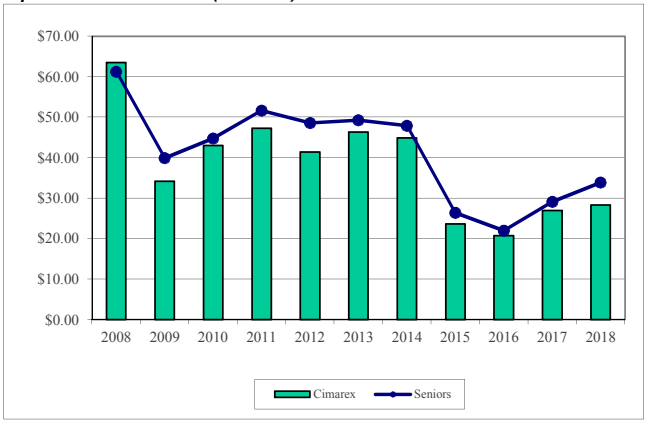
Source: BMO Capital Markets, Company Reports

Cimarex (XEC - NYSE)

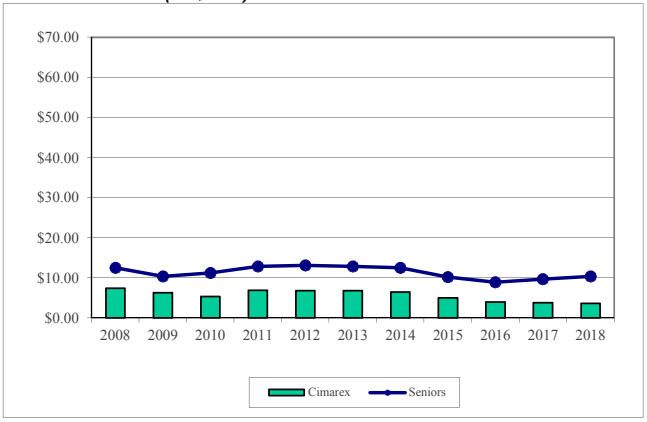
US$/boe, net

North America

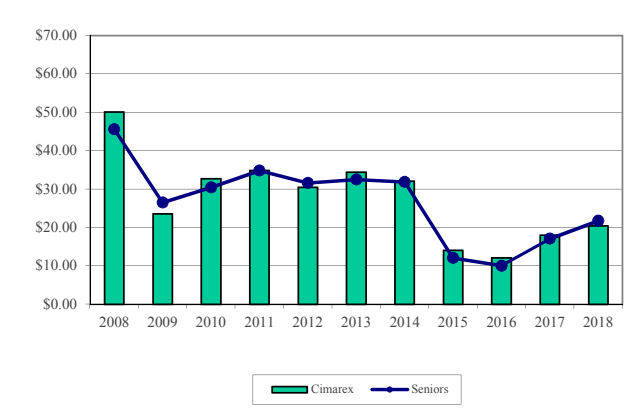
Upstream Net Revenue (US$/boe)



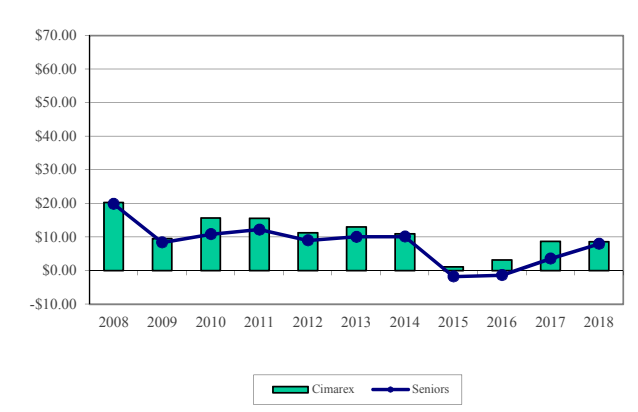
Production Costs (US$/boe)



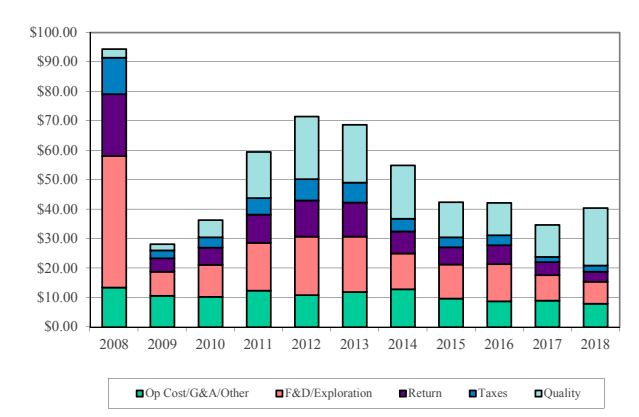
Upstream Operating Earnings (US$/boe)



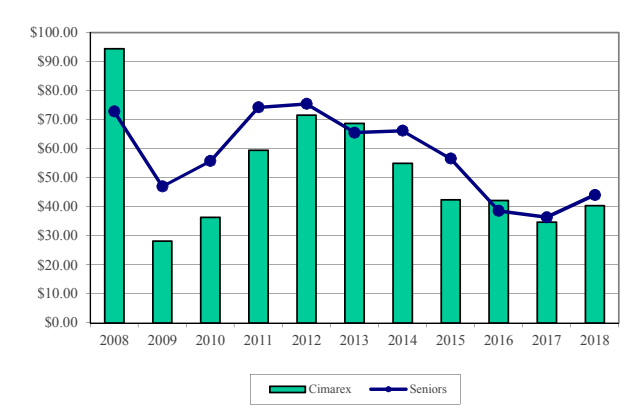
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Cimarex (XEC - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,881	962	1,559	1,704	1,582	1,953	2,373	1,418	1,221	1,874	2,298
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	89	47	55	54	42	46	51	35	36	44	41
Total Revenue and Other Income	1,970	1,010	1,614	1,758	1,624	1,998	2,424	1,453	1,257	1,918	2,339
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	301	233	266	327	338	406	573	520	455	530	619
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	42
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	
General and Administrative	45	42	49	45	54	77	81	75	74	80	81
Depreciation, Depletion and Amortization	547	266	304	390	514	616	806	779	466	446	590
Interest, net	32	40	37	36	49	55	73	86	83	75	68
Other	2,467	906	37	107	95	(58)	75	3,767	830	90	(100)
Earnings Before Income Tax	(1,430)	(488)	914	842	561	894	806	(3,782)	(658)	682	1,023
Current Income Taxes	66	(12)	46	(46)	(1)	(1)	0	15	(1)	(3)	(3)
Future Income Taxes	(595)	(165)	293	358	208	330	298	(1,388)	(226)	190	233
Total Income Taxes	(529)	(177)	339	312	207	329	299	(1,373)	(227)	188	231
Minority Interest	-	-	-	-						-	-
Earnings From Continuing Operations	(902)	(312)	575	530	354	565	507	(2,409)	(431)	494	792
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(902)	(312)	575	530	354	565	507	(2,409)	(431)	494	792
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(902)	(312)	575	530	354	565	507	(2,409)	(431)	494	792

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(902)	(312)	575	530	354	565	507	(2,409)	(431)	494	792
Charges and Credits Not Impacting Cash	2,204	919	604	760	735	946	1,104	(609)	240	637	824
Other	141	51	9	25	46	18	29	3,734	815	53	(80)
Cash Flow From Operations	1,443	658	1,188	1,315	1,135	1,529	1,640	716	623	1,184	1,535
Change in Working Capital / Other	(76)	17	(58)	(23)	58	(204)	(21)	(25)	(24)	(87)	16
Net Cash From Operating Activities	1,367	675	1,130	1,292	1,193	1,324	1,619	692	599	1,097	1,551
Upstream Spending	(1,595)	(535)	(960)	(1,562)	(1,663)	(1,572)	(2,108)	(979)	(700)	(1,233)	(1,567)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	
Acquisitions, net	39	-	-	229	313	93	450	41	29	13	584
Other	(41)	91	(18)	(97)	(65)	(52)	(82)	(71)	(22)	(45)	(103)
Net Cash From Investing Activities	(1,597)	(444)	(978)	(1,429)	(1,415)	(1,531)	(1,740)	(1,009)	(692)	(1,266)	(1,086)
Net Change in Debt	114	(195)	(44)	55	331	174	576	-	-	(31)	-
Net Change in Common Stock	13	3	29	10	11	14	12	752	-	-	(12)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(20)	(20)	(25)	(33)	(40)	(47)	(54)	(58)	(38)	(31)	(55)
Other	(0)	(18)	(0)	(7)	(14)	(0)	(12)	(3)	5	(21)	2
Net Cash From Financing Activities	107	(230)	(41)	25	289	142	522	691	(33)	(83)	(65)
Effect of Exchange Rate on Cash										-	-
Net Increase/(Decrease) in Cash	(122)	1	112	(112)	67	(65)	401	374	(127)	(252)	400
Cash and Equivalents, Beginning of Year	123	1	3	114	2	70	5	406	779	653	401
Cash and Equivalents, End of Year	1	3	114	2	70	5	406	779	653	401	801

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cimarex (XEC - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	515	407	562	458	470	469	932	1,078	969	936	1,424
Net Property, Plant and Equipment	2,809	2,185	2,922	4,126	5,005	5,966	6,904	3,276	2,854	3,452	3,973
Other Assets	841	852	874	844	830	818	890	889	858	655	665
Total Assets	4,165	3,445	4,358	5,429	6,305	7,253	8,725	5,243	4,682	5,043	6,062
Total Current Liabilities	470	389	512	616	646	683	776	410	522	680	709
Long-term Debt	591	393	350	405	750	924	1,500	1,500	1,500	1,487	1,489
Deferred Income Taxes	500	349	619	975	1,121	1,460	1,755	353	127	102	334
Other Liabilities and Deferred Credits	255	276	267	302	313	164	194	183	172	206	201
Total Liabilities	1,816	1,406	1,748	2,298	2,830	3,231	4,225	2,446	2,322	2,474	2,732
Minority Interests	-	-	-							-	-
Common Shares	1	1	1	1	1	1	1	1	1	1	1
Contributed Surplus (Paid-in Capital)	1,856	1,859	1,883	1,909	1,940	1,970	1,997	2,763	2,763	2,764	2,785
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	527	178	726	1,221	1,534	2,050	2,502	33	(405)	(199)	543
Other / Comprehensive Income (Loss)	(34)	-	-	(0)	0	1	1	0	1	2	1
Total Shareholders' Equity	2,349	2,038	2,610	3,131	3,475	4,022	4,501	2,798	2,360	2,568	3,330
Total Liabilities and Shareholders' Equity	4,165	3,445	4,358	5,429	6,305	7,253	8,725	5,243	4,682	5,043	6,062
Return on Capital Employed (ROCE)	**-27.1%**	**-10.8%**	**22.5%**	**16.7%**	**9.5%**	**12.5%**	**10.1%**	**-49.7%**	**-10.7%**	**15.2%**	**21.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	1,881	962	1,559	1,704	1,582	1,953	2,373	1,418	1,221	1,874	2,298	5,393	9,183
Production Costs	219	178	194	247	259	287	342	299	232	262	293	787	1,429
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	528	243	282	368	485	585	774	737	420	399	539	1,358	2,868
G&A/Other	177	122	179	200	157	214	334	277	280	360	351	991	1,602
Pre-tax Results Of Operations	957	419	903	889	681	867	922	105	290	852	1,115	2,257	3,284
Income Taxes	354	151	335	329	251	319	342	38	100	246	418	765	1,144
Results Of Operations	603	268	568	560	430	548	581	67	190	606	696	1,492	2,139

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,881	962	1,559	1,704	1,582	1,953	2,373	1,418	1,221	1,874	2,298	5,393	9,183
Production Costs	219	178	194	247	259	287	342	299	232	262	293	787	1,429
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	528	243	282	368	485	585	774	737	420	399	539	1,358	2,868
G&A/Other	177	122	179	200	157	214	334	277	280	360	351	991	1,602
Pre-tax Results Of Operations	957	419	903	889	681	867	922	105	290	852	1,115	2,257	3,284
Income Taxes	354	151	335	329	251	319	342	38	100	246	418	765	1,144
Results Of Operations	603	268	568	560	430	548	581	67	190	606	696	1,492	2,139

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Cimarex (XEC - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$63.47	$34.18	$42.99	$47.28	$41.39	$46.34	$44.91	$23.67	$20.78	$26.97	$28.36	$25.77	$28.52
Production Costs	$7.38	$6.33	$5.35	$6.86	$6.77	$6.81	$6.48	$5.00	$3.95	$3.77	$3.62	$3.76	$4.44
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$17.81	$8.65	$7.79	$10.20	$12.68	$13.88	$14.65	$12.30	$7.14	$5.75	$6.65	$6.49	$8.91
G&A/Other	$5.99	$4.32	$4.94	$5.54	$4.12	$5.09	$6.33	$4.63	$4.76	$5.18	$4.33	$4.74	$4.98
Pre-tax Results Of Operations	$32.29	$14.88	$24.91	$24.68	$17.82	$20.57	$17.46	$1.75	$4.93	$12.27	$13.76	$10.78	$10.20
Income Taxes	$11.93	$5.38	$9.25	$9.14	$6.57	$7.57	$6.47	$0.63	$1.70	$3.54	$5.17	$3.65	$3.55
Results Of Operations	$20.36	$9.50	$15.66	$15.54	$11.25	$13.00	$10.99	$1.11	$3.23	$8.72	$8.59	$7.13	$6.64

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$63.47	$34.18	$42.99	$47.28	$41.39	$46.34	$44.91	$23.67	$20.78	$26.97	$28.36	$25.77	$28.52
Production Costs	$7.38	$6.33	$5.35	$6.86	$6.77	$6.81	$6.48	$5.00	$3.95	$3.77	$3.62	$3.76	$4.44
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$17.81	$8.65	$7.79	$10.20	$12.68	$13.88	$14.65	$12.30	$7.14	$5.75	$6.65	$6.49	$8.91
G&A/Other	$5.99	$4.32	$4.94	$5.54	$4.12	$5.09	$6.33	$4.63	$4.76	$5.18	$4.33	$4.74	$4.98
Pre-tax Results Of Operations	$32.29	$14.88	$24.91	$24.68	$17.82	$20.57	$17.46	$1.75	$4.93	$12.27	$13.76	$10.78	$10.20
Income Taxes	$11.93	$5.38	$9.25	$9.14	$6.57	$7.57	$6.47	$0.63	$1.70	$3.54	$5.17	$3.65	$3.55
Results Of Operations	$20.36	$9.50	$15.66	$15.54	$11.25	$13.00	$10.99	$1.11	$3.23	$8.72	$8.59	$7.13	$6.64

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Cimarex (XEC - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	349.2	323.2	363.9	329.1	324.6	343.1	425.0	463.0	460.9	513.6	563.9	512.8	485.3
Liquids Production (b/d)	23,000	23,282	38,674	43,874	50,597	58,236	73,923	86,921	84,186	104,753	127,956	105,632	95,548
Total Production (boe/d)	81,194	77,149	99,319	98,722	104,705	115,426	144,758	164,084	161,002	190,355	221,946	191,101	176,429
% Gas Production	72%	70%	61%	56%	52%	50%	49%	47%	48%	45%	42%	45%	46%
% Oil Production	28%	30%	39%	44%	48%	50%	51%	53%	52%	55%	58%	55%	54%
Proven Reserves:													
Gas Reserves (bcf)	1,067.3	1,186.6	1,254.2	1,216.4	1,251.9	1,293.5	1,666.7	1,516.9	1,471.4	1,607.6	1,591.3	1,556.8	1,570.8
Oil Reserves (mmbbls)	45.2	58.0	105.0	138.1	167.8	200.6	244.3	232.1	236.5	291.1	326.0	284.5	266.0
Total Proven Reserves (mmboe)	223.1	255.8	314.0	340.9	376.5	416.2	522.1	484.9	481.8	559.0	591.2	544.0	527.8
% Gas Reserves	80%	77%	67%	59%	55%	52%	53%	52%	51%	48%	45%	48%	50%
% Oil Reserves	20%	23%	33%	41%	45%	48%	47%	48%	49%	52%	55%	52%	50%
Proven Reserve Life Index	7.5	9.1	8.7	9.5	9.9	9.9	9.9	8.1	8.2	8.0	7.3	7.8	8.3
Proven Reserve Additions:													
Gas Additions (bcf)	72.1	237.2	200.4	82.4	153.9	166.9	528.4	19.2	122.7	323.7	189.5	635.9	1,183.5
Oil Additions (mmbbls)	(4.7)	21.3	61.1	49.2	48.2	54.0	70.7	19.5	35.2	92.8	81.6	209.6	299.8
Total Additions (mmboe)	7.4	60.8	94.5	62.9	73.8	81.8	158.7	22.7	55.6	146.8	113.2	315.5	497.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	35.8	52.0	68.6	97.8	126.2	121.2	135.7	71.5	54.0	156.8	158.5	369.3	576.4
Acquisitions	0.5	0.7	2.6	4.0	0.0	0.1	22.3	0.0	0.2	0.2	0.0	0.4	22.7
Dispositions	(2.8)	(4.2)	(1.5)	(37.7)	(9.5)	(3.5)	(16.7)	(2.7)	(1.8)	(0.3)	(22.7)	(24.8)	(44.2)
Revisions of Estimates	(26.1)	12.3	24.7	-1.2	-42.9	-36.0	17.5	-46.0	3.3	-9.9	-22.7	(29.3)	(57.9)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	486.5%	85.5%	72.6%	155.5%	171.0%	148.1%	85.5%	314.3%	97.1%	106.8%	140.1%	117.0%	116.0%
Acquisitions	6.4%	1.1%	2.7%	6.3%	0.0%	0.1%	14.0%	0.0%	0.3%	0.2%	0.0%	0.1%	4.6%
Dispositions	-37.9%	-6.8%	-1.5%	-59.9%	-12.9%	-4.2%	-10.5%	-11.8%	-3.3%	-0.2%	-20.0%	-7.9%	-8.9%
Revisions of Estimates	-355.0%	20.2%	26.2%	-1.9%	-58.1%	-44.0%	11.0%	-202.5%	5.9%	-6.8%	-20.0%	-9.3%	-11.6%
Additions as % of Production:													
Gas	56.6%	201.1%	150.9%	68.6%	129.9%	133.2%	340.6%	11.4%	72.9%	172.7%	92.1%	113.2%	133.6%
Oil	-55.4%	250.8%	432.6%	307.1%	260.8%	254.1%	261.9%	61.6%	114.4%	242.8%	174.7%	181.2%	171.9%
Total	24.8%	216.1%	260.6%	174.6%	193.2%	194.2%	300.4%	38.0%	94.6%	211.2%	139.7%	150.8%	154.4%
Additions as % of Reserves:													
Gas	6.8%	20.0%	16.0%	6.8%	12.3%	12.9%	31.7%	1.3%	8.3%	20.1%	11.9%	40.8%	75.3%
Oil	-10.3%	36.7%	58.2%	35.6%	28.7%	26.9%	28.9%	8.4%	14.9%	31.9%	25.0%	73.7%	112.7%
Total	3.3%	23.8%	30.1%	18.5%	19.6%	19.7%	30.4%	4.7%	11.5%	26.3%	19.1%	58.0%	94.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$268.1	$59.4	$119.6	$82.5	$109.2	$52.4	$50.3	$53.1	$61.9	$11.8	$6.3	$80.1	$183.4
Development	$1,035.4	$430.4	$767.0	$1,351.6	$1,426.9	$1,354.1	$1,664.9	$823.8	$672.8	$1,140.5	$1,487.5	$3,300.8	$5,789.6
Acquisitions	$317.3	$38.3	$152.1	$191.3	$120.3	$195.8	$415.6	-$46.2	-$10.1	$124.8	-$479.1	-$364.4	$5.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$1,620.8	$528.0	$1,038.7	$1,625.5	$1,656.4	$1,602.3	$2,130.8	$830.7	$724.6	$1,277.2	$1,014.7	$3,016.5	$5,978.0
Expenditures as % of Total:													
Exploration	16.5%	11.2%	11.5%	5.1%	6.6%	3.3%	2.4%	6.4%	8.5%	0.9%	0.6%	2.7%	3.1%
Development	63.9%	81.5%	73.8%	83.2%	86.1%	84.5%	78.1%	99.2%	92.9%	89.3%	146.6%	109.4%	96.8%
Acquisitions	19.6%	7.3%	14.6%	11.8%	7.3%	12.2%	19.5%	-5.6%	-1.4%	9.8%	-47.2%	-12.1%	0.1%
Cashflow (C$million)	$1,443.2	$658.5	$1,188.1	$1,315.0	$1,134.7	$1,528.7	$1,640.5	$716.1	$623.5	$1,183.7	$1,535.3	$3,342.5	$5,699.1
Cashflow (C$/boe)	$48.70	$23.38	$32.77	$36.49	$29.69	$36.28	$31.05	$11.96	$10.61	$17.04	$18.95	$15.97	$17.70
Recycle Ratio	0.3x	2.9x	3.0x	2.3x	1.5x	1.9x	2.6x	0.4x	0.8x	2.0x	2.5x	1.8x	1.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$134.62	$7.61	$9.50	$14.84	$18.43	$16.51	$11.20	$34.50	$12.82	$7.85	$11.00	$9.94	$11.52
Acquisition Costs	$676.75	$58.88	$59.32	$48.01	$4,945.48	$2,452.65	$18.66	nm	-$63.07	$549.88	nm	-$938.35	$0.22
All Sources (incl. revisions)	$159.66	$8.12	$10.83	$16.15	$19.87	$18.79	$12.15	$32.67	$12.61	$8.68	$7.47	$8.86	$11.05
Exploration & Development (excl. revisions)	$36.40	$9.41	$12.92	$14.66	$12.17	$11.60	$12.64	$12.27	$13.61	$7.35	$9.42	$9.16	$10.36
Acquisition Costs	$676.75	$58.88	$59.32	$48.01	$4,945.48	$2,452.65	$18.66	nm	-$63.07	$549.88	nm	-$938.35	$0.22
All Sources (excl. revisions)	$44.67	$10.02	$14.59	$15.96	$13.12	$13.21	$13.49	$11.63	$13.38	$8.13	$6.40	$8.16	$9.98

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cimarex (XEC - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	7.38	6.33	5.35	6.86	6.77	6.81	6.48	5.00	3.95	3.77	3.62	3.76	4.44
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	5.99	4.32	4.94	5.54	4.12	5.09	6.33	4.63	4.76	5.18	4.33	4.74	4.98
F&D Costs	44.67	8.12	10.83	16.15	19.87	18.79	12.15	11.63	12.61	8.68	7.47	8.86	10.51
Return on Capital	21.06	4.61	5.87	9.58	12.26	11.63	7.47	5.88	6.46	4.40	3.38	4.34	5.46
Income Taxes	12.35	2.61	3.47	5.63	7.17	6.78	4.40	3.35	3.41	1.79	2.03	2.23	2.92
Breakeven Oil Price	91.45	26.00	30.45	43.77	50.18	49.09	36.81	30.48	31.19	23.83	20.84	23.93	28.31
Quality Differential	3.01	2.17	5.85	15.67	21.36	19.61	18.15	11.93	10.94	10.90	19.61	13.82	14.31
Required Brent Price	94.47	28.17	36.31	59.43	71.54	68.70	54.96	42.41	42.14	34.73	40.45	37.75	42.61

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	7.38	6.33	5.35	6.86	6.77	6.81	6.48	5.00	3.95	3.77	3.62	3.76	4.44
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	5.99	4.32	4.94	5.54	4.12	5.09	6.33	4.63	4.76	5.18	4.33	4.74	4.98
F&D Costs	44.67	8.12	10.83	16.15	19.87	18.79	12.15	11.63	12.61	8.68	7.47	8.86	10.51
Return on Capital	21.06	4.61	5.87	9.58	12.26	11.63	7.47	5.88	6.46	4.40	3.38	4.34	5.46
Income Taxes	12.35	2.61	3.47	5.63	7.17	6.78	4.40	3.35	3.41	1.79	2.03	2.23	2.92
Breakeven Oil Price	91.45	26.00	30.45	43.77	50.18	49.09	36.81	30.48	31.19	23.83	20.84	23.93	28.31
Quality Differential	3.01	2.17	5.85	15.67	21.36	19.61	18.15	11.93	10.94	10.90	19.61	13.82	14.31
Required Brent Price	94.47	28.17	36.31	59.43	71.54	68.70	54.96	42.41	42.14	34.73	40.45	37.75	42.61

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cimarex (XEC - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.17	10.39	7.98	10.62	10.98	10.24	9.04	7.20	5.15	4.82	5.16	5.04	6.06
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	9.06	7.09	7.37	8.59	6.68	7.65	8.83	6.66	6.21	6.62	6.17	6.34	6.80
F&D Costs (1-Year)	65.46	12.34	13.40	23.61	26.12	24.64	18.05	16.09	15.46	10.56	9.13	10.81	13.86
Return on Capital	29.72	6.53	6.91	13.62	15.26	14.81	10.80	7.70	7.74	5.17	4.06	5.16	7.07
Income Taxes	17.43	3.69	4.08	8.01	8.92	8.63	6.36	4.39	4.08	2.10	2.44	2.64	3.78
Breakeven Oil Price	**132.84**	**40.05**	**39.74**	**64.45**	**67.96**	**65.96**	**53.08**	**42.05**	**38.63**	**29.28**	**26.97**	**30.00**	**37.57**
Quality Differential	4.56	3.57	8.72	24.27	34.67	29.49	25.33	17.18	14.27	13.92	27.95	18.71	19.73
Required Brent Price	**137.40**	**43.61**	**48.46**	**88.72**	**102.63**	**95.45**	**78.40**	**59.23**	**52.90**	**43.20**	**54.92**	**48.71**	**57.30**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.17	10.39	7.98	10.62	10.98	10.24	9.04	7.20	5.15	4.82	5.16	5.04	6.06
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	9.06	7.09	7.37	8.59	6.68	7.65	8.83	6.66	6.21	6.62	6.17	6.34	6.80
F&D Costs (1-Year)	127.81	16.53	15.72	32.25	29.42	30.48	22.11	14.67	11.67	10.64	9.41	10.40	13.70
Return on Capital	56.53	8.75	8.14	18.35	17.35	18.45	13.21	7.05	5.85	5.21	4.19	4.97	6.89
Income Taxes	33.15	4.95	4.81	10.79	10.14	10.75	7.78	4.02	3.08	2.11	2.52	2.55	3.69
Breakeven Oil Price	**237.72**	**47.71**	**44.01**	**80.59**	**74.58**	**77.57**	**60.98**	**39.59**	**31.96**	**29.40**	**27.46**	**29.30**	**37.14**
Quality Differential	4.56	3.57	8.72	24.27	34.67	29.49	25.33	17.18	14.27	13.92	27.95	18.71	19.73
Required Brent Price	**242.29**	**51.27**	**52.74**	**104.86**	**109.25**	**107.06**	**86.30**	**56.78**	**46.23**	**43.33**	**55.41**	**48.02**	**56.87**

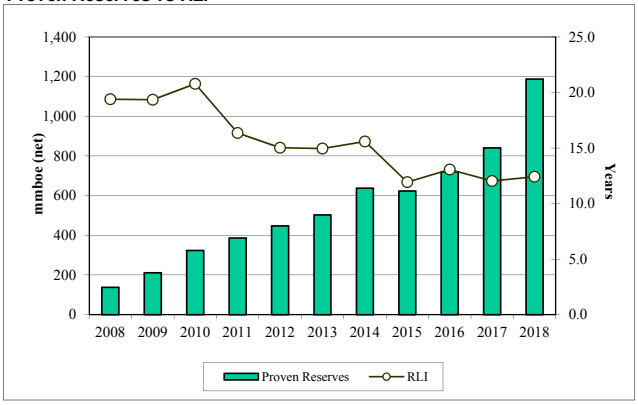
Source: BMO Capital Markets, Company Reports

Concho Resources Inc. (CXO - NYSE) US$, net

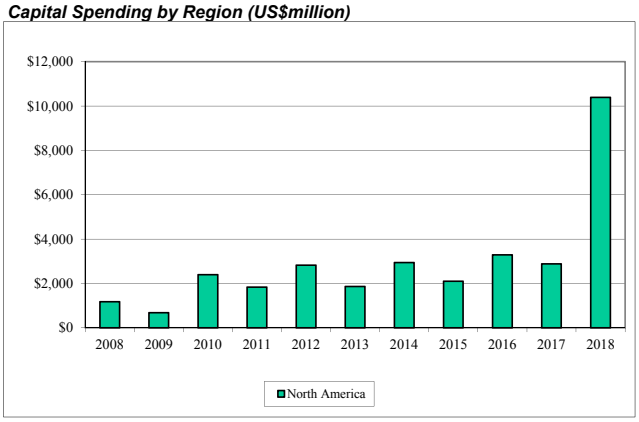
- Concho reported results from operations of $11.33/boe in 2018 versus $4.80/boe in 2017.
- The company's reserve replacement costs increased to $22.61/boe in 2018 from $14.87/boe last year. On a realized oil:gas price basis, F&D costs declined to $19.69/boe from $28.09/boe, while costs for PD reserves rose to $38.00/boe from $19.85/boe.
- Concho's 2018 results imply a Brent breakeven oil price of $85.42/boe on a realized ratio basis, while its PD costs imply a Brent break-even oil price of $105.10/boe.
- The company reported ROCE of 13.6% in 2018 versus an adjusted ROCE of 2.3% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

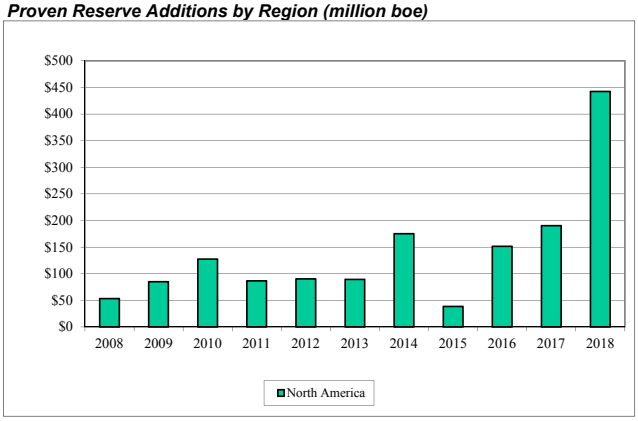
Proven Reserves vs RLI



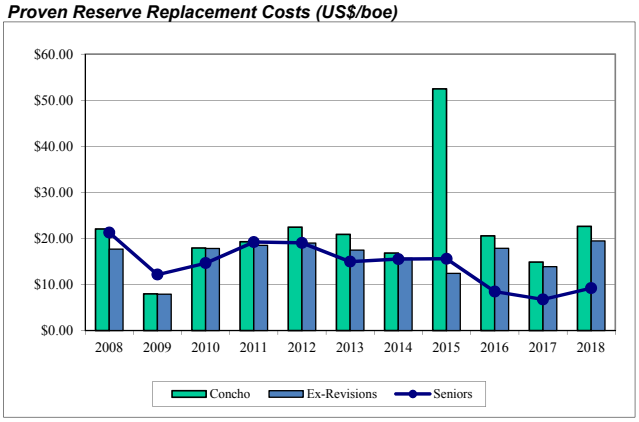
Capital Spending by Region (US$million)



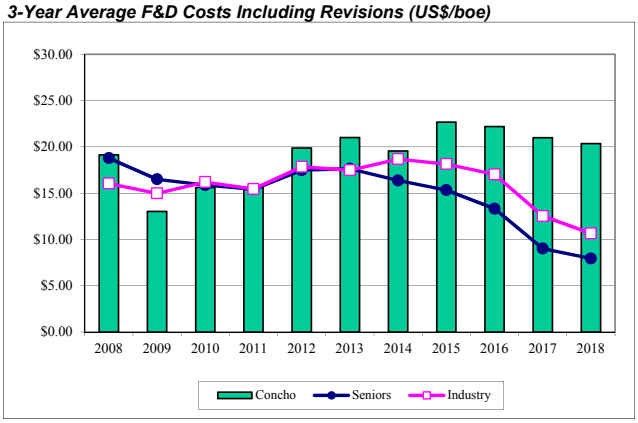
Proven Reserve Additions by Region (million boe)



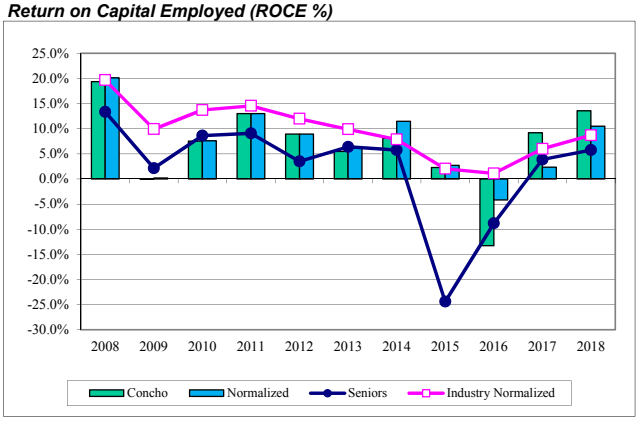
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

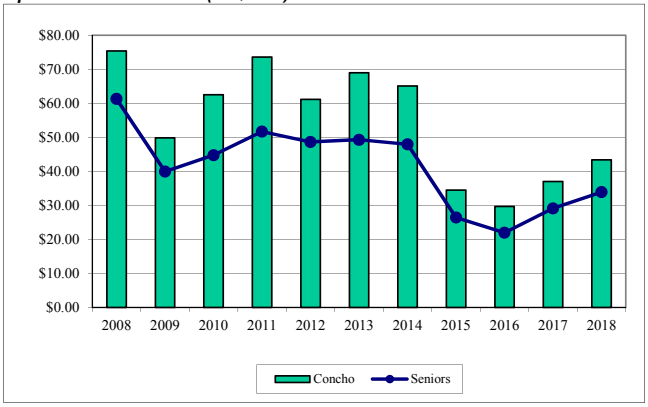
See pages F1 to F4 for analyst coverage.

Concho Resources Inc. (CXO - NYSE)

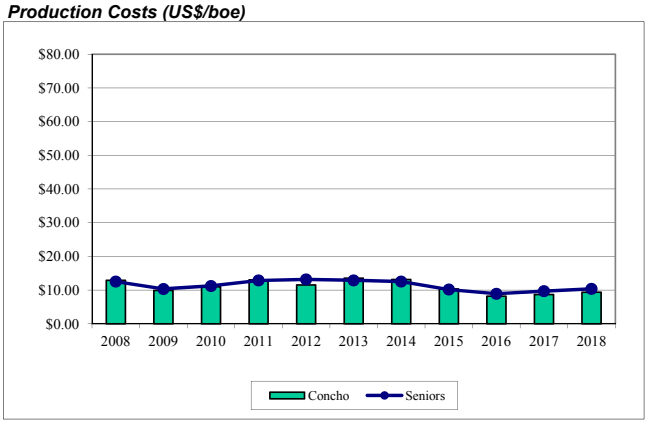
US$/boe, net

North America

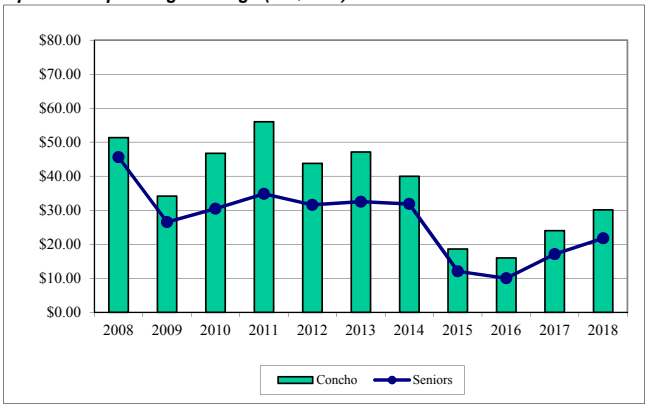
Upstream Net Revenue (US$/boe)



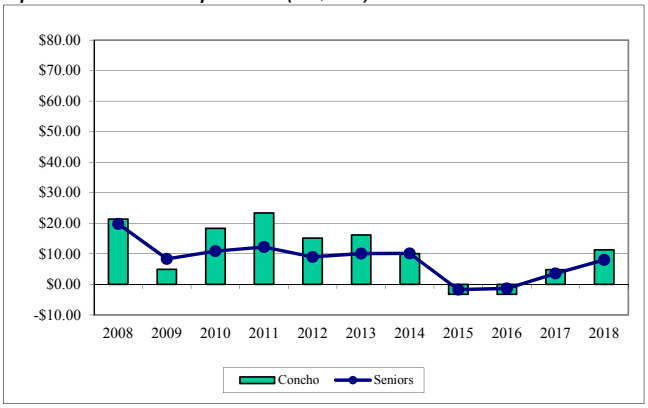
Production Costs (US$/boe)



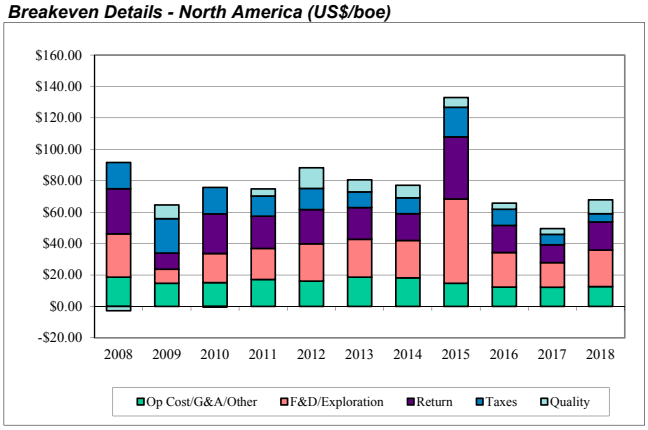
Upstream Operating Earnings (US$/boe)



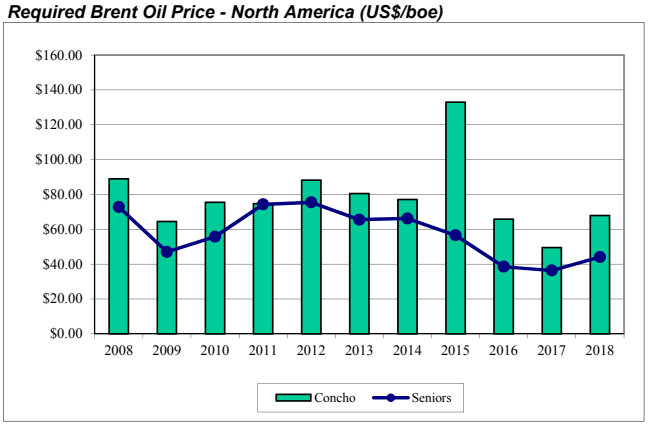
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Concho Resources Inc. (CXO - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	534	520	973	1,740	1,820	2,320	2,660	1,804	1,635	2,586	4,151
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	534	520	973	1,740	1,820	2,320	2,660	1,804	1,635	2,586	4,151
Crude Oil and Product Purchases	-	-	-	-	-	-					
Production and Transportation Expenses	91	99	171	308	344	455	538	541	451	607	895
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	38	11	10	12	40	110	285	59	77	59	65
General and Administrative	41	53	64	96	134	170	204	231	226	244	311
Depreciation, Depletion and Amortization	124	197	250	428	575	773	980	1,223	1,167	1,146	1,478
Interest, net	29	29	70	122	183	219	217	215	204	146	149
Other	(231)	164	100	24	(119)	231	(427)	(571)	1,841	(505)	(1,646)
Earnings Before Income Tax	441	(33)	306	746	659	357	856	97	(2,339)	881	2,889
Current Income Taxes	9	8	18	24	9	16	22	2	(12)	(4)	(2)
Future Income Taxes	153	(29)	105	262	242	102	296	30	(864)	(71)	605
Total Income Taxes	162	(22)	123	286	251	118	318	31	(876)	(75)	603
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	279	(12)	183	461	408	239	538	66	(1,462)	956	2,286
Discontinued Operations/Extraordinary Items	-	2	21	88	23	12				-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	279	(10)	204	548	432	251	538	66	(1,462)	956	2,286
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	279	(10)	204	548	432	251	538	66	(1,462)	956	2,286

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	279	(12)	183	461	408	239	538	66	(1,462)	956	2,286
Charges and Credits Not Impacting Cash	331	182	374	697	837	1,021	1,988	1,357	1,894	1,102	2,118
Other	(239)	182	102	(26)	(32)	174	(809)	(561)	1,013	(340)	(1,850)
Cash Flow From Operations	371	353	659	1,132	1,214	1,434	1,717	862	1,444	1,718	2,554
Change in Working Capital / Other	20	7	(8)	68	24	(72)	(43)	35	(60)	(23)	4
Net Cash From Operating Activities	391	360	652	1,199	1,237	1,362	1,674	898	1,384	1,695	2,558
Total Capital Expenditures	(348)	(404)	(684)	(1,708)	(2,717)	(1,851)	(2,555)	(2,444)	(2,397)	(2,489)	(2,632)
Acquisitions, net	(583)	(265)	(1,345)	159	492	15	1	0	332	803	361
Other	(15)	82	(14)	(102)	(16)	(61)	8	474	(159)	(33)	55
Net Cash From Investing Activities	(946)	(586)	(2,043)	(1,651)	(2,240)	(1,897)	(2,546)	(1,970)	(2,225)	(1,719)	(2,216)
Net Change in Debt	302	216	664	420	1,021	528	(55)	(140)	(600)	(6)	(278)
Net Change in Common Stock	242	-	739	(2)	(3)	(4)	916	1,531	1,315	(23)	(64)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	(3)	(4)	(14)	34	(12)	8	10	(90)	(51)	0	-
Net Cash From Financing Activities	542	212	1,389	452	1,006	532	872	1,301	665	(29)	(342)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(13)	(15)	(3)	(0)	3	(3)	(0)	229	(175)	(53)	-
Cash and Equivalents, Beginning of Year	30	17	3	0	0	3	(0)	(0)	228	53	-
Cash and Equivalents, End of Year	17	3	0	0	3	(0)	(0)	228	53	-	-

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Concho Resources Inc. (CXO - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	279	217	331	411	459	521	1,188	1,315	546	592	1,409
Net Property, Plant and Equipment	2,387	2,841	4,886	6,231	7,890	8,946	10,206	10,977	11,302	13,041	22,313
Other Assets	150	113	152	208	240	124	406	350	270	99.00	2,572.00
Total Assets	2,815	3,171	5,368	6,850	8,589	9,591	11,800	12,642	12,119	13,732	26,294
Total Current Liabilities	271	337	507	701	740	757	1,427	596	753	1,165	1,356
Long-term Debt	630	846	1,669	2,080	3,101	3,630	3,517	3,332	2,741	2,691	4,194
Deferred Income Taxes	574	603	721	1,002	1,187	1,335	1,438	1,630	766	687	1,808
Other Liabilities and Deferred Credits	15	50	88	85	95	111	136	140	237	274	168
Total Liabilities	1,490	1,836	2,985	3,869	5,123	5,833	6,519	5,699	4,497	4,817	7,526
Minority Interests	-	-	-							-	-
Common Shares	0	0	0	0	0	0	0	0	0	-	-
Contributed Surplus (Paid-in Capital)	1,009	1,029	1,875	1,926	1,983	2,027	3,027	4,628	6,783	7,142	14,773
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	316	306	511	1,059	1,491	1,742	2,280	2,346	883	1,840	4,126
Other / Comprehensive Income (Loss)	(0)	(0)	(2)	(4)	(7)	(11)	(26)	(32)	(44)	(67.00)	(131.00)
Total Shareholders' Equity	1,325	1,335	2,384	2,981	3,466	3,758	5,281	6,943	7,623	8,915	18,768
Total Liabilities and Shareholders' Equity	2,815	3,171	5,368	6,850	8,589	9,591	11,800	12,642	12,119	13,732	26,294
Return on Capital Employed (ROCE)	**19.4%**	**0.0%**	**7.6%**	**13.0%**	**8.9%**	**5.5%**	**8.1%**	**2.3%**	**-13.3%**	**9.2%**	**13.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	534	544	973	1,740	1,820	2,320	2,660	1,804	1,635	2,586	4,151	8,372	12,836
Production Costs	91	108	171	308	344	455	538	541	451	607	895	1,953	3,033
Exploration	38	11	10	12	40	110	285	59	77	59	65	201	545
DD&A	124	206	250	428	575	773	980	1,223	1,167	1,146	1,478	3,791	5,994
G&A/Other	41	52	64	96	134	170	204	231	226	244	311	781	1,215
Pre-tax Results Of Operations	239	167	477	896	727	813	653	-251	-287	530	1,402	1,645	2,048
Income Taxes	88	114	192	343	277	269	242	-81	-107	195	318	406	567
Results Of Operations	151	54	286	553	450	544	411	-170	-179	335	1,084	1,240	1,481

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	534	544	973	1,740	1,820	2,320	2,660	1,804	1,635	2,586	4,151	8,372	12,836
Production Costs	91	108	171	308	344	455	538	541	451	607	895	1,953	3,033
Exploration	38	11	10	12	40	110	285	59	77	59	65	201	545
DD&A	124	206	250	428	575	773	980	1,223	1,167	1,146	1,478	3,791	5,994
G&A/Other	41	52	64	96	134	170	204	231	226	244	311	781	1,215
Pre-tax Results Of Operations	239	167	477	896	727	813	653	-251	-287	530	1,402	1,645	2,048
Income Taxes	88	114	192	343	277	269	242	-81	-107	195	318	406	567
Results Of Operations	151	54	286	553	450	544	411	-170	-179	335	1,084	1,240	1,481

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Concho Resources Inc. (CXO - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$75.39	$49.81	$62.49	$73.59	$61.13	$68.97	$65.08	$34.49	$29.68	$37.03	$43.39	$37.95	$40.91
Production Costs	$12.88	$9.89	$10.97	$13.03	$11.55	$13.54	$13.17	$10.35	$8.19	$8.69	$9.36	$8.86	$9.67
Exploration	$5.43	$0.98	$0.66	$0.50	$1.34	$3.26	$6.97	$1.13	$1.41	$0.84	$0.68	$0.91	$1.74
DD&A	$17.50	$18.86	$16.05	$18.12	$19.32	$22.97	$23.97	$23.39	$21.19	$16.41	$15.45	$17.19	$19.11
G&A/Other	$5.76	$4.78	$4.13	$4.07	$4.49	$5.05	$4.99	$4.41	$4.09	$3.49	$3.25	$3.54	$3.87
Pre-tax Results Of Operations	$33.81	$15.30	$30.67	$37.88	$24.43	$24.16	$15.98	-$4.79	-$5.20	$7.59	$14.66	$7.46	$6.53
Income Taxes	$12.43	$10.39	$12.31	$14.50	$9.30	$8.00	$5.93	-$1.55	-$1.95	$2.79	$3.33	$1.84	$1.81
Results Of Operations	$21.38	$4.91	$18.36	$23.37	$15.13	$16.16	$10.05	-$3.25	-$3.25	$4.80	$11.33	$5.62	$4.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$75.39	$49.81	$62.49	$73.59	$61.13	$68.97	$65.08	$34.49	$29.68	$37.03	$43.39	$37.95	$40.91
Production Costs	$12.88	$9.89	$10.97	$13.03	$11.55	$13.54	$13.17	$10.35	$8.19	$8.69	$9.36	$8.86	$9.67
Exploration	$5.43	$0.98	$0.66	$0.50	$1.34	$3.26	$6.97	$1.13	$1.41	$0.84	$0.68	$0.91	$1.74
DD&A	$17.50	$18.86	$16.05	$18.12	$19.32	$22.97	$23.97	$23.39	$21.19	$16.41	$15.45	$17.19	$19.11
G&A/Other	$5.76	$4.78	$4.13	$4.07	$4.49	$5.05	$4.99	$4.41	$4.09	$3.49	$3.25	$3.54	$3.87
Pre-tax Results Of Operations	$33.81	$15.30	$30.67	$37.88	$24.43	$24.16	$15.98	-$4.79	-$5.20	$7.59	$14.66	$7.46	$6.53
Income Taxes	$12.43	$10.39	$12.31	$14.50	$9.30	$8.00	$5.93	-$1.55	-$1.95	$2.79	$3.33	$1.84	$1.81
Results Of Operations	$21.38	$4.91	$18.36	$23.37	$15.13	$16.16	$10.05	-$3.25	-$3.25	$4.80	$11.33	$5.62	$4.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Concho Resources Inc. (CXO - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	41.0	59.1	86.0	147.2	193.4	205.6	239.3	293.1	349.3	441.1	569.9	453.4	378.5
Liquids Production (b/d)	12,564	20,099	28,301	40,252	49,323	57,879	72,107	94,403	92,712	117,808	167,123	125,881	108,831
Total Production (boe/d)	19,399	29,947	42,642	64,779	81,557	92,151	111,986	143,255	150,923	191,324	262,100	201,449	171,918
% Gas Production	35%	33%	34%	38%	40%	37%	36%	34%	39%	38%	36%	38%	37%
% Oil Production	65%	67%	66%	62%	60%	63%	64%	66%	61%	62%	64%	62%	63%
Proven Reserves:													
Gas Reserves (bcf)	305.9	416.9	672.2	889.4	1,042.1	1,173.2	1,601.0	1,534.1	1,751.6	2,042.6	2,623.6	2,139.3	1,910.6
Oil Reserves (mmbbls)	86.3	142.0	211.4	238.3	273.5	307.4	370.3	367.8	428.0	500.0	750.0	559.4	483.2
Total Proven Reserves (mmboe)	137.3	211.5	323.5	386.5	447.2	502.9	637.2	623.5	720.0	840.5	1,187.3	915.9	801.7
% Gas Reserves	37%	33%	35%	38%	39%	39%	42%	41%	41%	41%	37%	39%	40%
% Oil Reserves	63%	67%	65%	62%	61%	61%	58%	59%	59%	59%	63%	61%	60%
Proven Reserve Life Index	19.4	19.3	20.8	16.3	15.0	15.0	15.6	11.9	13.1	12.0	12.4	12.5	13.0
Proven Reserve Additions:													
Gas Additions (bcf)	95.1	132.5	286.7	270.9	223.3	206.2	515.1	40.0	345.0	452.0	789.0	1,586.0	2,141.2
Oil Additions (mmbbls)	37.5	63.1	79.7	41.6	53.2	55.0	89.3	31.9	94.1	115.0	311.0	520.1	641.3
Total Additions (mmboe)	53.4	85.2	127.5	86.7	90.4	89.4	175.1	38.6	151.6	190.3	442.5	784.4	998.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	36.4	65.9	59.6	86.5	91.9	105.3	182.1	157.1	124.8	173.5	226.3	524.6	863.8
Acquisitions	30.2	20.3	74.8	12.6	56.5	1.6	5.7	11.7	59.1	34.0	307.8	400.9	418.3
Dispositions	0.0	(0.1)	(6.0)	(8.4)	(35.3)	-	-	(1.4)	(8.3)	(3.5)	(17.0)	(28.8)	(30.1)
Revisions of Estimates	(13.2)	(1.0)	(0.9)	(4.0)	(22.7)	(17.5)	(12.7)	(128.8)	(24.0)	(13.7)	(74.7)	(112.3)	(253.8)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	68.3%	77.4%	46.8%	99.7%	101.6%	117.9%	104.0%	407.3%	82.3%	91.2%	51.1%	66.9%	86.5%
Acquisitions	56.6%	23.8%	58.6%	14.5%	62.5%	1.7%	3.3%	30.3%	39.0%	17.9%	69.6%	51.1%	41.9%
Dispositions	0.0%	-0.1%	-4.7%	-9.6%	-39.0%	0.0%	0.0%	-3.6%	-5.4%	-1.8%	-3.8%	-3.7%	-3.0%
Revisions of Estimates	-24.8%	-1.1%	-0.7%	-4.6%	-25.1%	-19.6%	-7.2%	-334.0%	-15.8%	-7.2%	-16.9%	-14.3%	-25.4%
Additions as % of Production:													
Gas	635.2%	614.5%	912.8%	504.3%	316.4%	274.8%	589.8%	37.4%	270.6%	280.7%	379.3%	319.5%	310.0%
Oil	817.9%	859.7%	771.9%	282.9%	295.6%	260.3%	339.2%	92.6%	278.0%	267.4%	509.8%	377.3%	322.9%
Total	753.6%	779.1%	819.3%	366.7%	303.8%	265.7%	428.5%	73.8%	275.2%	272.6%	462.5%	355.6%	318.1%
Additions as % of Reserves:													
Gas	31.1%	31.8%	42.6%	30.5%	21.4%	17.6%	32.2%	2.6%	19.7%	22.1%	30.1%	74.1%	112.1%
Oil	43.5%	44.4%	37.7%	17.4%	19.5%	17.9%	24.1%	8.7%	22.0%	23.0%	41.5%	93.0%	132.7%
Total	38.9%	40.3%	39.4%	22.4%	20.2%	17.8%	27.5%	6.2%	21.1%	22.6%	37.3%	85.6%	124.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$160.2	$134.1	$200.8	$562.7	$781.2	$1,029.8	$1,615.2	$1,122.6	$701.3	$1,021.0	$1,588.0	$3,310.3	$6,048.1
Development	$178.8	$265.7	$492.6	$744.5	$741.2	$738.4	$937.5	$709.1	$448.4	$653.0	$1,050.0	$2,151.4	$3,798.0
Acquisitions	$838.0	$280.5	$1,700.1	$525.0	$1,298.9	$97.0	$391.7	$263.4	$2,136.3	$1,208.0	$7,753.0	$11,097.3	$11,752.4
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$1,177.0	$680.3	$2,393.5	$1,832.1	$2,821.3	$1,865.3	$2,944.5	$2,095.1	$3,286.0	$2,882.0	$10,391.0	$16,559.0	$21,598.5
Expenditures as % of Total:													
Exploration	13.6%	19.7%	8.4%	30.7%	27.7%	55.2%	54.9%	53.6%	21.3%	35.4%	15.3%	20.0%	28.0%
Development	15.2%	39.1%	20.6%	40.6%	26.3%	39.6%	31.8%	33.8%	13.6%	22.7%	10.1%	13.0%	17.6%
Acquisitions	71.2%	41.2%	71.0%	28.7%	46.0%	5.2%	13.3%	12.6%	65.0%	41.9%	74.6%	67.0%	54.4%
Cashflow (C$million)	$371.2	$352.8	$659.4	$1,131.6	$1,213.5	$1,433.6	$1,717.3	$862.4	$1,444.5	$1,718.0	$2,554.0	$5,716.5	$8,296.2
Cashflow (C$/boe)	$52.42	$32.28	$42.37	$47.86	$40.77	$42.62	$42.01	$16.49	$26.22	$24.60	$26.70	$25.91	$26.44
Recycle Ratio	2.4x	4.0x	2.4x	2.5x	1.8x	2.0x	2.5x	0.3x	1.3x	1.7x	1.2x	1.3x	1.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$14.62	$6.15	$11.80	$15.85	$21.99	$20.14	$15.07	$64.86	$11.41	$10.47	$17.39	$13.25	$16.14
Acquisition Costs	$27.77	$13.84	$22.74	$41.73	$23.00	$62.27	$68.67	$22.51	$36.16	$35.53	$25.19	$27.68	$28.09
All Sources (incl. revisions)	$22.06	$7.98	$17.93	$19.27	$22.44	$20.87	$16.81	$52.45	$20.56	$14.87	$22.61	$20.36	$21.00
Exploration & Development (excl. revisions)	$9.31	$6.06	$11.63	$15.11	$16.56	$16.79	$14.02	$11.66	$9.21	$9.65	$11.66	$10.41	$11.40
Acquisition Costs	$27.77	$13.84	$22.74	$41.73	$23.00	$62.27	$68.67	$22.51	$36.16	$35.53	$25.19	$27.68	$28.09
All Sources (excl. revisions)	$17.67	$7.89	$17.81	$18.49	$19.01	$17.45	$15.68	$12.41	$17.87	$13.89	$19.45	$17.89	$16.85

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Concho Resources Inc. (CXO - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	12.88	9.89	10.97	13.03	11.55	13.54	13.17	10.35	8.19	8.69	9.36	8.86	9.67
Exploration Expense	5.43	0.98	0.66	0.50	1.34	3.26	6.97	1.13	1.41	0.84	0.68	0.91	1.74
G&A/Other	5.76	4.78	4.13	4.07	4.49	5.05	4.99	4.41	4.09	3.49	3.25	3.54	3.87
F&D Costs	22.06	7.98	17.93	19.27	22.44	20.87	16.81	52.45	20.56	14.87	22.61	20.36	21.00
Return on Capital	28.80	10.35	25.19	20.61	21.84	20.19	17.06	39.62	17.26	11.37	17.86	16.22	17.44
Income Taxes	16.75	21.89	16.88	12.79	13.43	9.99	10.08	18.86	10.34	6.61	5.24	7.74	8.69
Breakeven Oil Price	91.68	55.87	75.77	70.27	75.09	72.90	69.09	126.82	61.84	45.88	59.00	57.63	62.42
Quality Differential	(2.74)	8.68	(0.30)	4.50	13.13	7.65	8.02	6.18	3.95	3.67	8.89	5.50	6.14
Required Brent Price	88.94	64.55	75.46	74.77	88.22	80.55	77.11	133.00	65.79	49.55	67.89	63.13	68.56

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	12.88	9.89	10.97	13.03	11.55	13.54	13.17	10.35	8.19	8.69	9.36	8.86	9.67
Exploration Expense	5.43	0.98	0.66	0.50	1.34	3.26	6.97	1.13	1.41	0.84	0.68	0.91	1.74
G&A/Other	5.76	4.78	4.13	4.07	4.49	5.05	4.99	4.41	4.09	3.49	3.25	3.54	3.87
F&D Costs	22.06	7.98	17.93	19.27	22.44	20.87	16.81	52.45	20.56	14.87	22.61	20.36	21.00
Return on Capital	28.80	10.35	25.19	20.61	21.84	20.19	17.06	39.62	17.26	11.37	17.86	16.22	17.44
Income Taxes	16.75	21.89	16.88	12.79	13.43	9.99	10.08	18.86	10.34	6.61	5.24	7.74	8.69
Breakeven Oil Price	91.68	55.87	75.77	70.27	75.09	72.90	69.09	126.82	61.84	45.88	59.00	57.63	62.42
Quality Differential	(2.74)	8.68	(0.30)	4.50	13.13	7.65	8.02	6.18	3.95	3.67	8.89	5.50	6.14
Required Brent Price	88.94	64.55	75.46	74.77	88.22	80.55	77.11	133.00	65.79	49.55	67.89	63.13	68.56

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Concho Resources Inc. (CXO - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.84	11.51	12.97	16.06	15.58	18.01	16.84	13.42	11.02	11.39	12.16	11.64	12.63
Exploration Expense	6.26	1.14	0.78	0.61	1.81	4.33	8.91	1.46	1.89	1.11	0.88	1.20	2.27
G&A/Other	6.63	5.57	4.88	5.02	6.06	6.72	6.38	5.72	5.51	4.58	4.23	4.65	5.06
F&D Costs (1-Year)	24.82	8.98	21.71	25.56	30.57	28.08	24.00	59.54	27.38	19.69	28.09	26.02	27.19
Return on Capital	32.21	11.63	30.44	27.54	29.83	26.67	22.99	43.15	22.40	14.64	22.04	20.41	21.83
Income Taxes	18.73	24.61	20.39	17.09	18.35	13.20	13.57	20.54	13.42	8.51	6.47	9.74	10.88
Breakeven Oil Price	**103.49**	**63.44**	**91.17**	**91.88**	**102.20**	**97.02**	**92.69**	**143.84**	**81.61**	**59.92**	**73.87**	**73.66**	**79.86**
Quality Differential	(3.15)	10.11	(0.36)	5.55	17.71	10.18	10.25	8.01	5.31	4.81	11.55	7.22	7.99
Required Brent Price	**100.34**	**73.55**	**90.82**	**97.42**	**119.91**	**107.20**	**102.95**	**151.84**	**86.92**	**64.73**	**85.42**	**80.89**	**87.85**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.84	11.51	12.97	16.06	15.58	18.01	16.84	13.42	11.02	11.39	12.16	11.64	12.63
Exploration Expense	6.26	1.14	0.78	0.61	1.81	4.33	8.91	1.46	1.89	1.11	0.88	1.20	2.27
G&A/Other	6.63	5.57	4.88	5.02	6.06	6.72	6.38	5.72	5.51	4.58	4.23	4.65	5.06
F&D Costs (1-Year)	38.67	20.32	28.74	29.76	42.97	38.76	36.75	31.11	26.42	19.85	38.00	30.50	30.43
Return on Capital	49.42	26.07	38.84	31.76	42.07	36.90	35.26	22.00	21.61	14.76	29.59	23.93	24.41
Income Taxes	28.74	55.14	26.02	19.71	25.87	18.26	20.82	10.47	12.95	8.58	8.69	11.42	12.16
Breakeven Oil Price	**144.57**	**119.75**	**112.23**	**102.92**	**134.35**	**122.99**	**124.95**	**84.18**	**79.40**	**60.28**	**93.55**	**83.34**	**86.96**
Quality Differential	(3.15)	10.11	(0.36)	5.55	17.71	10.18	10.25	8.01	5.31	4.81	11.55	7.22	7.99
Required Brent Price	**141.42**	**129.86**	**111.88**	**108.47**	**152.06**	**133.16**	**135.21**	**92.19**	**84.71**	**65.09**	**105.10**	**90.57**	**94.95**

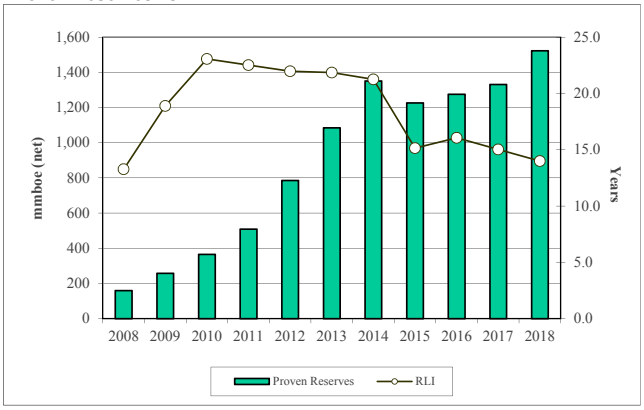
Source: BMO Capital Markets, Company Reports

Continental Resources (CLR - NYSE) US$, net

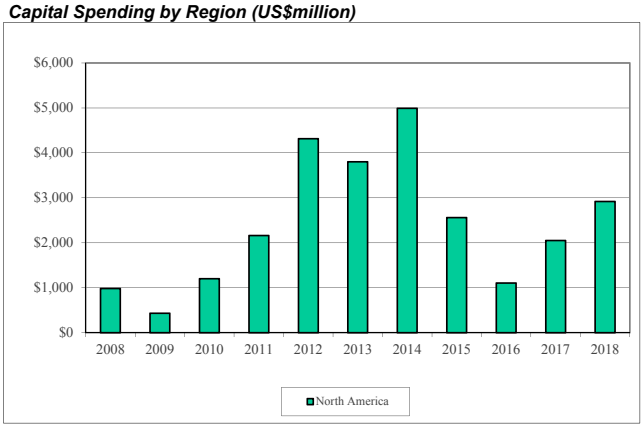
- Continental reported strong results of operations of $13.16/boe in 2018 versus $6.00 /boe in 2017.
- The company reported one-year F&D costs of $9.48/boe, lower than $12.81/boe last year. On a realized oil:gas ratio basis, F&D costs dropped to $13.34/boe from $21.82/boe, while the costs for PD reserves fell to $11.98/boe from $17.33/boe last year.
- Continental's 2018 results imply a Brent breakeven oil price of $48.27/boe on a realized ratio basis, while its PD costs imply a breakeven oil price of $45.34/boe.
- The company reported ROCE of 10.3% in 2018 versus 20.3% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

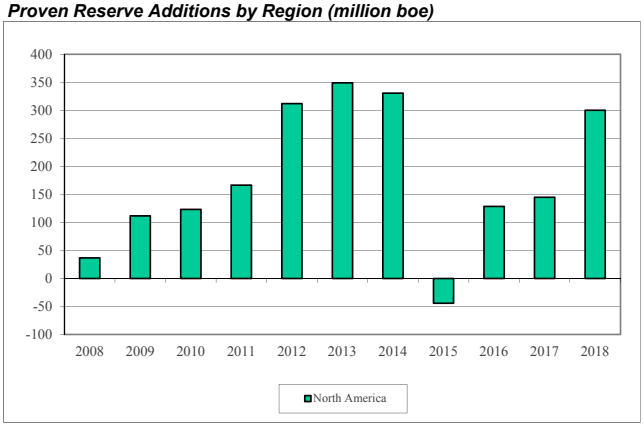
Proven Reserves vs RLI



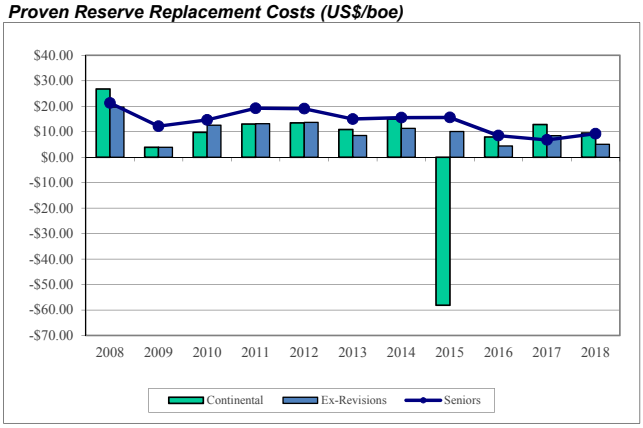
Capital Spending by Region (US$million)



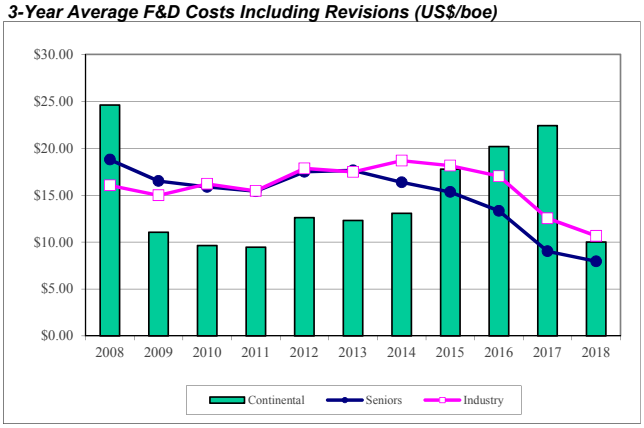
Proven Reserve Additions by Region (million boe)



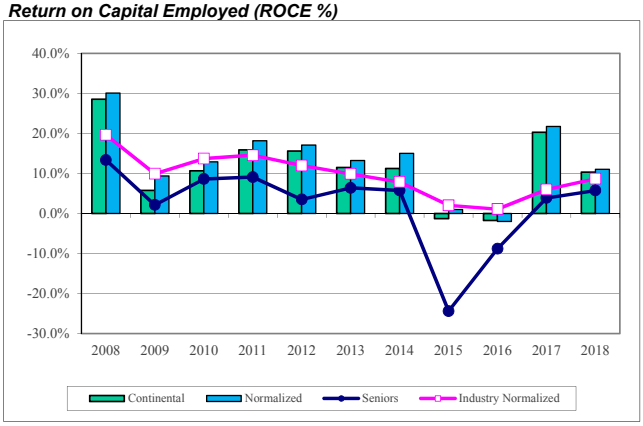
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



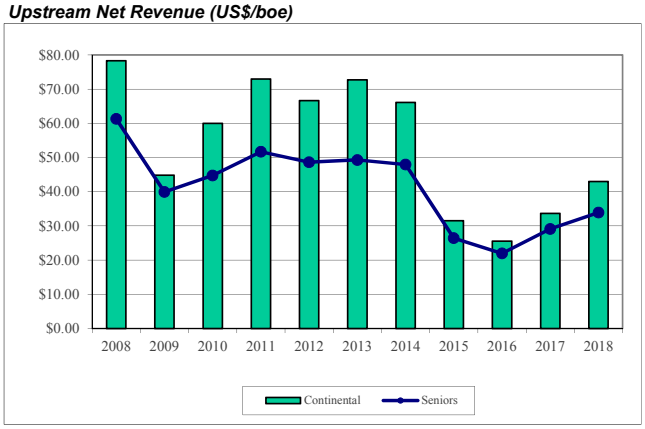
Source: BMO Capital Markets, Company Reports

Continental Resources (CLR - NYSE)

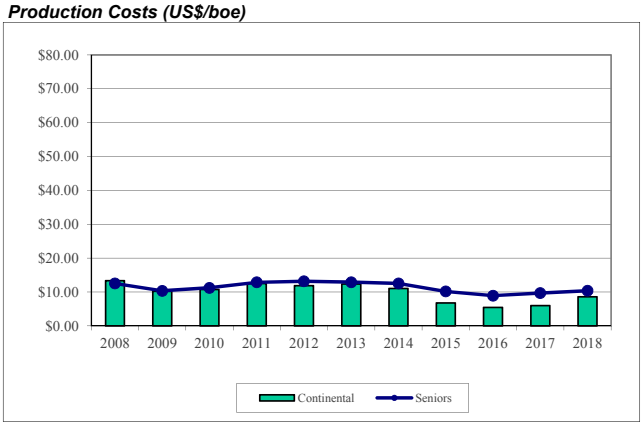
US$/boe, net

North America

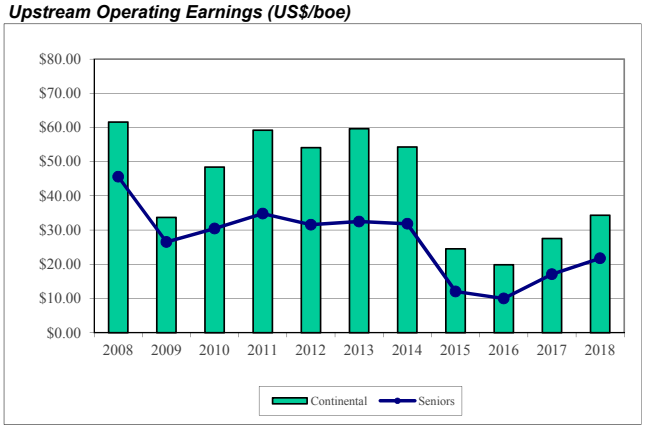
Upstream Net Revenue (US$/boe)



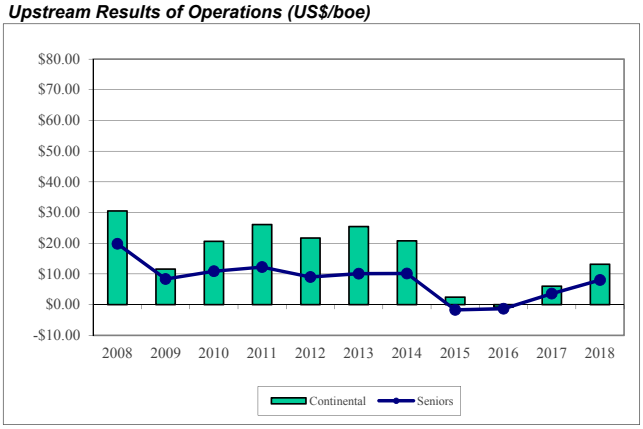
Production Costs (US$/boe)



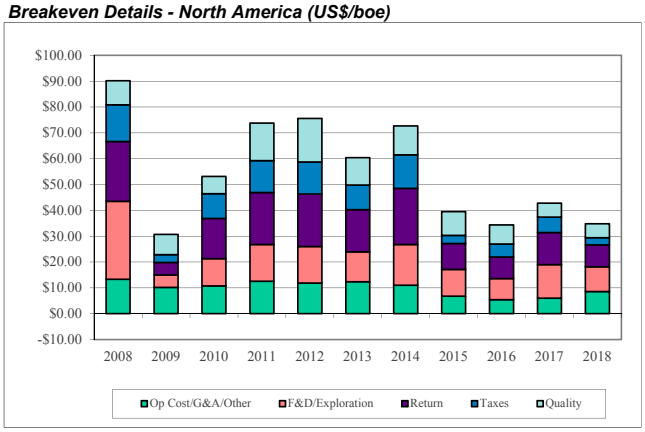
Upstream Operating Earnings (US$/boe)



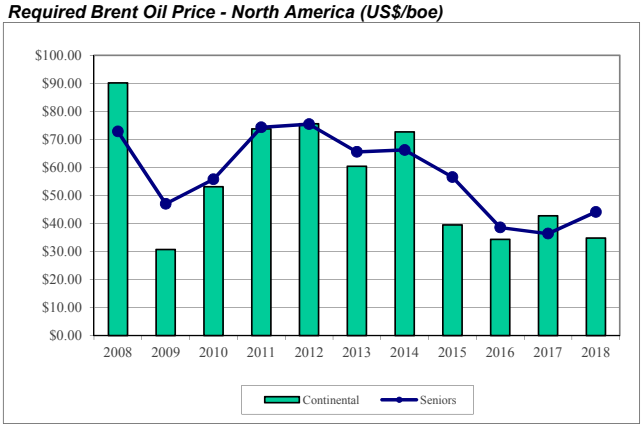
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Continental Resources (CLR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	940	611	949	1,647	2,379	3,607	4,203	2,553	2,027	2,983	4,679
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	21	16	(109)	2	193	(152)	599	128	(47)	138	31
Total Revenue and Other Income	960	626	839	1,650	2,573	3,455	4,802	2,680	1,980	3,121	4,710
Crude Oil and Product Purchases		-	-	-	-	-					
Production and Transportation Expenses	102	93	93	140	200	287	352	349	289	324	390
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	40	13	13	28	24	35	50	19	17	12	8
General and Administrative	36	41	49	73	122	144	185	190	170	192	184
Depreciation, Depletion and Amortization	149	208	244	391	692	966	1,359	1,749	1,709	1,675	1,859
Interest, net	12	23	53	77	141	235	284	313	321	294	293
Other	103	138	129	254	239	575	1,010	595	108	467	679
Earnings Before Income Tax	519	110	258	687	1,155	1,213	1,562	(535)	(632)	156	1,297
Current Income Taxes	13	3	13	13	11	6	0	0	(23)	(8)	(8)
Future Income Taxes	184	36	77	245	405	443	585	(181)	(210)	(626)	315
Total Income Taxes	198	39	90	258	416	449	585	(181)	(233)	(633)	307
Minority Interest	-	-	-	-	-	-	-	-	-	-	(1)
Earnings From Continuing Operations	321	71	168	429	739	764	977	(354)	(400)	789	988
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	321	71	168	429	739	764	977	(354)	(400)	789	988
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	321	71	168	429	739	764	977	(354)	(400)	789	988

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	321	71	168	429	739	764	977	(354)	(400)	789	988
Charges and Credits Not Impacting Cash	382	335	389	753	1,223	1,638	2,594	1,976	1,742	1,283	2,299
Other	(18)	13	147	(5)	(317)	172	(89)	7	(54)	5	43
Cash Flow From Operations	685	419	705	1,177	1,645	2,574	3,482	1,628	1,288	2,078	3,330
Change in Working Capital / Other	35	(46)	(51)	(110)	(13)	(11)	(127)	229	(162)	1	126
Net Cash From Operating Activities	720	373	654	1,067	1,632	2,564	3,356	1,857	1,126	2,079	3,456
Total Capital Expenditures	(841)	(497)	(1,031)	(1,926)	(3,494)	(3,661)	(4,604)	(3,043)	(1,154)	(1,932)	(2,841)
Acquisitions, net	(89)	(9)	(52)	(110)	(624)	(79)	80	33	627	136	23
Other	3	7	44	31	215	28	(63)	(37)	(5)	(13)	(42)
Net Cash From Investing Activities	(928)	(500)	(1,039)	(2,005)	(3,903)	(3,711)	(4,587)	(3,046)	(533)	(1,809)	(2,860)
Net Change in Debt	211	147	391	988	2,256	1,157	1,270	1,186	(550)	(231)	(603)
Net Change in Common Stock	(7)	(4)	(8)	(5)	(11)	(15)	(17)	(7)	(9)	(12)	(17)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(0)	(0)	(0)	-	-	-	-	-	-	-	-
Other	(0)	(7)	(4)	(0)	8	(2)	(26)	9	(29)	(0)	263
Net Cash From Financing Activities	204	136	380	982	2,253	1,140	1,228	1,187	(588)	(243)	(357)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	(0)	(11)	(0)	(0)	(0)
Net Increase/(Decrease) in Cash	(4)	9	(5)	45	(18)	(7)	(4)	(13)	5	27	239
Cash and Equivalents, Beginning of Year	9	5	14	9	53	36	28	24	11	17	44
Cash and Equivalents, End of Year	5	14	9	53	36	29	24	11	17	44	283

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Continental Resources (CLR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	278	236	582	936	947	1,147	1,390	822	913	1,252	1,412
Net Property, Plant and Equipment	1,935	2,068	2,982	4,682	8,105	10,721	13,636	14,063	12,881	12,934	13,870
Other Assets	3	11	27	28	88	73	120	34	17	14	16
Total Assets	2,216	2,315	3,592	5,646	9,140	11,941	15,145	14,920	13,812	14,200	15,298
Total Current Liabilities	404	220	702	1,112	1,126	1,473	1,952	923	932	1,330	1,388
Long-term Debt	376	524	926	1,254	3,538	4,714	5,996	7,116	6,578	6,351	5,766
Deferred Income Taxes	446	489	583	850	1,263	1,737	2,141	2,090	1,890	1,260	1,574
Other Liabilities and Deferred Credits	41	52	173	122	50	64	88	122	109	127	148
Total Liabilities	1,267	1,285	2,384	3,338	5,976	7,988	10,177	10,251	9,510	9,068	8,876
Minority Interests	-	-	-	-	-	-	-	-	-	-	277
Common Shares	2	2	2	2	2	2	4	4	4	4	4
Contributed Surplus (Paid-in Capital)	420	430	440	1,111	1,227	1,252	1,288	1,346	1,375	1,409	1,435
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	527	598	767	1,196	1,935	2,699	3,677	3,323	2,923	3,718	4,706
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	(0)	(3)	(0)	0	0
Total Shareholders' Equity	949	1,030	1,208	2,308	3,164	3,953	4,968	4,669	4,302	5,131	6,145
Total Liabilities and Shareholders' Equity	2,216	2,315	3,592	5,646	9,140	11,941	15,145	14,920	13,812	14,200	15,298
Return on Capital Employed (ROCE)	**28.6%**	**5.8%**	**10.7%**	**15.9%**	**15.6%**	**11.5%**	**11.3%**	**-1.3%**	**-1.7%**	**20.3%**	**10.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	940	611	949	1,647	2,379	3,607	4,203	2,553	2,027	2,983	4,679	9,689	16,444
Production Costs	160	139	170	283	424	614	702	550	432	532	935	1,899	3,151
Exploration	40	13	13	28	24	35	50	19	17	12	8	37	106
DD&A	149	204	240	384	683	954	1,338	1,722	1,679	1,652	1,839	5,171	8,232
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	591	255	526	952	1,249	2,004	2,112	261	-101	786	1,897	2,581	4,955
Income Taxes	224	97	200	363	475	741	790	62	-38	255	465	681	1,534
Results Of Operations	366	158	326	589	774	1,262	1,322	199	-63	531	1,432	1,900	3,421

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	940	611	949	1,647	2,379	3,607	4,203	2,553	2,027	2,983	4,679	9,689	16,444
Production Costs	160	139	170	283	424	614	702	550	432	532	935	1,899	3,151
Exploration	40	13	13	28	24	35	50	19	17	12	8	37	106
DD&A	149	204	240	384	683	954	1,338	1,722	1,679	1,652	1,839	5,171	8,232
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	591	255	526	952	1,249	2,004	2,112	261	-101	786	1,897	2,581	4,955
Income Taxes	224	97	200	363	475	741	790	62	-38	255	465	681	1,534
Results Of Operations	366	158	326	589	774	1,262	1,322	199	-63	531	1,432	1,900	3,421

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Continental Resources (CLR - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$78.29	$44.83	$59.99	$72.96	$66.62	$72.70	$66.11	$31.54	$25.53	$33.68	$42.99	$35.00	$39.03
Production Costs	$13.35	$10.20	$10.74	$12.53	$11.87	$12.38	$11.05	$6.79	$5.44	$6.01	$8.59	$6.86	$7.48
Exploration	$3.35	$0.93	$0.81	$1.24	$0.66	$0.70	$0.79	$0.24	$0.21	$0.14	$0.07	$0.13	$0.25
DD&A	$12.40	$15.01	$15.16	$17.02	$19.13	$19.23	$21.05	$21.28	$21.15	$18.66	$16.90	$18.68	$19.54
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$49.19	$18.70	$33.28	$42.17	$34.97	$40.39	$33.22	$3.23	-$1.27	$8.87	$17.43	$9.33	$11.76
Income Taxes	$18.69	$7.10	$12.65	$16.07	$13.29	$14.94	$12.43	$0.77	-$0.48	$2.87	$4.27	$2.46	$3.64
Results Of Operations	$30.50	$11.59	$20.63	$26.10	$21.68	$25.44	$20.80	$2.46	-$0.80	$6.00	$13.16	$6.86	$8.12

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$78.29	$44.83	$59.99	$72.96	$66.62	$72.70	$66.11	$31.54	$25.53	$33.68	$42.99	$35.00	$39.03
Production Costs	$13.35	$10.20	$10.74	$12.53	$11.87	$12.38	$11.05	$6.79	$5.44	$6.01	$8.59	$6.86	$7.48
Exploration	$3.35	$0.93	$0.81	$1.24	$0.66	$0.70	$0.79	$0.24	$0.21	$0.14	$0.07	$0.13	$0.25
DD&A	$12.40	$15.01	$15.16	$17.02	$19.13	$19.23	$21.05	$21.28	$21.15	$18.66	$16.90	$18.68	$19.54
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$49.19	$18.70	$33.28	$42.17	$34.97	$40.39	$33.22	$3.23	-$1.27	$8.87	$17.43	$9.33	$11.76
Income Taxes	$18.69	$7.10	$12.65	$16.07	$13.29	$14.94	$12.43	$0.77	-$0.48	$2.87	$4.27	$2.46	$3.64
Results Of Operations	$30.50	$11.59	$20.63	$26.10	$21.68	$25.44	$20.80	$2.46	-$0.80	$6.00	$13.16	$6.86	$8.12

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Continental Resources (CLR - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	47.0	59.2	65.6	100.5	175.0	240.4	313.1	450.6	534.9	625.1	780.1	646.7	540.8
Liquids Production (b/d)	25,060	27,458	32,384	45,121	68,685	95,860	122,000	146,622	128,356	138,455	168,175	144,995	140,722
Total Production (boe/d)	32,892	37,323	43,316	61,865	97,852	135,920	174,189	221,715	217,507	242,637	298,189	252,778	230,847
% Gas Production	24%	26%	25%	27%	30%	29%	30%	34%	41%	43%	44%	43%	39%
% Oil Production	76%	74%	75%	73%	70%	71%	70%	66%	59%	57%	56%	57%	61%
Proven Reserves:													
Gas Reserves (bcf)	318.1	504.1	839.6	1,093.8	1,341.1	2,078.0	2,908.4	3,151.8	3,789.8	4,140.3	4,591.6	4,173.9	3,716.4
Oil Reserves (mmbbls)	106.2	173.3	224.8	326.1	561.2	737.8	866.4	700.5	643.2	640.9	757.1	680.4	721.6
Total Proven Reserves (mmboe)	159.3	257.3	364.7	508.4	784.7	1,084.1	1,351.1	1,225.8	1,274.9	1,331.0	1,522.4	1,376.1	1,341.0
% Gas Reserves	33%	33%	38%	36%	28%	32%	36%	43%	50%	52%	50%	51%	46%
% Oil Reserves	67%	67%	62%	64%	72%	68%	64%	57%	50%	48%	50%	49%	54%
Proven Reserve Life Index	13.3	18.9	23.1	22.5	22.0	21.9	21.3	15.1	16.1	15.0	14.0	15.0	16.3
Proven Reserve Additions:													
Gas Additions (bcf)	152.5	207.5	359.4	290.9	311.1	824.7	944.7	407.9	833.3	578.6	736.1	2,148.0	3,500.5
Oil Additions (mmbbls)	11.2	77.1	63.3	117.8	260.1	211.6	173.1	-112.3	-10.4	48.3	177.5	215.4	276.1
Total Additions (mmboe)	36.7	111.7	123.2	166.3	312.0	349.1	330.5	-44.4	128.4	144.7	300.2	573.3	859.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	47.6	110.5	95.2	162.0	233.7	444.7	440.6	253.2	249.4	240.2	565.0	1,054.7	1,748.5
Acquisitions	2.2	0.0	0.4	2.1	82.0	0.5	1.1	0.0	0.0	1.7	12.4	14.1	15.2
Dispositions	0.0	0.0	0.0	0.0	-7.8	0.0	-3.2	-0.3	-10.5	-15.2	-8.0	-33.7	-37.3
Revisions of Estimates	-13.2	1.2	27.6	2.2	4.1	-96.1	-107.9	-297.2	-110.5	-82.0	-269.3	-461.7	-866.9
Components as % of Total Additions:													
Extensions, Discoveries and Additions	130.0%	98.9%	77.3%	97.4%	74.9%	127.4%	133.3%	-570.8%	194.2%	166.0%	188.2%	183.9%	203.4%
Acquisitions	6.1%	0.0%	0.3%	1.3%	26.3%	0.1%	0.3%	0.0%	0.0%	1.2%	4.1%	2.5%	1.8%
Dispositions	0.0%	0.0%	0.0%	0.0%	-2.5%	0.0%	-1.0%	0.7%	-8.2%	-10.5%	-2.7%	-5.9%	-4.3%
Revisions of Estimates	-36.1%	1.1%	22.4%	1.3%	1.3%	-27.5%	-32.7%	670.1%	-86.0%	-56.7%	-89.7%	-80.5%	-100.9%
Additions as % of Production:													
Gas	889.0%	960.6%	1501.2%	793.4%	487.1%	940.0%	826.5%	248.0%	426.8%	253.6%	258.5%	303.3%	354.7%
Oil	122.9%	768.9%	535.7%	715.4%	1037.5%	604.8%	388.7%	-209.9%	-22.3%	95.5%	289.2%	135.6%	107.5%
Total	305.3%	819.6%	779.4%	736.5%	873.4%	703.6%	519.9%	-54.8%	161.8%	163.4%	275.8%	207.1%	204.0%
Additions as % of Reserves:													
Gas	47.9%	41.2%	42.8%	26.6%	23.2%	39.7%	32.5%	12.9%	22.0%	14.0%	16.0%	51.5%	94.2%
Oil	10.6%	44.5%	28.2%	36.1%	46.4%	28.7%	20.0%	-16.0%	-1.6%	7.5%	23.4%	31.6%	38.3%
Total	23.0%	43.4%	33.8%	32.7%	39.8%	32.2%	24.5%	-3.6%	10.1%	10.9%	19.7%	41.7%	64.1%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$235.3	$96.4	$289.2	$734.8	$857.7	$687.8	$863.6	$241.5	$182.4	$123.5	$81.0	$386.8	$1,492.0
Development	$471.8	$260.4	$565.6	$1,178.1	$1,975.7	$2,549.2	$3,670.4	$2,148.5	$767.1	$1,696.0	$2,478.3	$4,941.4	$10,760.4
Acquisitions	$274.3	$74.5	$347.4	$248.6	$1,484.0	$563.5	$458.4	$169.0	$155.0	$229.3	$361.2	$745.5	$1,373.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$981.4	$431.3	$1,202.1	$2,161.5	$4,317.4	$3,800.5	$4,992.5	$2,559.1	$1,104.5	$2,048.7	$2,920.5	$6,073.7	$13,625.3
Expenditures as % of Total:													
Exploration	24.0%	22.4%	24.1%	34.0%	19.9%	18.1%	17.3%	9.4%	16.5%	6.0%	2.8%	6.4%	10.9%
Development	48.1%	60.4%	47.0%	54.5%	45.8%	67.1%	73.5%	84.0%	69.5%	82.8%	84.9%	81.4%	79.0%
Acquisitions	27.9%	17.3%	28.9%	11.5%	34.4%	14.8%	9.2%	6.6%	14.0%	11.2%	12.4%	12.3%	10.1%
Cashflow (C$million)	$684.8	$419.0	$704.7	$1,176.9	$1,645.1	$2,574.4	$3,482.4	$1,628.5	$1,288.1	$2,077.7	$3,330.3	$6,696.1	$11,807.0
Cashflow (C$/boe)	$57.04	$30.76	$44.57	$52.12	$46.06	$51.89	$54.77	$20.12	$16.23	$23.46	$30.60	$24.19	$28.03
Recycle Ratio	2.1x	8.0x	4.6x	4.0x	3.4x	4.8x	3.7x	-0.3x	2.0x	1.8x	3.2x	2.4x	1.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$20.54	$3.20	$6.96	$11.65	$11.91	$9.29	$13.63	-$54.29	$6.83	$11.50	$8.65	$8.99	$13.90
Acquisition Costs	$123.01	$15,962.14	$944.03	$119.01	$18.10	$1,230.76	$416.90	na	na	$135.29	$29.02	$52.73	$90.10
All Sources (incl. revisions)	$26.77	$3.86	$9.76	$13.00	$13.50	$10.89	$14.96	-$58.13	$7.95	$12.81	$9.48	$10.01	$15.19
Exploration & Development (excl. revisions)	$14.84	$3.23	$8.98	$11.81	$12.13	$7.28	$10.29	$9.44	$3.81	$7.57	$4.53	$5.05	$7.01
Acquisition Costs	$123.01	$15,962.14	$944.03	$119.01	$18.10	$1,230.76	$416.90	na	na	$135.29	$29.02	$52.73	$90.10
All Sources (excl. revisions)	$19.68	$3.90	$12.57	$13.17	$13.68	$8.54	$11.30	$10.11	$4.43	$8.47	$5.06	$5.68	$7.73

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Continental Resources (CLR - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	13.35	10.20	10.74	12.53	11.87	12.38	11.05	6.79	5.44	6.01	8.59	6.86	7.48
Exploration Expense	3.35	0.93	0.81	1.24	0.66	0.70	0.79	0.24	0.21	0.14	0.07	0.13	0.25
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	26.77	3.86	9.76	13.00	13.50	10.89	14.96	10.11	7.95	12.81	9.48	10.01	11.06
Return on Capital	23.18	4.87	15.57	20.11	20.29	16.28	21.74	10.01	8.36	12.47	8.52	9.82	11.77
Income Taxes	14.21	2.99	9.54	12.38	12.44	9.56	12.99	3.14	5.01	5.97	2.76	3.52	5.28
Breakeven Oil Price	80.85	22.84	46.42	59.26	58.75	49.82	61.52	30.29	26.97	37.40	29.42	30.34	35.84
Quality Differential	9.30	7.85	6.72	14.50	16.84	10.58	11.16	9.22	7.38	5.37	5.38	6.04	7.70
Required Brent Price	90.15	30.69	53.14	73.76	75.59	60.41	72.68	39.51	34.34	42.77	34.80	36.38	43.54

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	13.35	10.20	10.74	12.53	11.87	12.38	11.05	6.79	5.44	6.01	8.59	6.86	7.48
Exploration Expense	3.35	0.93	0.81	1.24	0.66	0.70	0.79	0.24	0.21	0.14	0.07	0.13	0.25
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	26.77	3.86	9.76	13.00	13.50	10.89	14.96	10.11	7.95	12.81	9.48	10.01	11.06
Return on Capital	23.18	4.87	15.57	20.11	20.29	16.28	21.74	10.01	8.36	12.47	8.52	9.82	11.77
Income Taxes	14.21	2.99	9.54	12.38	12.44	9.56	12.99	3.14	5.01	5.97	2.76	3.52	5.28
Breakeven Oil Price	80.85	22.84	46.42	59.26	58.75	49.82	61.52	30.29	26.97	37.40	29.42	30.34	35.84
Quality Differential	9.30	7.85	6.72	14.50	16.84	10.58	11.16	9.22	7.38	5.37	5.38	6.04	7.70
Required Brent Price	90.15	30.69	53.14	73.76	75.59	60.41	72.68	39.51	34.34	42.77	34.80	36.38	43.54

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Continental Resources (CLR - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.29	12.29	12.73	15.18	15.01	15.46	13.47	8.74	7.56	8.17	12.33	9.58	10.06
Exploration Expense	3.83	1.12	0.96	1.50	0.83	0.88	0.96	0.31	0.30	0.19	0.10	0.19	0.34
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	42.52	4.83	13.95	16.01	15.26	14.83	21.04	14.60	26.12	21.82	13.34	17.11	19.39
Return on Capital	35.44	5.74	19.73	22.75	23.33	21.60	28.92	13.10	24.87	19.49	11.16	15.28	19.35
Income Taxes	21.72	3.52	12.09	14.01	14.30	12.69	17.28	4.12	14.90	9.34	3.62	5.48	8.68
Breakeven Oil Price	**118.81**	**27.50**	**59.46**	**69.45**	**68.73**	**65.45**	**81.67**	**40.86**	**73.74**	**59.01**	**40.55**	**47.63**	**57.82**
Quality Differential	10.65	9.47	7.97	17.57	21.30	13.21	13.62	11.86	10.25	7.29	7.72	8.42	10.15
Required Brent Price	**129.46**	**36.96**	**67.43**	**87.02**	**90.03**	**78.67**	**95.29**	**52.72**	**83.99**	**66.31**	**48.27**	**56.05**	**67.97**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.29	12.29	12.73	15.18	15.01	15.46	13.47	8.74	7.56	8.17	12.33	9.58	10.06
Exploration Expense	3.83	1.12	0.96	1.50	0.83	0.88	0.96	0.31	0.30	0.19	0.10	0.19	0.34
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	75.33	25.16	35.92	30.93	35.33	36.68	38.47	28.25	29.17	17.33	11.98	15.19	25.04
Return on Capital	59.40	29.67	48.77	42.24	50.99	50.86	51.21	25.36	27.70	15.49	9.98	13.53	24.66
Income Taxes	36.41	18.18	29.89	26.00	31.25	29.87	30.59	7.97	16.59	7.42	3.24	4.85	11.06
Breakeven Oil Price	**190.26**	**86.41**	**128.28**	**115.85**	**133.42**	**133.76**	**134.71**	**70.62**	**81.31**	**48.61**	**37.62**	**43.34**	**71.16**
Quality Differential	10.65	9.47	7.97	17.57	21.30	13.21	13.62	11.86	10.25	7.29	7.72	8.42	10.15
Required Brent Price	**200.91**	**95.88**	**136.25**	**133.42**	**154.71**	**146.97**	**148.33**	**82.48**	**91.56**	**55.90**	**45.34**	**51.76**	**81.30**

Source: BMO Capital Markets, Company Reports

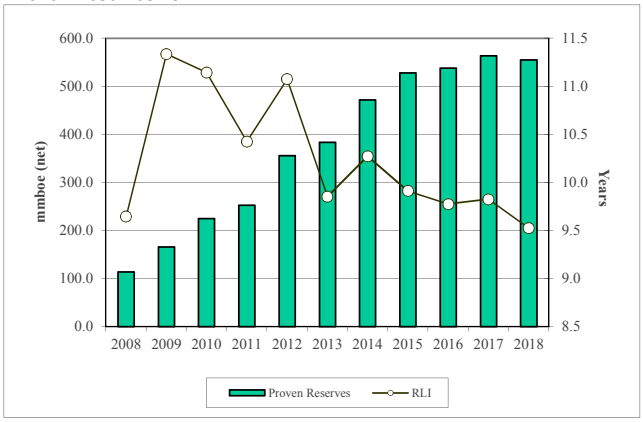
See pages F1 to F4 for analyst coverage.

Crescent Point Energy Corp. (CPG - TSX) US$, net

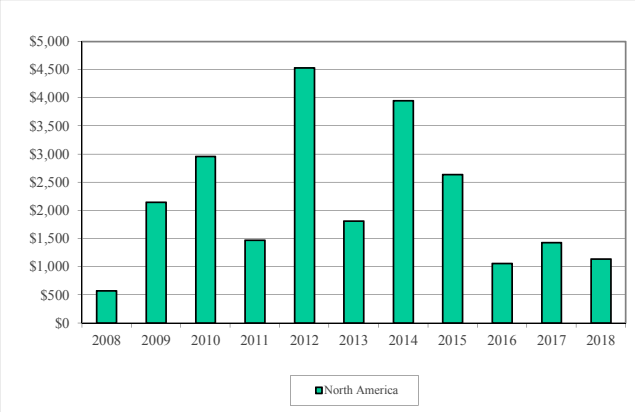
- Crescent Point reported results of operations of $2.19/boe in 2018 versus results of $3.78/boe in 2017.
- The company's F&D costs increased to $23.90/boe versus $16.82/boe last year. On a realized oil:gas price ratio basis, F&D costs declined rose to $23.90/boe from $18.60/boe in 2017, while costs for PD reserves decreased to $16.89/boe from $18.25/boe last year.
- Crescent Point's 2018 results imply a Brent breakeven oil price of $80.37/boe on a realized ratio basis, while its PD costs imply a breakeven oil price of $67.77/boe.
- The company reported a loss on capital employed of 20.3% in 2018 (normalized to a gain of 2.0%) versus a gain on capital of 5.3% in 2017 (normalized to 13.2%).

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

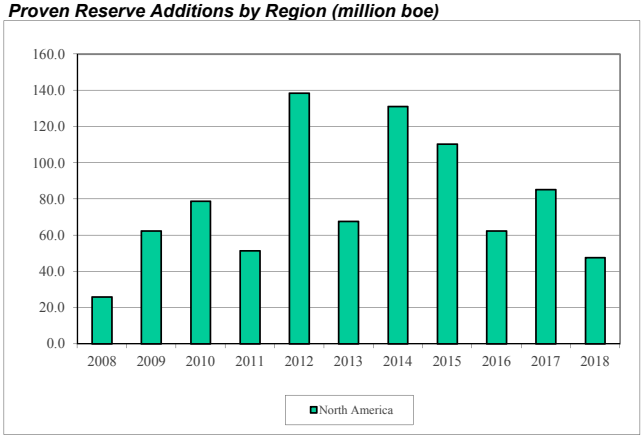
Proven Reserves vs RLI



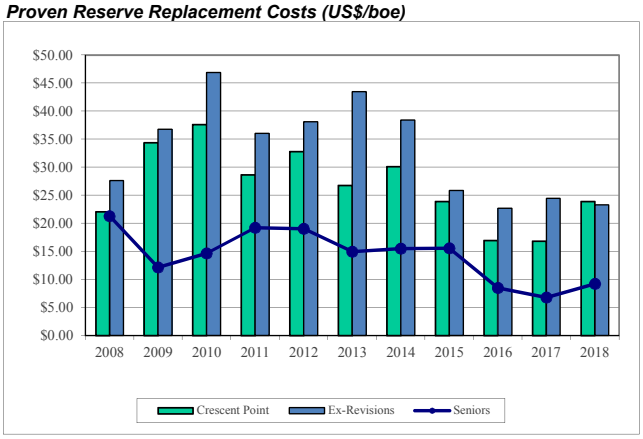
Capital Spending by Region (US$million)



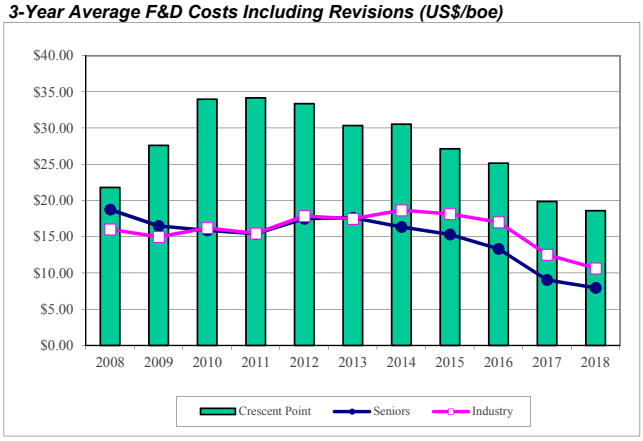
Proven Reserve Additions by Region (million boe)



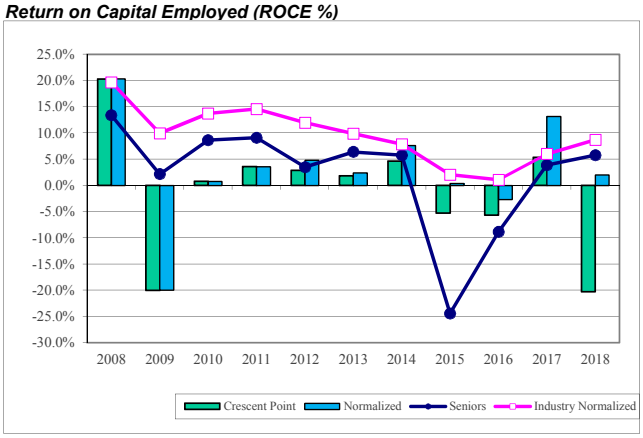
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

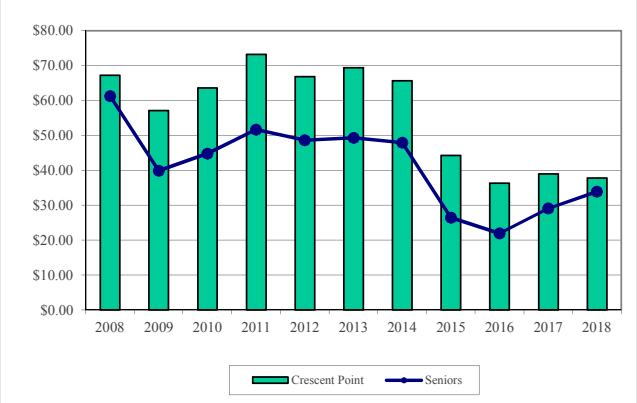
See pages F1 to F4 for analyst coverage.

Crescent Point Energy Corp. (CPG - TSX)

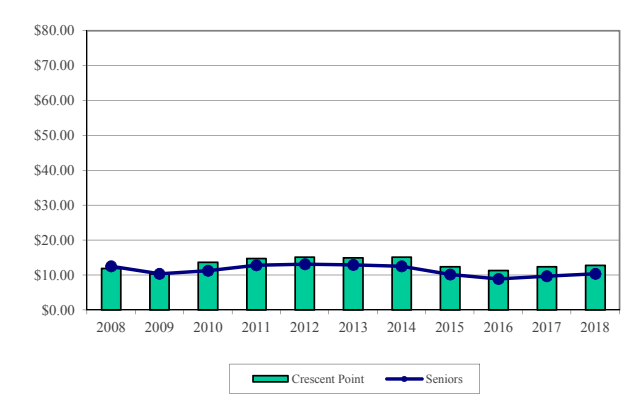
US$/boe, net

North America

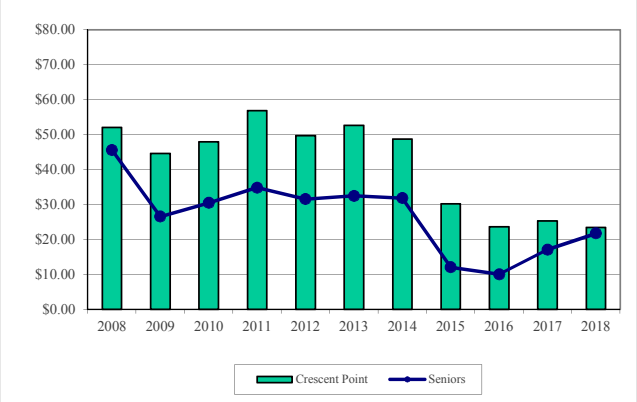
Upstream Net Revenue (US$/boe)



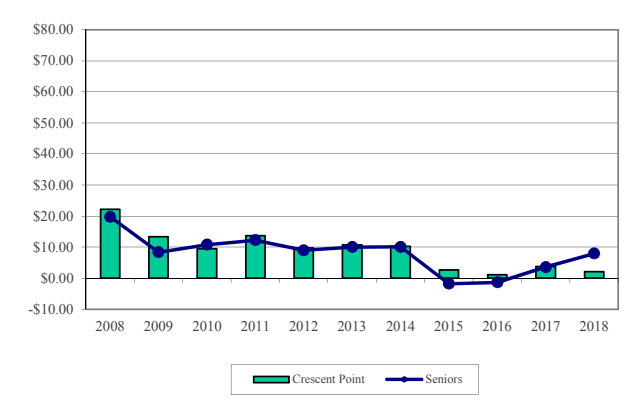
Production Costs (US$/boe)



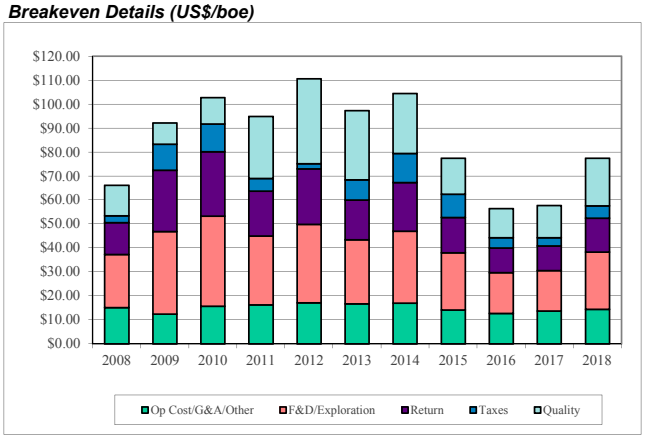
Upstream Operating Earnings (US$/boe)



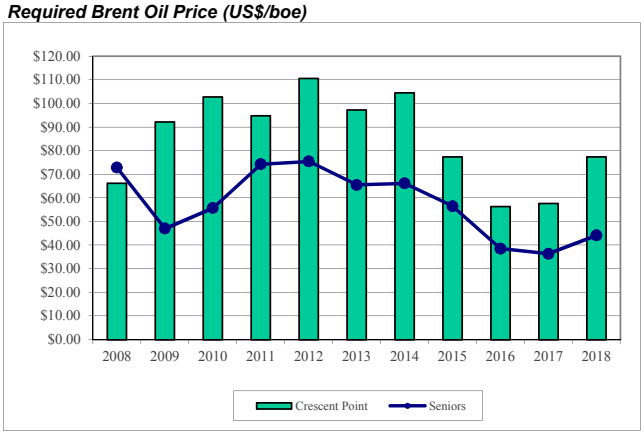
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Crescent Point Energy Corp. (CPG - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	937	713	1,244	1,837	2,228	2,799	3,134	1,852	1,650	2,139	2,489
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	135	(80)	(50)	(71)	108	(207)	681	688	(185)	(26)	46
Total Revenue and Other Income	1,072	633	1,193	1,766	2,336	2,593	3,814	2,540	1,466	2,113	2,536
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	140	150	277	356	488	583	693	662	621	711	745
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	39	32	40	39	63	66	83	87	76	74	92
Depreciation, Depletion and Amortization	298	373	696	950	1,256	1,419	1,480	1,373	1,215	1,162	1,194
Interest, net	32	31	58	61	72	76	94	114	120	123	139
Other	29	40	57	88	238	224	708	1,415	406	38	3,029
Earnings Before Income Tax	530	1	54	261	209	212	736	(1,131)	(993)	(18)	(2,686)
Current Income Taxes	19	14	27	(3)	(1)	0	0	(1)	0	(1)	0
Future Income Taxes (Recovery)	73	15	8	61	19	71	275	(448)	(288)	77	(709)
Total Income Taxes	92	29	34	58	18	71	275	(450)	(288)	76	(709)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	438	(27)	19	203	191	141	461	(681)	(705)	(94)	(1,977)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	438	(27)	19	203	191	141	461	(681)	(705)	(94)	(1,977)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	438	(27)	19	203	191	141	461	(681)	(705)	(94)	(1,977)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	438	(27)	19	203	191	141	461	(681)	(705)	(94)	(1,977)
Charges and Credits Not Impacting Cash	376	387	704	1,012	1,275	1,490	1,756	925	927	1,239	3,283
Other	(257)	231	122	86	137	246	(82)	1,251	952	139	(14)
Cash Flow From Operations	556	591	846	1,302	1,603	1,877	2,134	1,494	1,174	1,284	1,292
Change in Working Capital / Other	(5)	(17)	(53)	36	(58)	40	90	38	(23)	14	28
Net Cash From Operating Activities	552	574	793	1,338	1,545	1,917	2,224	1,533	1,152	1,298	1,321
Total Capital Expenditures	(437)	(313)	(944)	(1,267)	(1,510)	(1,697)	(1,964)	(1,257)	(886)	(1,401)	(1,373)
Acquisitions, net	(9)	(539)	(622)	(208)	(1,857)	(124)	(766)	(18)	(168)	(32)	172
Other	(202)	20	64	0	74	133	(93)	(129)	27	(48)	61
Net Cash From Investing Activities	(648)	(832)	(1,501)	(1,475)	(3,293)	(1,688)	(2,823)	(1,405)	(1,028)	(1,481)	(1,140)
Net Change in Debt	292	(498)	290	79	149	193	640	8	(417)	412	(119)
Net Issuance of Trust Units	117	1,148	686	377	1,947	(1)	693	494	471	(2)	(1)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Distributions Paid	(306)	(399)	(272)	(318)	(349)	(410)	(756)	(588)	(197)	(149)	(150)
Other	(7)	7	5	(1)	2	5	11	(30)	11	(41)	53
Net Cash From Financing Activities	96	258	708	137	1,749	(214)	587	(115)	(133)	220	(218)
Effect of Exchange Rate on Cash	-	-	-	-	(1)	1	1	3	0	(1)	2
Net Increase/(Decrease) in Cash	(0)	0	(0)	(0)	0	15	(11)	16	(9)	37	(36)
Cash and Equivalents, Beginning of Year	(0)	(0)	0	0	(0)	(0)	14	3	19	10	47
Cash and Equivalents, End of Year	(0)	0	(0)	(0)	0	15	4	19	10	47	12

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Crescent Point Energy Corp. (CPG - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	169	135	207	312	330	366	860	664	305	385	443
Net Property, Plant and Equipment	2,577	4,351	7,156	7,256	11,408	11,603	12,906	11,711	10,709	10,624	7,880
Other Assets	374	305	276	1,268	402	400	1,148	1,421	1,198	1,083	1,295
Total Assets	3,120	4,791	7,638	8,836	12,139	12,370	14,914	13,796	12,211	12,092	9,618
Total Current Liabilities	131	223	437	689	696	969	988	655	637	652	520
Long-term Debt	866	457	977	1,112	1,475	1,684	2,581	3,430	2,818	3,058	3,156
Deferred Income Taxes	313	446	599	660	793	840	1,221	779	492	416	-
Other Liabilities and Deferred Credits	70	160	262	450	516	622	921	1,002	1,019	1,043	946
Total Liabilities	1,380	1,287	2,275	2,911	3,481	4,115	5,712	5,866	4,965	5,169	4,622
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Unitholders' Capital	1,981	4,149	6,641	7,837	11,314	11,645	12,822	12,290	12,390	12,458	12,501
Contributed Surplus (Paid-in Capital)	28	33	91	128	103	106	107	78	84	55	31
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	542	(678)	(1,366)	(2,047)	(2,758)	(3,586)	(3,946)	(4,886)	(5,615)	(5,856)	(7,983)
Accumulated Cash Distributions / Other	(812)	(0)	(3)	8	(1)	90	220	448	387	266	447
Total Shareholders' Equity	1,740	3,504	5,364	5,925	8,658	8,255	9,203	7,929	7,246	6,923	4,996
Total Liabilities and Shareholders' Equity	3,120	4,791	7,638	8,836	12,139	12,370	14,914	13,796	12,211	12,092	9,618
Return on Capital Employed (ROCE)	**20.3%**	**-20.0%**	**0.8%**	**3.6%**	**2.9%**	**1.8%**	**4.6%**	**-5.3%**	**-5.7%**	**5.3%**	**-20.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	1,072	633	1,193	1,766	2,336	2,593	3,814	2,540	1,466	2,113	2,536	6,114	12,468
Production Costs	140	150	277	356	488	583	693	662	621	711	745	2,076	3,431
Exploration	-	-	-	-	-	-	-	-	-	-	-	0	0
DD&A	298	373	696	950	1,256	1,419	1,480	1,373	1,215	1,162	1,194	3,571	6,424
G&A/Other	39	32	40	39	63	66	83	87	76	74	92	242	413
Pre-tax Results Of Operations	595	78	181	421	529	525	1,558	418 -	447	166	506	225	2,200
Income Taxes	103	23	54	93	46	177	583	166 -	130	41	133	45	794
Results Of Operations	492	55	126	327	483	348	975	252 -	317	124	372	179	1,406

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	1,072	633	1,193	1,766	2,336	2,593	3,814	2,540	1,466	2,113	2,536	6,114	12,468
Production Costs	140	150	277	356	488	583	693	662	621	711	745	2,076	3,431
Exploration	-	-	-	-	-	-	-	-	-	-	-	0	0
DD&A	298	373	696	950	1,256	1,419	1,480	1,373	1,215	1,162	1,194	3,571	6,424
G&A/Other	39	32	40	39	63	66	83	87	76	74	92	242	413
Pre-tax Results Of Operations	595	78	181	421	529	525	1,558	418 -	447	166	506	225	2,200
Income Taxes	103	23	54	93	46	177	583	166 -	130	41	133	45	794
Results Of Operations	492	55	126	327	483	348	975	252 -	317	124	372	179	1,406

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Crescent Point Energy Corp. (CPG - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$67.23	$57.06	$63.61	$73.15	$66.85	$69.32	$65.67	$44.30	$36.32	$38.99	$37.82	$37.73	$43.78
Production Costs	$11.89	$10.27	$13.69	$14.71	$15.16	$14.96	$15.09	$12.42	$11.28	$12.39	$12.78	$12.17	$12.71
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$25.19	$25.49	$34.41	$39.23	$39.04	$36.40	$32.22	$25.76	$22.08	$20.25	$20.48	$20.92	$23.80
G&A/Other	$3.27	$2.19	$1.96	$1.59	$1.97	$1.68	$1.81	$1.64	$1.38	$1.29	$1.58	$1.42	$1.53
Pre-tax Results Of Operations	$26.88	$19.11	$13.55	$17.62	$10.68	$16.27	$16.55	$4.49	$1.58	$5.05	$2.98	$3.22	$5.74
Income Taxes	$4.66	$5.73	$4.07	$3.91	$0.92	$5.48	$6.19	$1.78	$0.46	$1.26	$0.79	$0.86	$1.81
Results Of Operations	$22.22	$13.38	$9.49	$13.71	$9.75	$10.79	$10.36	$2.70	$1.12	$3.78	$2.19	$2.36	$3.93

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$67.23	$57.06	$63.61	$73.15	$66.85	$69.32	$65.67	$44.30	$36.32	$38.99	$37.82	$37.73	$43.78
Production Costs	$11.89	$10.27	$13.69	$14.71	$15.16	$14.96	$15.09	$12.42	$11.28	$12.39	$12.78	$12.17	$12.71
Exploration	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DD&A	25.19	25.49	34.41	39.23	39.04	36.40	32.22	25.76	22.08	20.25	20.48	20.92	23.80
G&A/Other	$3.27	$2.19	$1.96	$1.59	$1.97	$1.68	$1.81	$1.64	$1.38	$1.29	$1.58	$1.42	$1.53
Pre-tax Results Of Operations	$26.88	$19.11	$13.55	$17.62	$10.68	$16.27	$16.55	$4.49	$1.58	$5.05	$2.98	$3.22	$5.74
Income Taxes	$4.66	$5.73	$4.07	$3.91	$0.92	$5.48	$6.19	$1.78	$0.46	$1.26	$0.79	$0.86	$1.81
Results Of Operations	$22.22	$13.38	$9.49	$13.71	$9.75	$10.79	$10.36	$2.70	$1.12	$3.78	$2.19	$2.36	$3.93

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Crescent Point Energy Corp. (CPG - TSX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	25.5	27.3	36.1	39.9	49.5	60.8	67.2	85.4	93.0	95.9	98.2	95.7	87.9
Liquids Production (b/d)	28,123	35,502	49,407	59,736	79,862	96,627	114,655	131,763	135,328	141,160	143,278	139,922	133,237
Total Production (boe/d)	32,369	40,055	55,417	66,381	88,109	106,756	125,849	146,001	150,822	157,150	159,637	155,870	147,892
% Gas Production	13%	11%	11%	10%	9%	9%	9%	10%	10%	10%	10%	10%	10%
% Oil Production	87%	89%	89%	90%	91%	91%	91%	90%	90%	90%	90%	90%	90%
Proven Reserves:													
Closing Gas Reserves (bcf)	60.4	86.8	111.6	123.7	184.6	194.8	205.6	291.6	336.3	370.3	336.7	347.8	308.1
Closing Oil Reserves (mmbbls)	103.9	151.3	206.8	232.0	325.4	351.5	437.6	479.7	482.1	502.0	499.0	494.3	480.1
Closing Total Proven Reserves (mmboe)	114.0	165.7	225.4	252.6	356.2	384.0	471.9	528.3	538.1	563.7	555.1	552.3	531.4
% Gas Reserves	9%	9%	8%	8%	9%	8%	7%	9%	10%	11%	10%	10%	10%
% Oil Reserves	91%	91%	92%	92%	91%	92%	93%	91%	90%	89%	90%	90%	90%
Proven Reserve Life Index	9.7	11.3	11.2	10.4	11.1	9.9	10.3	9.9	9.8	9.8	9.5	9.7	9.9
Proven Reserve Additions:													
Gas Additions (bcf)	9.4	35.9	34.9	25.9	80.9	32.7	35.5	119.1	78.9	68.0	-0.1	146.8	301.4
Oil Additions (mmbbls)	24.4	56.4	72.9	47.1	124.9	62.2	125.2	90.6	49.2	73.8	47.7	170.7	386.4
Total Additions (mmboe)	26.0	62.4	78.7	51.4	138.4	67.7	131.1	110.4	62.4	85.1	47.7	195.2	436.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	17.4	15.3	25.3	37.7	31.3	38.1	46.8	36.4	37.6	51.4	71.2	160.3	243.4
Net Acquisitions	3.4	43.0	37.8	3.1	87.5	3.5	56.0	65.6	9.0	7.2	-22.4	(6.2)	115.4
Revisions of Estimates	5.2	4.1	15.6	10.6	19.6	26.1	28.2	8.5	15.8	26.5	-1.2	41.1	1.4
Components as % of Total Additions:													
Extensions, Discoveries and Additions	66.9%	24.5%	32.1%	73.3%	22.6%	56.3%	35.7%	32.9%	60.4%	60.4%	149.3%	82.1%	55.8%
Net Acquisitions	12.9%	69.0%	48.0%	6.0%	63.3%	5.2%	42.7%	59.4%	14.4%	8.5%	-46.9%	-3.2%	26.4%
Revisions of Estimates	20.2%	6.5%	19.9%	20.7%	14.1%	38.5%	21.5%	7.7%	25.3%	31.2%	-2.4%	21.1%	0.3%
Additions as % of Production:													
Gas	101.3%	359.9%	265.5%	177.9%	448.0%	147.4%	144.9%	381.8%	232.5%	194.2%	-0.2%	140.1%	187.8%
Oil	237.7%	435.5%	404.3%	215.9%	428.4%	176.5%	299.1%	188.3%	99.6%	143.2%	91.2%	111.4%	158.9%
Total	219.8%	426.9%	389.2%	212.1%	430.2%	173.7%	285.4%	207.2%	113.3%	148.4%	81.9%	114.4%	161.8%
Additions as % of Reserves:													
Gas	15.6%	41.3%	31.3%	20.9%	43.8%	16.8%	17.3%	40.8%	23.5%	18.4%	0.0%	42.2%	97.8%
Oil	23.5%	37.3%	35.3%	20.3%	38.4%	17.7%	28.6%	18.9%	10.2%	14.7%	9.6%	34.5%	80.5%
Total	22.8%	37.7%	34.9%	20.3%	38.8%	17.6%	27.8%	20.9%	11.6%	15.1%	8.6%	35.3%	82.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures ($million):													
Land & Seismic	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Exploration & Development	$440.4	$315.2	$943.5	$1,267.1	$1,510.0	$1,696.6	$1,964.2	$1,257.1	$886.5	$1,430.1	$1,403.0	$3,719.7	$6,940.9
Net Acquisitions	$132.9	$1,830.9	$2,017.6	$203.7	$3,023.1	$114.9	$1,986.2	$1,378.6	$171.1	$1.4	-$262.8	-$90.3	$3,274.5
Total Expenditures	$573.2	$2,146.1	$2,961.1	$1,470.7	$4,533.0	$1,811.4	$3,950.3	$2,635.7	$1,057.6	$1,431.5	$1,140.2	$3,629.4	$10,215.4
Expenditures as % of Total:													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	76.8%	14.7%	31.9%	86.2%	33.3%	93.7%	49.7%	47.7%	83.8%	99.9%	123.0%	102.5%	67.9%
Net Acquisitions	23.2%	85.3%	68.1%	13.8%	66.7%	6.3%	50.3%	52.3%	16.2%	0.1%	-23.0%	-2.5%	32.1%
Cashflow ($million)	$556.3	$591.1	$845.6	$1,301.9	$1,602.8	$1,876.8	$2,134.0	$1,494.2	$1,174.2	$1,310.9	$1,320.4	$3,805.5	$7,433.7
Cashflow ($/boe)	$47.09	$40.43	$41.80	$53.73	$49.84	$48.16	$46.46	$28.04	$21.33	$22.85	$22.66	$22.30	$27.54
Recycle Ratio	2.1x	1.2x	1.1x	1.9x	1.5x	1.8x	1.5x	1.2x	1.3x	1.4x	0.9x	1.2x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs ($/boe):													
Exploration & Development (incl. revisions)	$19.47	$16.28	$23.07	$26.23	$29.71	$26.43	$26.17	$28.05	$16.60	$18.35	$20.02	$18.47	$28.35
Net Acquisition Costs	$39.57	$42.53	$53.34	$66.01	$34.53	$32.79	$35.45	$21.02	$19.10	$0.19	$11.75	$14.53	$28.38
All Sources (incl. revisions)	$22.07	$34.39	$37.61	$28.62	$32.76	$26.76	$30.14	$23.87	$16.96	$16.82	$23.90	$18.59	$28.36
Exploration & Development (excl. revisions)	$25.36	$20.59	$37.34	$33.62	$48.30	$44.50	$41.94	$34.58	$23.56	$27.83	$19.69	$23.21	$28.51
Net Acquisition Costs	$39.57	$42.53	$53.34	$66.01	$34.53	$32.79	$35.45	$21.02	$19.10	$0.19	$11.75	$14.53	$28.38
All Sources (excl. revisions)	$27.66	$36.78	$46.94	$36.07	$38.15	$43.52	$38.40	$25.86	$22.70	$24.44	$23.33	$23.56	$28.47

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Crescent Point Energy Corp. (CPG - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	11.89	10.27	13.69	14.71	15.16	14.96	15.09	12.42	11.28	12.39	12.78	12.17	12.71
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.27	2.19	1.96	1.59	1.97	1.68	1.81	1.64	1.38	1.29	1.58	1.42	1.53
F&D Costs	22.07	34.39	37.61	28.62	32.76	26.76	30.14	23.87	16.96	16.82	23.90	18.59	23.39
Return on Capital	13.35	25.56	26.88	18.79	23.08	16.55	20.25	14.74	10.40	10.36	14.21	11.32	14.39
Income Taxes	2.80	10.95	11.52	5.36	2.18	8.41	12.10	9.72	4.25	3.45	5.10	4.14	6.62
Breakeven Oil Price	53.38	83.37	91.66	69.07	75.15	68.37	79.38	62.39	44.27	44.32	57.56	47.64	58.65
Quality Differential	12.82	8.83	11.14	25.77	35.43	28.95	25.08	15.01	12.17	13.41	19.88	15.15	17.11
Required Brent Price	66.19	92.19	102.80	94.84	110.58	97.32	104.45	77.40	56.44	57.73	77.44	62.79	75.76

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	11.89	10.27	13.69	14.71	15.16	14.96	15.09	12.42	11.28	12.39	12.78	12.17	12.71
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.27	2.19	1.96	1.59	1.97	1.68	1.81	1.64	1.38	1.29	1.58	1.42	1.53
F&D Costs	22.07	34.39	37.61	28.62	32.76	26.76	30.14	23.87	16.96	16.82	23.90	18.59	23.39
Return on Capital	13.35	25.56	26.88	18.79	23.08	16.55	20.25	14.74	10.40	10.36	14.21	11.32	14.39
Income Taxes	2.80	10.95	11.52	5.36	2.18	8.41	12.10	9.72	4.25	3.45	5.10	4.14	6.62
Breakeven Oil Price	53.38	83.37	91.66	69.07	75.15	68.37	79.38	62.39	44.27	44.32	57.56	47.64	58.65
Quality Differential	12.82	8.83	11.14	25.77	35.43	28.95	25.08	15.01	12.17	13.41	19.88	15.15	17.11
Required Brent Price	66.19	92.19	102.80	94.84	110.58	97.32	104.45	77.40	56.44	57.73	77.44	62.79	75.76

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Crescent Point Energy Corp. (CPG - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.67	11.05	14.75	15.87	16.40	16.11	16.03	13.25	12.13	13.65	14.21	13.15	13.67
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.48	2.36	2.11	1.72	2.13	1.81	1.92	1.75	1.49	1.42	1.76	1.53	1.64
F&D Costs (1-Year)	22.71	36.55	39.55	30.50	35.55	28.48	31.06	27.02	19.81	18.60	23.90	20.38	25.36
Return on Capital	13.98	26.64	29.32	20.32	25.40	17.75	20.30	16.87	12.13	11.39	14.22	12.38	15.56
Income Taxes	2.93	11.42	12.57	5.79	2.40	9.02	12.13	11.13	4.95	3.80	5.10	4.53	7.16
Breakeven Oil Price	**55.78**	**88.00**	**98.30**	**74.21**	**81.88**	**73.16**	**81.44**	**70.03**	**50.51**	**48.85**	**59.19**	**51.98**	**63.39**
Quality Differential	13.66	9.50	12.00	27.82	38.31	31.17	26.64	16.03	13.09	13.60	21.19	15.96	18.11
Required Brent Price	**69.43**	**97.50**	**110.31**	**102.03**	**120.20**	**104.33**	**108.08**	**86.06**	**63.60**	**62.45**	**80.37**	**67.93**	**81.50**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.67	11.05	14.75	15.87	16.40	16.11	16.03	13.25	12.13	13.65	14.21	13.15	13.67
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.48	2.36	2.11	1.72	2.13	1.81	1.92	1.75	1.49	1.42	1.76	1.53	1.64
F&D Costs (1-Year)	12.11	157.80	67.57	39.44	53.40	31.29	37.39	28.16	19.61	18.25	16.89	18.16	24.06
Return on Capital	7.42	114.53	48.43	26.24	37.55	19.50	24.41	17.58	12.00	11.17	10.10	11.03	14.80
Income Taxes	1.56	49.09	20.75	7.48	3.55	9.90	14.59	11.60	4.90	3.72	3.62	4.04	6.81
Breakeven Oil Price	**37.24**	**334.82**	**153.61**	**90.74**	**113.03**	**78.60**	**94.33**	**72.33**	**50.13**	**48.21**	**46.58**	**47.91**	**60.98**
Quality Differential	13.66	9.50	12.00	27.82	38.31	31.17	26.64	16.03	13.09	13.60	21.19	15.96	18.11
Required Brent Price	**50.90**	**344.32**	**165.62**	**118.56**	**151.34**	**109.77**	**120.97**	**88.36**	**63.22**	**61.81**	**67.77**	**63.87**	**79.09**

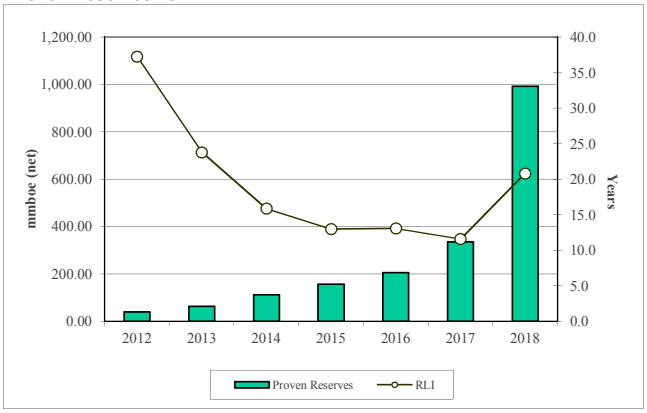
Source: BMO Capital Markets, Company Reports

Diamondback Energy (FANG - NASDAQ) US$, net

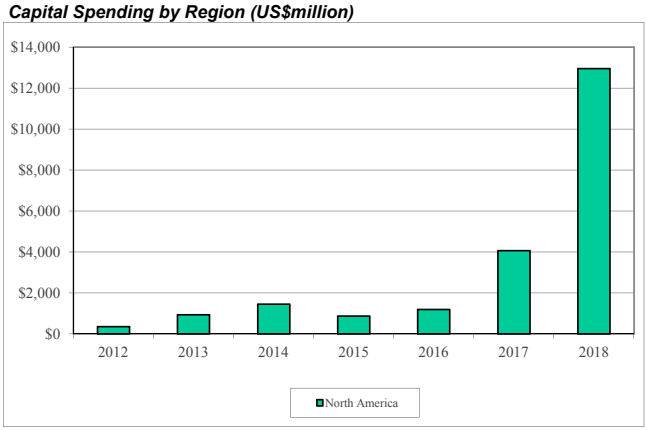
- With its oil-focused production base, Diamondback realized net revenue of $44.73/boe in 2018, one of the highest in the peer group. The company yielded results from operations of $20.34/boe versus $14.84/boe last year.
- Diamondback's F&D costs came in lower at $18.39/boe in 2018 compared to $25.30/boe in 2017. On a realized oil:gas price ratio basis, F&D costs decreased to $21.59/boe from $27.84/boe last year, while costs for PD reserves also dropped significantly to $29.09/boe from $53.19/boe the previous year.
- The company's 2018 results imply a Brent breakeven oil price of $86.29/boe on total proved reserves, while its PD costs imply a Brent breakeven of $104.95/boe.
- Diamondback reported ROCE of 7.3% in 2018 versus a ROCE of 10.3% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

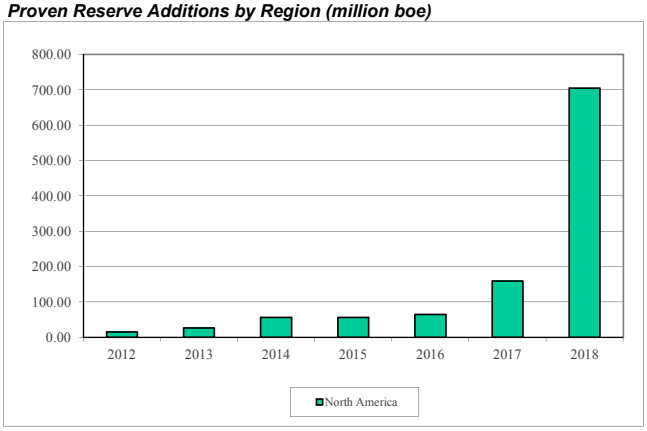
Proven Reserves vs RLI



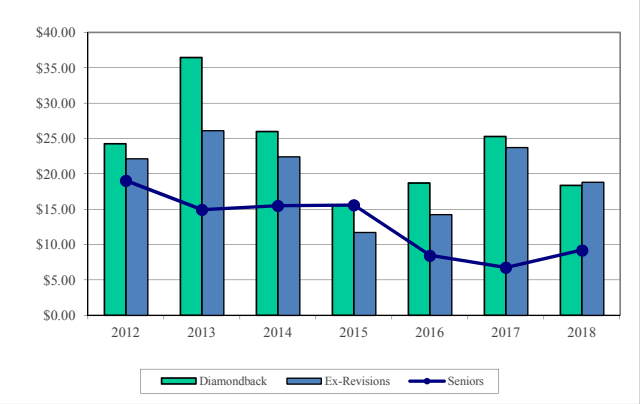
Capital Spending by Region (US$million)



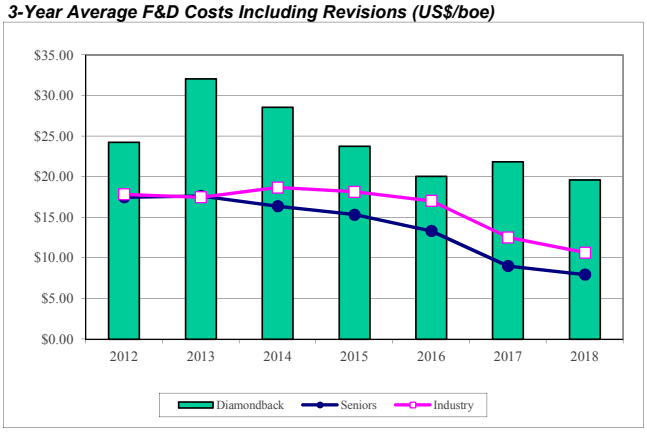
Proven Reserve Additions by Region (million boe)



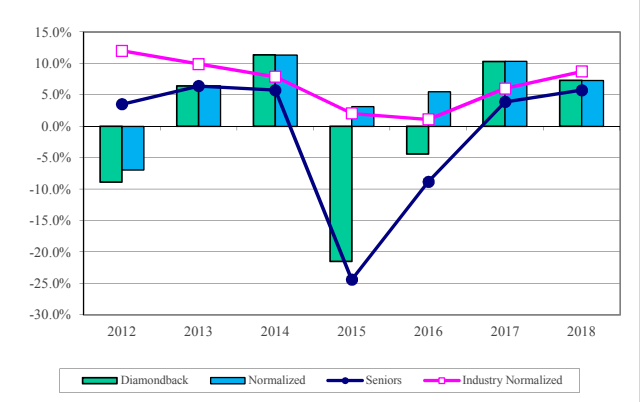
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

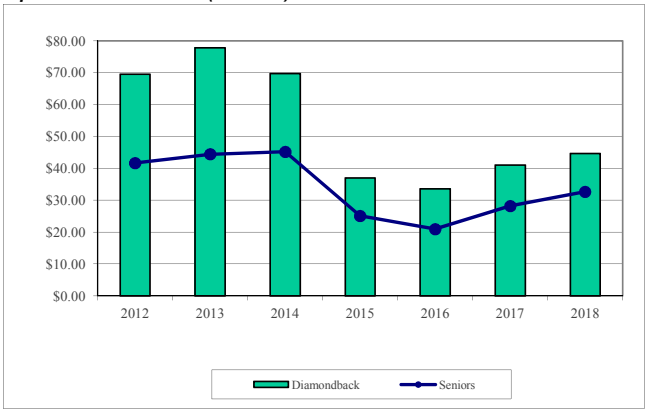
See pages F1 to F4 for analyst coverage.

Diamondback Energy (FANG - NASDAQ)

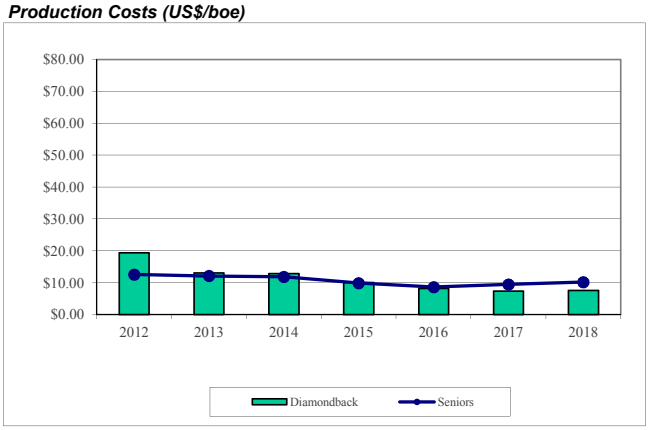
US$/boe, net

North America

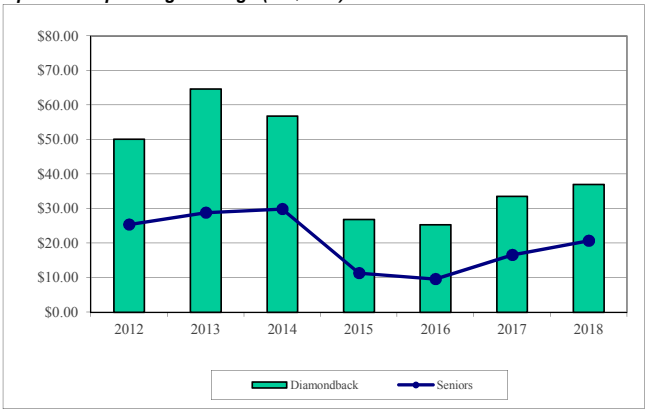
Upstream Net Revenue (US$/boe)



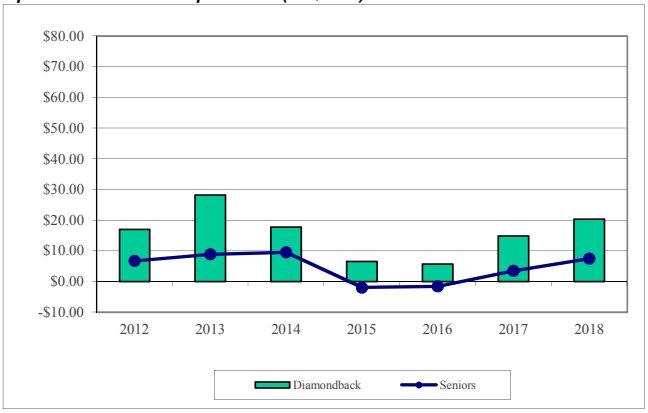
Production Costs (US$/boe)



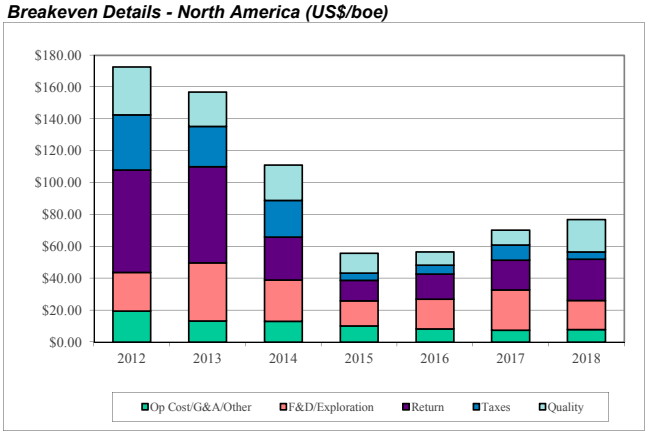
Upstream Operating Earnings (US$/boe)



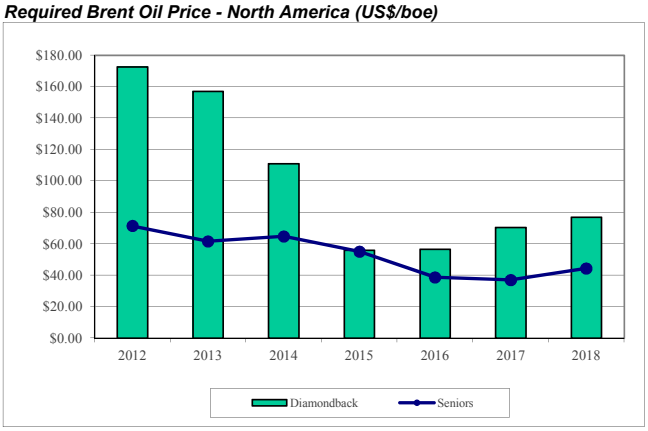
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Diamondback Energy (FANG - NASDAQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	75	208	496	447	527	1,205	2,176
Midstream / Downstream Revenue											
Other											
Total Revenue and Other Income	-	-	-	-	75	208	496	447	527	1,205	2,176
Crude Oil and Product Purchases	-	-	-	-	-	-					
Production and Transportation Expenses	-	-	-	-	21	35	91	122	128	213	364
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	-	-	10	11	21	32	43	49	65
Depreciation, Depletion and Amortization	-	-	-	-	26	67	170	218	178	327	623
Interest, net	-	-	-	-	4	8	35	42	41	41	87
Other	-	-	-	-	(5)	1	(127)	782	301	78	(78)
Earnings Before Income Tax	-	-	-	-	18	86	305	(749)	(165)	497	1,113
Current Income Taxes	-	-	-	-	-	0	-	0	0	1	(1)
Future Income Taxes	-	-	-	-	55	32	109	(202)	-	(21)	169
Total Income Taxes	-	-	-	-	55	32	109	(201)	0	(20)	168
Minority Interest							(2)	(3)	(0)	(34)	(99)
Earnings From Continuing Operations	-	-	-	-	(37)	55	194	(551)	(165)	482	846
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	(37)	55	194	(551)	(165)	482	846
Preferred Stock Dividends	-	-	-	-	-	-	-			-	-
Net Earnings to Common Shareholders	-	-	-	-	(37)	55	194	(551)	(165)	482	846

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	(37)	55	194	(551)	(165)	482	846
Charges and Credits Not Impacting Cash	-	-	-	-	81	98	279	831	424	306	792
Other	-	-	-	-	1	(3)	(101)	138	89	149	(78)
Cash Flow From Operations	-	-	-	-	46	150	372	419	348	937	1,560
Change in Working Capital / Other	-	-	-	-	4	6	(15)	(2)	(16)	(49)	5
Net Cash From Operating Activities	-	-	-	-	50	156	356	417	332	889	1,565
Total Capital Expenditures	-	-	-	-	(101)	(300)	(543)	(421)	(374)	(861)	(1,665)
Acquisitions, net	-	-	-	-	(75)	(640)	(905)	(472)	(812)	(2,353)	(1,738)
Other	-	-	-	-	(7)	(0)	(34)	(3)	(124)	81	(100)
Net Cash From Investing Activities	-	-	-	-	(183)	(940)	(1,482)	(895)	(1,310)	(3,132)	(3,503)
Net Change in Debt	-	-	-	-	(85)	460	214	(178)	625	361	1,888
Net Change in Common Stock	-	-	-	-	237	323	928	651	2,052	370	303
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	(37)
Other	-	-	-	-	1	(9)	(2)	(4)	(52)	(41)	(113)
Net Cash From Financing Activities	-	-	-	-	153	774	1,140	468	2,625	690	2,041
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	19	(11)	15	(10)	1,646	(1,554)	102
Cash and Equivalents, Beginning of Year	-	-	-	-	7	26	16	30	20	1,667	112
Cash and Equivalents, End of Year	-	-	-	-	26	16	30	20	1,667	112	215

Source: BMO Capital Markets, Company Reports

Diamondback Energy (FANG - NASDAQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	50	62	252	109	1,792	359	925
Net Property, Plant and Equipment	-	-	-	-	554	1,446	2,792	2,598	3,391	7,344	20,372
Other Assets	-	-	-	-	2	13	52	52	167	68.77	299
Total Assets	-	-	-	-	607	1,522	3,095	2,758	5,350	7,771	21,596
Total Current Liabilities	-	-	-	-	79	121	267	141	209	577	1,020
Long-term Debt	-	-	-	-	0	460	674	496	1,106	1,477	4,464
Deferred Income Taxes	-	-	-	-	63	92	162	-	-	108	1,785
Other Liabilities and Deferred Credits	-	-	-	-	3	3	8	13	16	26	161
Total Liabilities	-	-	-	-	145	676	1,110	649	1,331	2,189	7,429
Minority Interests	-	-	-	-			234	233	321	327	467
Common Shares	-	-	-	-	0	0	1	1	1	1	2
Contributed Surplus (Paid-in Capital)	-	-	-	-	514	843	1,554	2,230	4,216	5,291	12,936
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	(52)	3	196	(354)	(519)	(37)	762
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	(0.07)
Total Shareholders' Equity	-	-	-	-	462	846	1,751	1,876	3,697	5,255	13,699
Total Liabilities and Shareholders' Equity	-	-	-	-	607	1,522	3,095	2,758	5,350	7,771	21,596
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**-8.9%**	**6.4%**	**11.4%**	**-21.5%**	**-4.4%**	**10.3%**	**7.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	-	-	-	-	75	208	496	447	527	1,186	2,130	3,843	4,786
Production Costs	-	-	-	-	21	35	91	122	128	213	364	705	918
Exploration	-	-	-	-	0	0	0	0	0	0	0	0	0
DD&A	-	-	-	-	26	66	169	216	178	322	623	1,123	1,508
G&A/Other	-	-	-	-	0	0	0	1	1	1	2	5	6
Pre-tax Results Of Operations	-	-	-	-	28	107	235	108	220	650	1,141	2,011	2,354
Income Taxes	-	-	-	-	10	32	109	29	130	221	173	524	662
Results Of Operations	-	-	-	-	18	75	126	79	89	429	968	1,487	1,692

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	-	-	-	-	75	208	496	447	527	1,186	2,130	3,843	4,786
Production Costs	-	-	-	-	21	35	91	122	128	213	364	705	918
Exploration	-	-	-	-	0	0	0	0	0	0	0	0	0
DD&A	-	-	-	-	26	66	169	216	178	322	623	1,123	1,508
G&A/Other	-	-	-	-	0	0	0	1	1	1	2	5	6
Pre-tax Results Of Operations	-	-	-	-	28	107	235	108	220	650	1,141	2,011	2,354
Income Taxes	-	-	-	-	10	32	109	29	130	221	173	524	662
Results Of Operations	-	-	-	-	18	75	126	79	89	429	968	1,487	1,692

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	-	-	-	-	na	na	na	na	na	na	na	na	na
Production Costs	-	-	-	-	na	na	na	na	na	na	na	na	na
Exploration	-	-	-	-	na	na	na	na	na	na	na	na	na
DD&A	-	-	-	-	na	na	na	na	na	na	na	na	na
G&A/Other	-	-	-	-	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	-	-	-	-	na	na	na	na	na	na	na	na	na
Income Taxes	-	-	-	-	na	na	na	na	na	na	na	na	na
Results Of Operations	-	-	-	-	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Diamondback Energy (FANG - NASDAQ)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue	-	-	-	-	$69.52	$77.84	$69.74	$36.98	$33.57	$41.02	$44.73	$41.67	$42.95
Production Costs	-	-	-	-	$19.39	$13.09	$12.85	$10.07	$8.18	$7.36	$7.64	$7.65	$8.24
Exploration	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	-	-	$23.90	$24.63	$23.73	$17.88	$11.34	$11.13	$13.09	$12.18	$13.53
G&A/Other	-	-	-	-	$0.00	$0.08	$0.07	$0.07	$0.07	$0.05	$0.04	$0.05	$0.05
Pre-tax Results of Operations	-	-	-	-	$26.23	$40.04	$33.10	$8.95	$13.98	$22.48	$23.96	$21.80	$21.13
Income Taxes	-	-	-	-	$9.18	$11.88	$15.33	$2.41	$8.29	$7.64	$3.62	$5.68	$5.94
Results of Operations	-	-	-	-	$17.05	$28.16	$17.77	$6.55	$5.69	$14.84	$20.34	$16.12	$15.19

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue	-	-	-	-	$69.52	$77.84	$69.74	$36.98	$33.57	$41.02	$44.73	$41.67	$42.95
Production Costs	-	-	-	-	$19.39	$13.09	$12.85	$10.07	$8.18	$7.36	$7.64	$7.65	$8.24
Exploration	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	-	-	$23.90	$24.63	$23.73	$17.88	$11.34	$11.13	$13.09	$12.18	$13.53
G&A/Other	-	-	-	-	$0.00	$0.08	$0.07	$0.07	$0.07	$0.05	$0.04	$0.05	$0.05
Pre-tax Results of Operations	-	-	-	-	$26.23	$40.04	$33.10	$8.95	$13.98	$22.48	$23.96	$21.80	$21.13
Income Taxes	-	-	-	-	$9.18	$11.88	$15.33	$2.41	$8.29	$7.64	$3.62	$5.68	$5.94
Results of Operations	-	-	-	-	$17.05	$28.16	$17.77	$6.55	$5.69	$14.84	$20.34	$16.12	$15.19

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Net Revenue	-	-	-	-	na	na	na	na	na	na	na	na	na
Production Costs	-	-	-	-	na	na	na	na	na	na	na	na	na
Exploration	-	-	-	-	na	na	na	na	na	na	na	na	na
DD&A	-	-	-	-	na	na	na	na	na	na	na	na	na
G&A/Other	-	-	-	-	na	na	na	na	na	na	na	na	na
Pre-tax Results of Operations	-	-	-	-	na	na	na	na	na	na	na	na	na
Income Taxes	-	-	-	-	na	na	na	na	na	na	na	na	na
Results of Operations	-	-	-	-	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Diamondback Energy (FANG - NASDAQ)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	2.3	4.7	11.9	21.7	28.6	56.6	95.0	60.1	42.8
Liquids Production (b/d)	-	-	-	-	2,574	6,531	17,489	29,476	38,250	69,789	114,608	74,216	53,923
Total Production (boe/d)	-	-	-	-	2,954	7,321	19,473	33,098	43,012	79,223	130,438	84,224	61,049
% Gas Production	-	-	-	-	13%	11%	10%	11%	11%	12%	12%	12%	12%
% Oil Production	-	-	-	-	87%	89%	90%	89%	89%	88%	88%	88%	88%
Proven Reserves:	-	-	-	-									
Gas Reserves (bcf)	-	-	-	-	34.6	61.7	111.6	149.5	174.9	285.4	1,048.6	503.0	354.0
Oil Reserves (mmbbls)	-	-	-	-	34.4	53.3	94.2	132.0	176.3	287.8	817.2	427.1	301.5
Total Proven Reserves (mmboe)	-	-	-	-	40.2	63.6	112.8	156.9	205.5	335.4	992.0	510.9	360.5
% Gas Reserves	-	-	-	-	14%	16%	16%	16%	14%	14%	18%	16%	16%
% Oil Reserves	-	-	-	-	86%	84%	84%	84%	86%	86%	82%	84%	84%
Proven Reserve Life Index	-	-	-	-	37.3	23.8	15.9	13.0	13.1	11.6	20.8	15.2	14.9
Proven Reserve Additions:	-	-	-	-									
Gas Additions (bcf)	-	-	-	-	14.9	28.8	54.3	45.8	35.8	131.1	797.9	964.9	1,065.0
Oil Additions (mmbbls)	-	-	-	-	12.2	21.2	47.3	48.5	58.3	137.0	571.3	766.5	862.3
Total Additions (mmboe)	-	-	-	-	14.7	26.0	56.4	56.1	64.3	158.8	704.3	927.3	1,039.8
Addition Components (mmboe):	-	-	-	-									
Extensions, Discoveries and Additions	-	-	-	-	4.6	25.7	53.6	69.7	79.8	139.0	202.1	420.9	544.2
Acquisitions	-	-	-	-	11.5	10.7	11.9	5.1	4.6	32.7	487.0	524.3	541.3
Dispositions	-	-	-	-	-	-	-	-	-	(2.0)	(0.3)	(2.3)	(2.3)
Revisions of Estimates	-	-	-	-	(1.4)	(10.4)	(9.1)	(18.7)	(20.1)	(10.9)	15.4	(15.5)	(43.3)
Components as % of Total Additions:	-	-	-	-									
Extensions, Discoveries and Additions	-	-	-	-	31.3%	98.5%	95.1%	124.1%	124.2%	87.5%	28.7%	45.4%	52.3%
Acquisitions	-	-	-	-	78.3%	41.2%	21.1%	9.1%	7.1%	20.6%	69.1%	56.5%	52.1%
Dispositions	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	-1.3%	0.0%	-0.2%	-0.2%
Revisions of Estimates	-	-	-	-	-9.6%	-39.8%	-16.1%	-33.2%	-31.3%	-6.8%	2.2%	-1.7%	-4.2%
Additions as % of Production:	-	-	-	-									
Gas	-	-	-	-	1781.9%	1666.6%	1248.9%	577.8%	343.5%	634.7%	2301.7%	1467.4%	1364.8%
Oil	-	-	-	-	1302.7%	891.1%	741.1%	450.9%	417.5%	537.6%	1365.6%	943.2%	876.3%
Total	-	-	-	-	1364.4%	974.8%	792.8%	464.8%	409.3%	549.2%	1479.2%	1005.5%	933.3%
Additions as % of Reserves:	-	-	-	-									
Gas	-	-	-	-	43.0%	46.8%	48.6%	30.7%	20.5%	46.0%	76.1%	191.8%	300.8%
Oil	-	-	-	-	35.5%	39.8%	50.2%	36.8%	33.1%	47.6%	69.9%	179.5%	286.0%
Total	-	-	-	-	36.6%	41.0%	49.9%	35.8%	31.3%	47.4%	71.0%	181.5%	288.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	-	-	$17.5	$242.9	$475.8	$319.1	$329.1	$779.7	$1,090.3	$2,199.1	$2,994.0
Development	-	-	-	-	$106.3	$88.5	$86.1	$42.7	$47.6	$145.4	$493.1	$686.0	$814.9
Acquisitions	-	-	-	-	$233.2	$618.5	$903.4	$513.0	$824.2	$3,144.7	$11,369.4	$15,338.2	$16,754.6
Dispositions	-	-	-	-	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	-	-	-	-	$357.0	$949.9	$1,465.3	$874.8	$1,200.9	$4,069.8	$12,952.8	$18,223.4	$20,563.5
Expenditures as % of Total:													
Exploration	-	-	-	-	4.9%	25.6%	32.5%	36.5%	27.4%	19.2%	8.4%	12.1%	14.6%
Development	-	-	-	-	29.8%	9.3%	5.9%	4.9%	4.0%	3.6%	3.8%	3.8%	4.0%
Acquisitions	-	-	-	-	65.3%	65.1%	61.7%	58.6%	68.6%	77.3%	87.8%	84.2%	81.5%
	-	-	-	-									
Cashflow (US$million)	-	-	-	-	$46.1	$149.6	$371.7	$418.7	$347.8	$937.4	$1,559.7	$2,844.9	$3,635.3
Cashflow (US$/boe)	-	-	-	-	$42.79	$55.98	$52.29	$34.66	$22.15	$32.42	$32.76	$30.85	$32.63
Recycle Ratio	-	-	-	-	1.8x	1.5x	2.0x	2.2x	1.2x	1.3x	1.8x	1.6x	1.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-	-	-	-	$38.73	$21.65	$12.63	$7.09	$6.31	$7.22	$7.28	$7.12	$7.60
Acquisition Costs	-	-	-	-	$20.25	$57.58	$76.15	$100.11	$180.90	$96.08	$23.35	$29.26	$30.95
All Sources (incl. revisions)	-	-	-	-	$24.26	$36.47	$26.00	$15.58	$18.69	$25.30	$18.39	$19.60	$19.73
Exploration & Development (excl. revisions)	-	-	-	-	$26.90	$12.91	$10.49	$5.19	$4.72	$6.66	$7.83	$6.85	$7.00
Acquisition Costs	-	-	-	-	$20.25	$57.58	$76.15	$100.11	$180.90	$96.08	$23.35	$29.26	$30.95
All Sources (excl. revisions)	-	-	-	-	$22.15	$26.09	$22.39	$11.69	$14.23	$23.70	$18.80	$19.28	$18.95

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Diamondback Energy (FANG - NASDAQ)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	-	-	-	-	19.39	13.09	12.85	10.07	8.18	7.36	7.64	7.65	8.24
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	0.08	0.07	0.07	0.07	0.05	0.04	0.05	0.05
F&D Costs	-	-	-	-	24.26	36.47	26.00	15.58	18.69	25.30	18.39	19.60	19.73
Return on Capital	-	-	-	-	64.30	60.32	26.84	12.88	15.63	18.58	25.91	19.29	18.99
Income Taxes	-	-	-	-	34.62	25.45	23.16	4.74	5.74	9.57	4.62	6.54	8.08
Breakeven Oil Price	-	-	-	-	142.57	135.41	88.91	43.34	48.31	60.86	56.59	53.13	55.09
Quality Differential	-	-	-	-	29.97	21.57	22.12	12.44	8.25	9.40	20.33	10.73	16.52
Required Brent Price	-	-	-	-	172.55	156.98	111.03	55.79	56.56	70.26	76.93	63.86	71.62
	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D/Exploration	-	-	-	-	24.26	36.47	26.00	15.58	18.69	25.30	18.39	19.60	19.73
Op Cost/G&A/Other	-	-	-	-	19.39	13.16	12.91	10.14	8.25	7.41	7.68	7.70	8.29

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	-	-	-	-	19.39	13.09	12.85	10.07	8.18	7.36	7.64	7.65	8.24
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	0.08	0.07	0.07	0.07	0.05	0.04	0.05	0.05
F&D Costs	-	-	-	-	24.26	36.47	26.00	15.58	18.69	25.30	18.39	19.60	19.73
Return on Capital	-	-	-	-	64.30	60.32	26.84	12.88	15.63	18.58	25.91	19.29	18.99
Income Taxes	-	-	-	-	34.62	25.45	23.16	4.74	5.74	9.57	4.62	6.54	8.08
Breakeven Oil Price	-	-	-	-	142.57	135.41	88.91	43.34	48.31	60.86	56.59	53.13	55.09
Quality Differential	-	-	-	-	29.97	21.57	22.12	12.44	8.25	9.40	20.33	10.73	16.52
Required Brent Price	-	-	-	-	172.55	156.98	111.03	55.79	56.56	70.26	76.93	63.86	71.62
F&D/Exploration	-	-	-	-	24.26	36.47	26.00	15.58	18.69	25.30	18.39	19.60	19.73
Op Cost/G&A/Other	-	-	-	-	19.39	13.16	12.91	10.14	8.25	7.41	7.68	7.70	8.29

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Diamondback Energy (FANG - NASDAQ)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	21.55	14.23	13.78	10.82	8.82	7.99	8.45	8.37	8.99
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	0.08	0.07	0.07	0.07	0.05	0.05	0.05	0.06
F&D Costs (1-Year)	-	-	-	-	27.92	42.27	29.12	17.03	19.89	27.84	21.59	22.60	22.65
Return on Capital	-	-	-	-	73.07	66.33	28.44	13.58	16.24	20.08	28.62	21.43	20.94
Income Taxes	-	-	-	-	39.35	27.99	24.55	4.99	5.97	10.34	5.10	7.27	8.91
Breakeven Oil Price	**-**	**-**	**-**	**-**	**161.89**	**150.90**	**95.96**	**46.49**	**51.00**	**66.31**	**63.81**	**59.72**	**61.54**
Quality Differential	-	-	-	-	33.32	23.46	23.73	13.36	8.89	10.20	22.48	13.86	15.73
Required Brent Price	**-**	**-**	**-**	**-**	**195.21**	**174.36**	**119.69**	**59.85**	**59.89**	**76.51**	**86.29**	**73.58**	**77.27**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	21.55	14.23	13.78	10.82	8.82	7.99	8.45	8.37	8.99
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	0.08	0.07	0.07	0.07	0.05	0.05	0.05	0.06
F&D Costs (1-Year)	-	-	-	-	55.88	53.29	37.56	25.80	29.57	53.19	29.09	32.40	35.04
Return on Capital	-	-	-	-	170.16	80.22	36.93	20.62	24.10	38.37	38.10	30.77	32.45
Income Taxes	-	-	-	-	91.62	33.85	31.87	7.58	8.86	19.77	6.79	10.44	13.80
Breakeven Oil Price	**-**	**-**	**-**	**-**	**339.21**	**181.67**	**120.21**	**64.88**	**71.42**	**119.37**	**82.47**	**82.03**	**90.33**
Quality Differential	-	-	-	-	33.32	23.46	23.73	13.36	8.89	10.20	22.48	13.86	15.73
Required Brent Price	**-**	**-**	**-**	**-**	**372.52**	**205.13**	**143.94**	**78.24**	**80.31**	**129.57**	**104.95**	**95.89**	**106.06**

Source: BMO Capital Markets, Company Reports

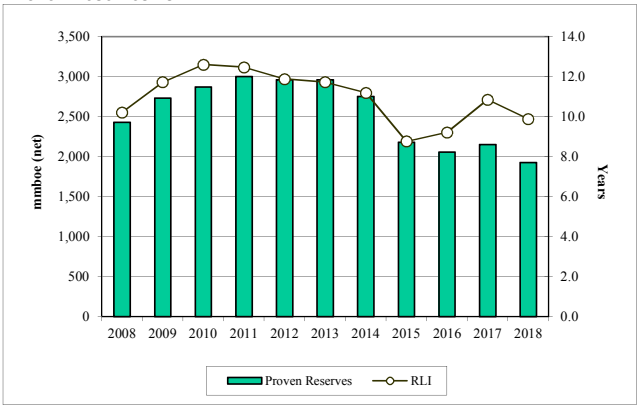
See pages F1 to F4 for analyst coverage.

Devon Energy Corp. (DVN - AMEX) US$, net

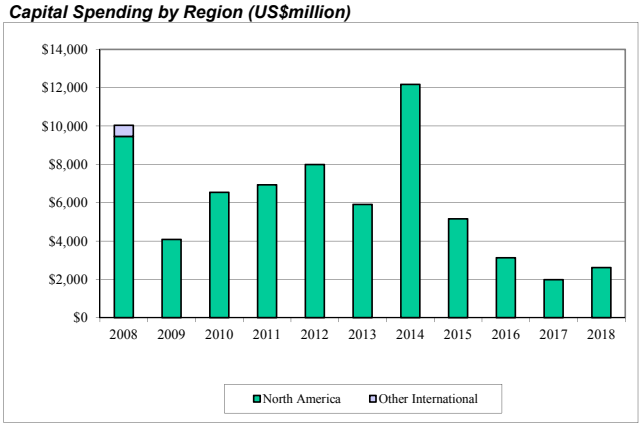
- Devon's results of operations improved to $6.72/boe in 2018 from $5.09/boe in 2017.
- The company's one-year F&D costs rose to $11.08/boe from $6.71/boe last year. On a realized oil:gas price ratio basis, F&D costs increased to $12.86/boe from $8.88/boe, while the costs for PD reserves also increased to $15.41/boe from $8.61/boe.
- Devon's 2018 costs imply a required Brent breakeven oil price of $67.39/boe on a realized ratio basis, while its PD costs imply a Brent breakeven oil price of $71.98/boe.
- The company reported ROCE of 23.0% in 2018 relative to a normalized 2017 return of 6.2%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

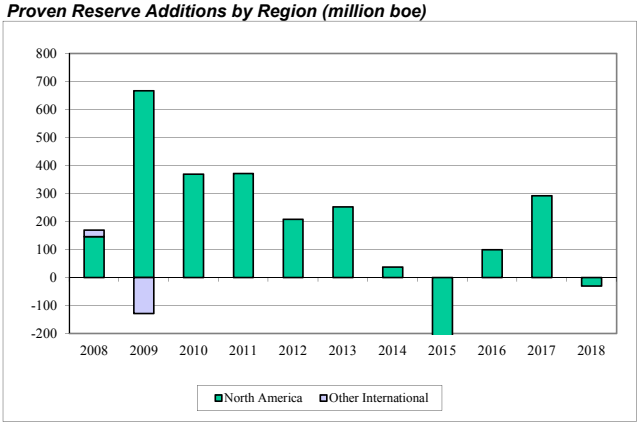
Proven Reserves vs RLI



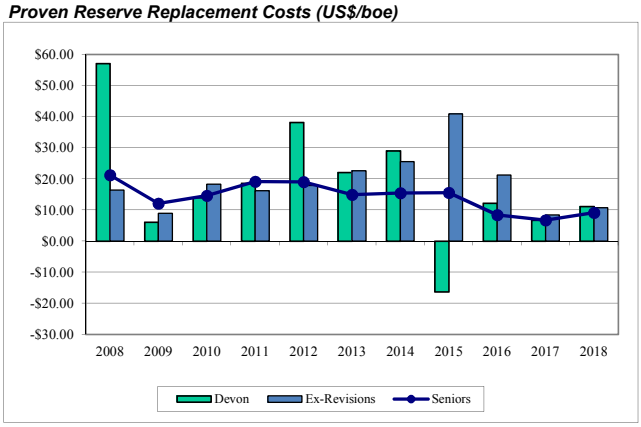
Capital Spending by Region (US$million)



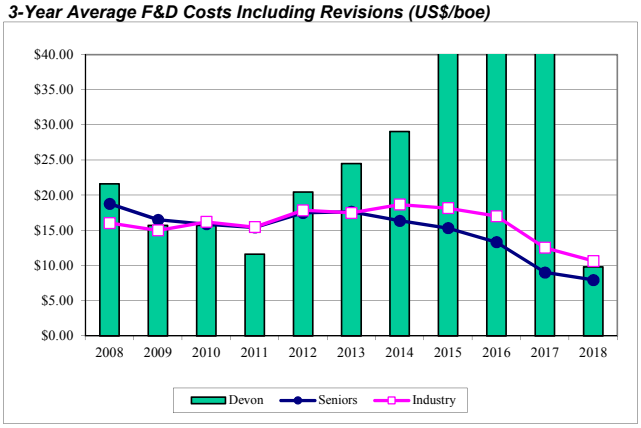
Proven Reserve Additions by Region (million boe)



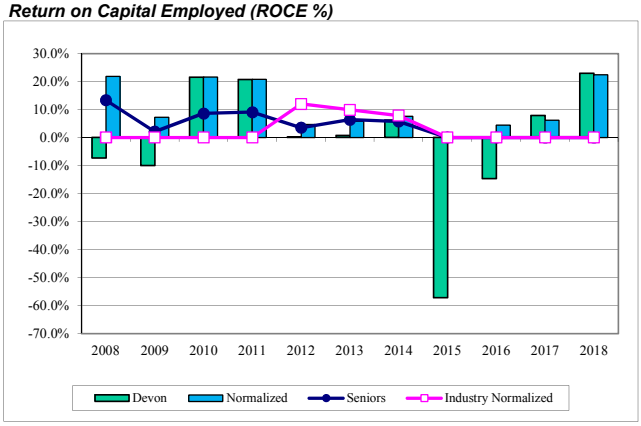
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

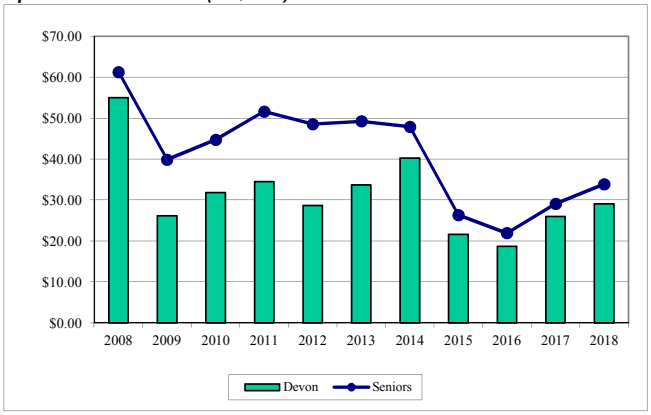
See pages F1 to F4 for analyst coverage.

Devon Energy Corp. (DVN - AMEX)

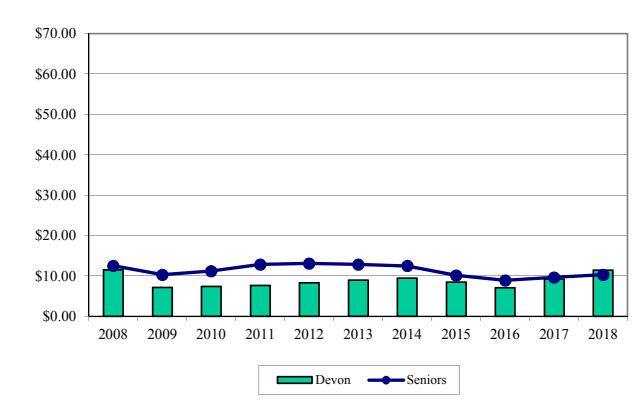
US$/boe, net

Worldwide

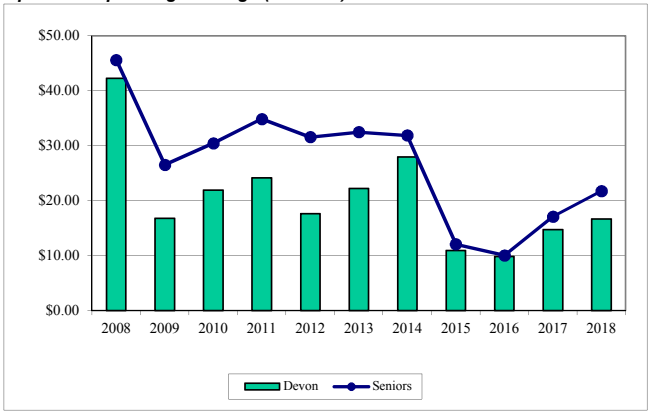
Upstream Net Revenue (US$/boe)



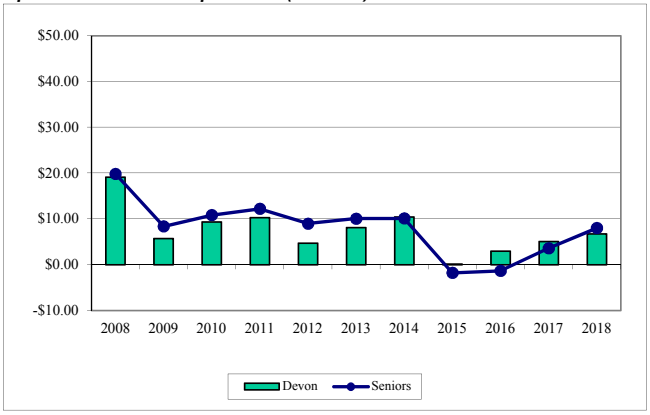
Production Costs (US$/boe)



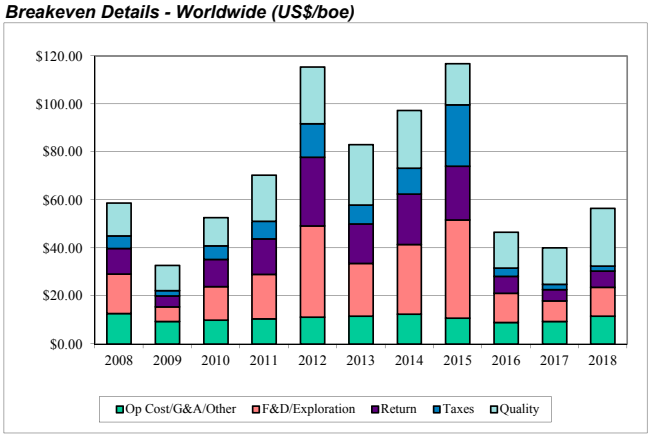
Upstream Operating Earnings (US$/boe)



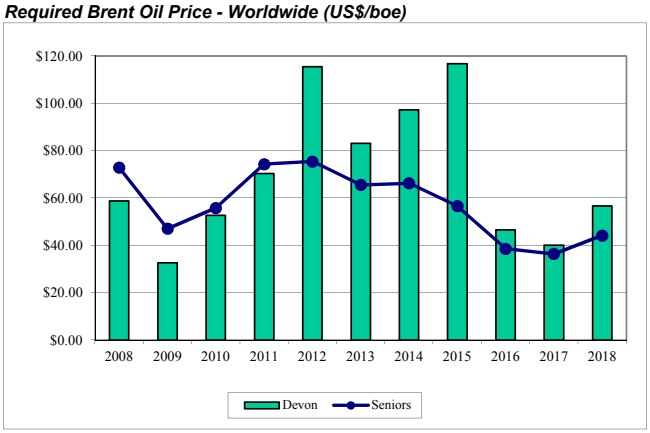
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



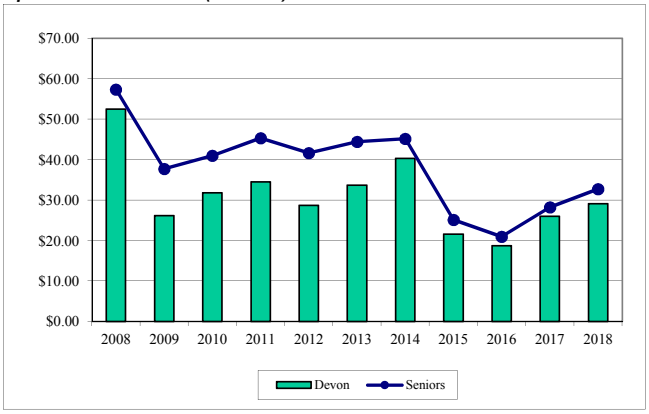
Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

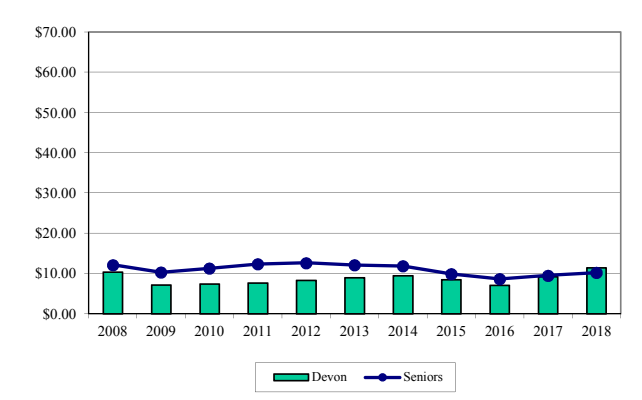
US$/boe, net

North America

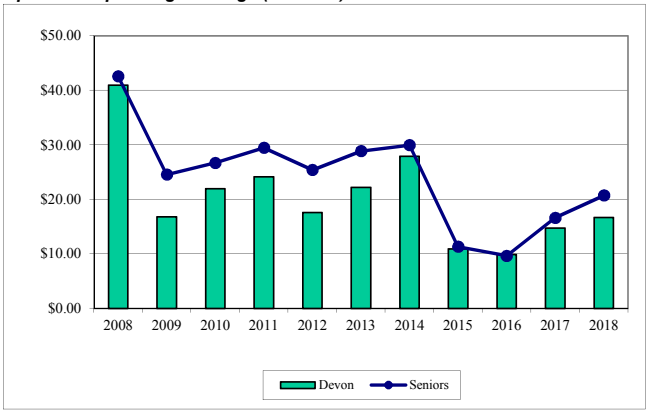
Upstream Net Revenue (US$/boe)



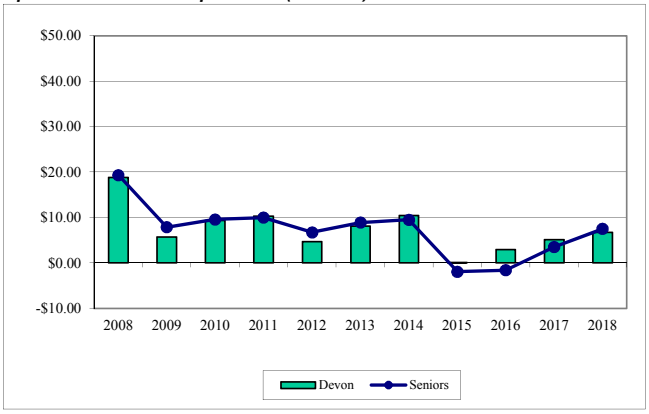
Production Costs (US$/boe)



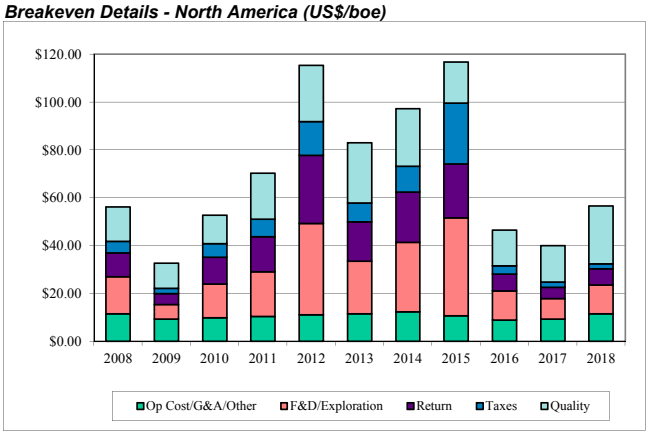
Upstream Operating Earnings (US$/boe)



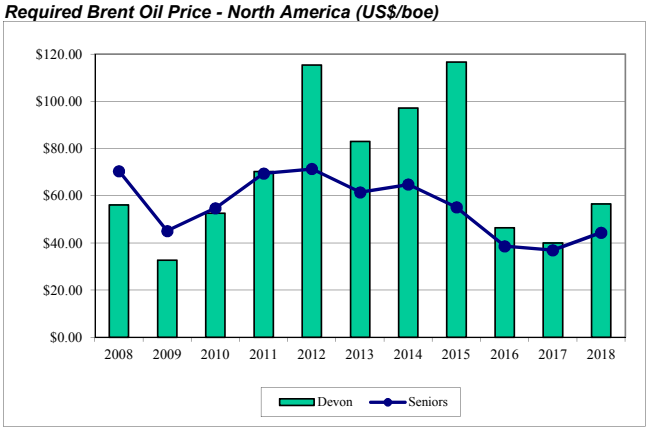
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



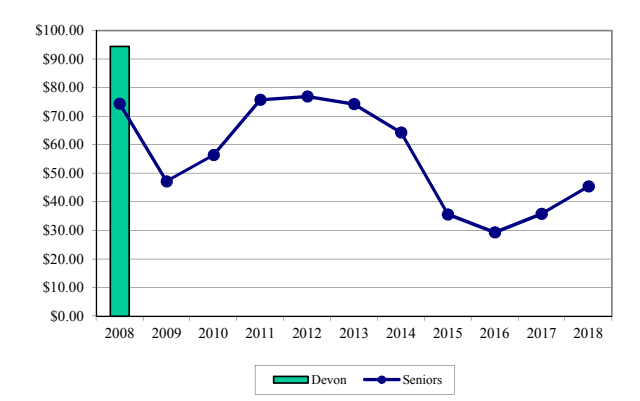
Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

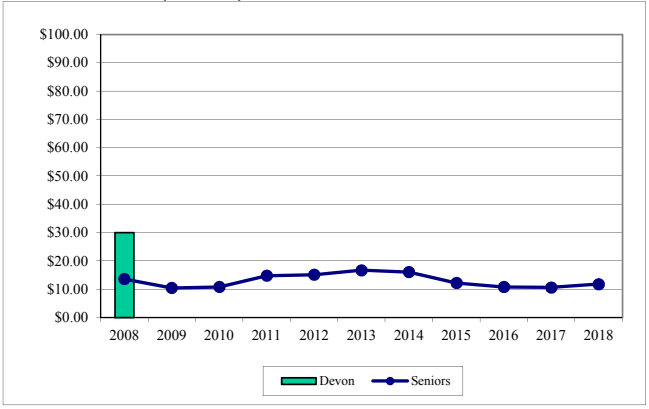
US$/boe, net

International

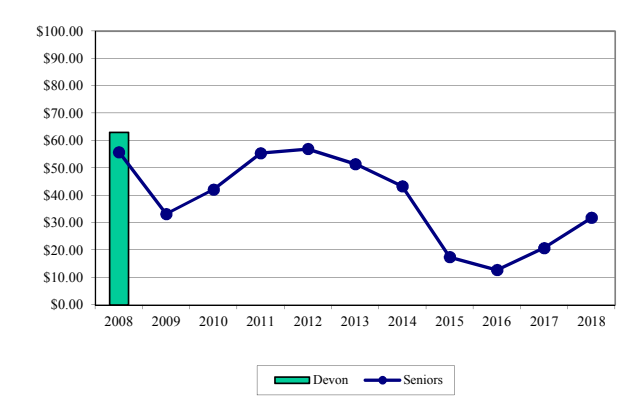
Upstream Net Revenue (US$/boe)



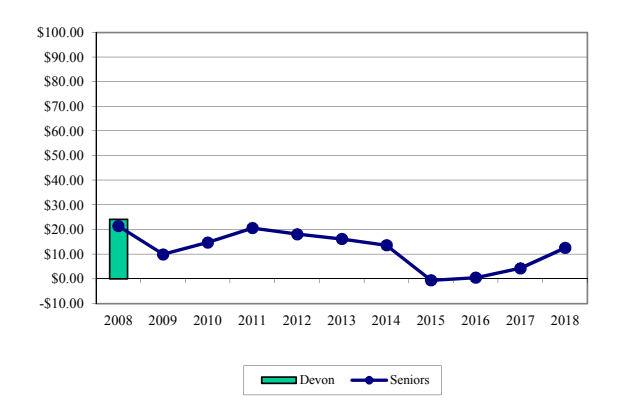
Production Costs (US$/boe)



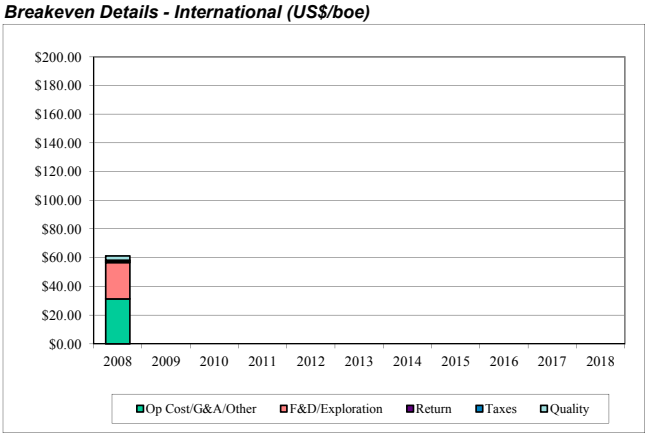
Upstream Operating Earnings (US$/boe)



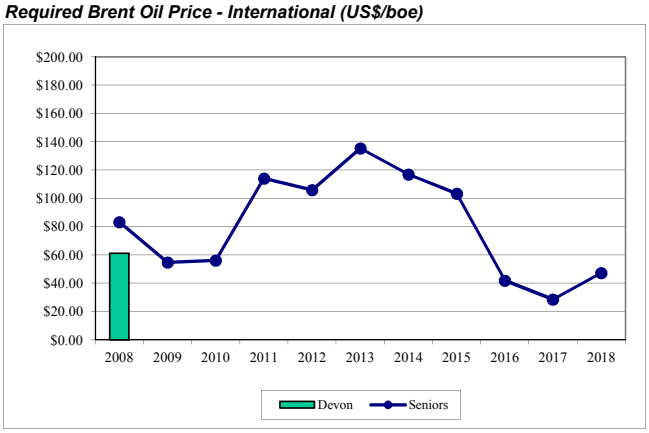
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	12,919	6,097	7,262	8,315	7,153	8,522	9,910	5,382	4,182	5,307	6,285
Midstream / Downstream Revenue	2,292	1,534	1,867	2,258	1,656	2,066	7,667	7,260	6,323	8,642	4,449
Other	-	384	811	881	693	(191)	1,989	503	(201)	-	-
Total Revenue and Other Income	15,211	8,015	9,940	11,454	9,502	10,397	19,566	13,145	10,304	13,949	10,734
Crude Oil and Product Purchases											
Production and Transportation Expenses	2,739	1,984	1,689	1,851	2,074	2,268	2,332	2,104	1,582	1,823	2,225
Marketing Expenses	1,624	1,022	1,357	1,716	1,246	1,553	6,815	6,420	5,492	7,730	4,363
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	177
General and Administrative	653	648	563	585	692	617	847	855	645	872	650
Depreciation, Depletion and Amortization	3,509	2,108	1,930	2,248	2,811	2,780	3,319	3,129	1,792	2,074	1,658
Interest, net	329	349	363	352	406	417	526	517	904	498	594
Other	10,304	6,339	378	412	2,590	2,613	1,668	21,388	3,766	56	147
Earnings Before Income Tax	(4,033)	(4,526)	3,568	4,290	(317)	149	4,059	(21,268)	(3,877)	896	920
Current Income Taxes	619	241	516	(143)	52	72	477	(237)	100	112	(70)
Future Income Taxes	(1,573)	(2,014)	719	2,299	(184)	97	1,891	(5,828)	(273)	(294)	226
Total Income Taxes	(954)	(1,773)	1,235	2,156	(132)	169	2,368	(6,065)	(173)	(182)	156
Minority Interest	-	-	-	-	-	-	(84)	749	402	(180)	-
Earnings From Continuing Operations	(3,079)	(2,753)	2,333	2,134	(185)	(20)	1,607	(14,454)	(3,302)	898	764
Discontinued Operations/Extraordinary Items	931	274	2,217	2,570	(21)	-	-	-	-	-	2,300
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(2,148)	(2,479)	4,550	4,704	(206)	(20)	1,607	(14,454)	(3,302)	898	3,064
Preferred Stock Dividends	5	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(2,153)	(2,479)	4,550	4,704	(206)	(20)	1,607	(14,454)	(3,302)	898	3,064

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(3,079)	(2,753)	2,333	2,134	(185)	(20)	1,607	(14,454)	(3,302)	898	764
Charges and Credits Not Impacting Cash	12,315	6,502	2,649	4,547	4,651	4,853	7,163	18,121	6,494	1,797	1,683
Other	186	343	322	(160)	445	730	(2,497)	2,017	(1,438)	233	(76)
Cash Flow From Operations	9,422	4,092	5,304	6,521	4,911	5,563	6,273	5,684	1,754	2,928	2,371
Change in Working Capital / Other	(14)	645	174	(297)	45	(127)	(292)	(301)	(8)	(19)	(143)
Net Cash From Operating Activities	9,408	4,737	5,478	6,224	4,956	5,436	5,981	5,383	1,746	2,909	2,228
Total Capital Expenditures	(9,375)	(4,879)	(6,476)	(7,534)	(8,225)	(6,758)	(6,988)	(5,308)	(2,330)	(2,759)	(2,451)
Acquisitions, net	397	34	4,310	129	1,468	419	(1,342)	(1,000)	1,477	371	958
Other	2,105	(509)	2,054	1,759	(769)	2,340	146	(16)	(19)	178	-
Net Cash From Investing Activities	(6,873)	(5,354)	(112)	(5,646)	(7,526)	(3,999)	(8,184)	(6,324)	(872)	(2,210)	(1,493)
Net Change in Debt	(2,480)	1,435	(1,782)	4,187	1,921	361	(2,234)	1,831	(2,890)	258	(1,226)
Net Change in Common Stock	(665)	-	(1,168)	(2,332)	-	-	410	679	2,361	501	(2,956)
Net Change in Preferred Stock	(150)	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(289)	(284)	(281)	(278)	(324)	(348)	(386)	(396)	(221)	(127)	(149)
Other	176	50	127	114	32	7	(144)	(266)	(414)	(623)	3,152
Net Cash From Financing Activities	(3,408)	1,201	(3,104)	1,691	1,629	20	(2,354)	1,848	(1,164)	9	(1,179)
Effect of Exchange Rate on Cash	(116)	43	17	(4)	23	(28)	(29)	(77)	(61)	206	206
Net Increase/(Decrease) in Cash	(989)	627	2,279	2,265	(918)	1,429	(4,586)	830	(351)	914	(238)
Cash and Equivalents, Beginning of Year	1,373	384	1,011	3,290	5,555	4,637	6,066	1,480	2,310	1,959	2,684
Cash and Equivalents, End of Year	384	1,011	3,290	5,555	4,637	6,066	1,480	2,310	1,959	2,873	2,446

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Devon Energy Corp. (DVN - AMEX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	2,684	2,992	5,555	9,305	8,971	8,005	6,498	4,026	3,772	4,791	4,437
Net Property, Plant and Equipment	22,974	18,767	19,652	24,774	27,316	28,447	36,296	19,068	16,190	21,171	13,935
Other Assets	6,250	7,927	7,720	7,038	7,039	6,425	7,843	6,438	5,951	4,279.00	1,194.00
Total Assets	31,908	29,686	32,927	41,117	43,326	42,877	50,637	29,532	25,913	30,241	19,566
Total Current Liabilities	3,135	3,802	4,583	6,738	6,003	6,655	5,935	3,295	2,616	3,315	2,226
Long-term Debt	5,661	5,847	3,819	5,969	8,455	7,956	9,830	12,137	10,154	10,291	5,785
Deferred Income Taxes	3,679	1,899	2,756	4,763	4,693	4,793	6,244	888	648	835	877
Other Liabilities and Deferred Credits	2,373	2,568	2,516	2,217	2,897	2,974	2,287	2,223	2,120	1,696	1,492
Total Liabilities	14,848	14,116	13,674	19,687	22,048	22,378	24,296	18,543	15,538	16,137	10,380
Minority Interests	-	-	-	-	-	-	4,802	3,940	4,448	4,850	-
Common Shares	44	45	43	40	41	41	41	42	52	53	45
Contributed Surplus (Paid-in Capital)	6,257	6,527	5,601	3,507	3,688	3,780	4,088	4,996	7,237	7,333	4,486
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	10,376	7,613	11,882	16,308	15,778	15,410	16,631	1,781	(1,646)	702	3,650
Other / Comprehensive Income (Loss)	383	1,385	1,727	1,575	1,771	1,268	779	230	284	1,166	1,005
Total Shareholders' Equity	17,060	15,570	19,253	21,430	21,278	20,499	21,539	7,049	5,927	9,254	9,186
Total Liabilities and Shareholders' Equity	31,908	29,686	32,927	41,117	43,326	42,877	50,637	29,532	25,913	30,241	19,566
Return on Capital Employed (ROCE)	**-7.3%**	**-10.0%**	**21.6%**	**20.8%**	**0.1%**	**0.8%**	**6.3%**	**-57.2%**	**-14.6%**	**7.9%**	**23.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	13,073	6,097	7,262	8,315	7,153	8,522	9,910	5,382	4,182	5,150	5,677	15,009	30,301
Production Costs	2,739	1,670	1,689	1,851	2,074	2,268	2,332	2,104	1,582	1,823	2,225	5,630	10,066
Exploration	-	-	-	-	-	-	-	-	-	380	177	557	557
DD&A	3,253	1,923	1,767	2,078	2,635	2,576	2,984	2,655	1,217	1,419	1,559	4,195	9,834
G&A/Other	285	512	575	653	691	641	713	566	399	24	24	447	1,726
Pre-tax Results Of Operations	6,796	1,992	3,231	3,733	1,753	3,037	3,881	57	984	1,504	1,692	4,180	8,118
Income Taxes	2,256	660	1,095	1,255	578	985	1,320	30	327	495	382	1,204	2,555
Results Of Operations	4,540	1,332	2,136	2,478	1,175	2,052	2,561	27	657	1,009	1,310	2,976	5,563

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	11,720	6,097	7,262	8,315	7,153	8,522	9,910	5,382	4,182	5,150	5,677	15,009	30,301
Production Costs	2,308	1,670	1,689	1,851	2,074	2,268	2,332	2,104	1,582	1,823	2,225	5,630	10,066
Exploration	-	-	-	-	-	-	-	-	-	380	177	557	557
DD&A	2,948	1,923	1,767	2,078	2,635	2,576	2,984	2,655	1,217	1,419	1,559	4,195	9,834
G&A/Other	265	512	575	653	691	641	713	566	399	24	24	447	1,726
Pre-tax Results Of Operations	6,199	1,992	3,231	3,733	1,753	3,037	3,881	57	984	1,504	1,692	4,180	8,118
Income Taxes	2,005	660	1,095	1,255	578	985	1,320	30	327	495	382	1,204	2,555
Results Of Operations	4,194	1,332	2,136	2,478	1,175	2,052	2,561	27	657	1,009	1,310	2,976	5,563

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	1,353	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	431	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	-	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	305	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	20	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	597	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	251	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	346	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$55.01	$26.17	$31.85	$34.53	$28.69	$33.73	$40.31	$21.63	$18.74	$25.99	$29.14	$24.36	$27.28
Production Costs	$11.52	$7.17	$7.41	$7.69	$8.32	$8.98	$9.49	$8.46	$7.09	$9.20	$11.42	$9.14	$9.06
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.92	$0.91	$0.90	$0.50
DD&A	$13.69	$8.25	$7.75	$8.63	$10.57	$10.20	$12.14	$10.67	$5.45	$7.16	$8.00	$6.81	$8.85
G&A/Other	$1.20	$2.20	$2.52	$2.71	$2.77	$2.54	$2.90	$2.27	$1.79	$0.12	$0.12	$0.73	$1.55
Pre-tax Results Of Operations	$28.59	$8.55	$14.17	$15.50	$7.03	$12.02	$15.79	$0.23	$4.41	$7.59	$8.68	$6.78	$7.31
Income Taxes	$9.49	$2.83	$4.80	$5.21	$2.32	$3.90	$5.37	$0.12	$1.47	$2.50	$1.96	$1.95	$2.30
Results Of Operations	$19.10	$5.72	$9.37	$10.29	$4.71	$8.12	$10.42	$0.11	$2.94	$5.09	$6.72	$4.83	$5.01

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$52.48	$26.17	$31.85	$34.53	$28.69	$33.73	$40.31	$21.63	$18.74	$25.99	$29.14	$24.36	$27.28
Production Costs	$10.33	$7.17	$7.41	$7.69	$8.32	$8.98	$9.49	$8.46	$7.09	$9.20	$11.42	$9.14	$9.06
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$1.92	$0.91	$0.90	$0.50
DD&A	$13.20	$8.25	$7.75	$8.63	$10.57	$10.20	$12.14	$10.67	$5.45	$7.16	$8.00	$6.81	$8.85
G&A/Other	$1.19	$2.20	$2.52	$2.71	$2.77	$2.54	$2.90	$2.27	$1.79	$0.12	$0.12	$0.73	$1.55
Pre-tax Results Of Operations	$27.76	$8.55	$14.17	$15.50	$7.03	$12.02	$15.79	$0.23	$4.41	$7.59	$8.68	$6.78	$7.31
Income Taxes	$8.98	$2.83	$4.80	$5.21	$2.32	$3.90	$5.37	$0.12	$1.47	$2.50	$1.96	$1.95	$2.30
Results Of Operations	$18.78	$5.72	$9.37	$10.29	$4.71	$8.12	$10.42	$0.11	$2.94	$5.09	$6.72	$4.83	$5.01

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$94.40	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	$30.07	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	$0.00	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	$21.28	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	$1.40	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	$41.65	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	$17.52	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	$24.13	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	2,575.3	2,646.6	2,547.9	2,611.0	2,569.9	2,394.5	1,920.5	1,608.2	1,416.4	1,202.7	1,098.6	1,239.3	1,449.3
Liquids Production (b/d)	221,918	197,260	200,000	224,658	254,795	293,151	353,425	413,699	375,342	342,466	350,685	356,164	367,123
Total Production (boe/d)	651,142	638,356	624,658	659,817	683,105	692,237	673,516	681,735	611,416	542,922	533,790	562,709	608,676
% Gas Production	66%	69%	68%	66%	63%	58%	48%	39%	39%	37%	34%	37%	40%
% Oil Production	34%	31%	32%	34%	37%	42%	52%	61%	61%	63%	66%	63%	60%
Proven Reserves:													
Gas Reserves (bcf)	9,885.0	9,757.0	10,283.0	10,486.0	9,446.0	9,308.0	7,687.0	5,821.0	5,631.0	5,987.0	4,761.0	5,459.7	5,977.4
Oil Reserves (mmbbls)	781.0	1,107.0	1,160.0	1,257.0	1,389.0	1,412.0	1,473.0	1,212.0	1,120.0	1,154.0	1,133.0	1,135.7	1,218.4
Total Proven Reserves (mmboe)	2,428.5	2,733.2	2,873.8	3,004.7	2,963.3	2,963.3	2,754.2	2,182.2	2,058.5	2,151.8	1,926.5	2,045.6	2,214.6
% Gas Reserves	68%	59%	60%	58%	53%	52%	47%	44%	46%	46%	41%	44%	45%
% Oil Reserves	32%	41%	40%	42%	47%	48%	53%	56%	54%	54%	59%	56%	55%
Proven Reserve Life Index	10.2	11.7	12.6	12.5	11.9	11.7	11.2	8.8	9.2	10.9	9.9	10.0	10.0
Proven Reserve Additions:													
Gas Additions (bcf)	1,831.0	838.0	1,456.0	1,156.0	-102.0	736.0	-920.0	-1,279.0	327.0	795.0	-825.0	297.0	(1,902.0)
Oil Additions (mmbbls)	(136.0)	398.0	126.0	179.0	225.0	130.0	190.0	-110.0	45.0	159.0	107.0	311.0	391.0
Total Additions (mmboe)	169.2	537.7	368.7	371.7	208.0	252.7	36.7	-323.2	99.5	291.5	-30.5	360.5	74.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	545.2	457.0	353.3	420.7	448.0	260.7	211.2	117.5	126.7	236.2	243.3	606.2	934.8
Acquisitions	66.0	1.2	3.5	8.0	0.3	1.2	265.2	8.8	20.5	0.0	0.0	20.5	294.5
Dispositions	(6.8)	(135.0)	(99.2)	(1.0)	(2.0)	(15.8)	(382.8)	(6.2)	(156.8)	(5.5)	(267.2)	(429.5)	(818.5)
Revisions of Estimates	(435.2)	214.5	111.0	-56.0	-238.3	6.7	-56.8	-443.3	109.2	60.8	-6.7	163.3	(336.8)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	322.3%	85.0%	95.8%	113.2%	215.4%	103.2%	575.9%	-36.4%	127.3%	81.0%	-797.8%	168.1%	1263.3%
Acquisitions	39.0%	0.2%	0.9%	2.2%	0.2%	0.5%	723.2%	-2.7%	20.6%	0.0%	0.0%	5.7%	398.0%
Dispositions	-4.0%	-25.1%	-26.9%	-0.3%	-1.0%	-6.3%	-1044.1%	1.9%	-157.6%	-1.9%	876.0%	-119.1%	-1106.1%
Revisions of Estimates	-257.2%	39.9%	30.1%	-15.1%	-114.6%	2.6%	-155.0%	137.2%	109.7%	20.9%	21.9%	45.3%	-455.2%
Additions as % of Production:													
Gas	194.8%	86.7%	156.6%	121.3%	-10.9%	84.2%	-131.2%	-217.9%	63.2%	181.1%	-205.7%	21.9%	-71.9%
Oil	-167.9%	552.8%	172.6%	218.3%	241.9%	121.5%	147.3%	-72.8%	32.8%	127.2%	83.6%	79.7%	58.4%
Total	71.2%	230.8%	161.7%	154.3%	83.4%	100.0%	14.9%	-129.9%	44.6%	147.1%	-15.7%	58.5%	6.7%
Additions as % of Reserves:													
Gas	18.5%	8.6%	14.2%	11.0%	-1.1%	7.9%	-12.0%	-22.0%	5.8%	13.3%	-17.3%	5.4%	-31.8%
Oil	-17.4%	36.0%	10.9%	14.2%	16.2%	9.2%	12.9%	-9.1%	4.0%	13.8%	9.4%	27.4%	32.1%
Total	7.0%	19.7%	12.8%	12.4%	7.0%	8.5%	1.3%	-14.8%	4.8%	13.5%	-1.6%	17.6%	3.3%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,342.0	$534.0	$688.0	$538.0	$655.0	$595.0	$322.0	$587.0	$677.0	$764.0	$0.0	$1,441.0	$2,350.0
Development	$6,122.0	$3,383.0	$4,639.0	$5,418.0	$6,099.0	$5,089.0	$5,463.0	$3,671.0	$1,143.0	$1,261.0	$1,786.0	$4,190.0	$13,324.0
Acquisitions	$2,586.0	$170.0	$1,217.0	$987.0	$1,251.0	$238.0	$6,387.0	$912.0	$1,595.0	$56.0	$73.0	$1,724.0	$9,023.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$10,050.0	$4,087.0	$6,544.0	$6,943.0	$8,005.0	$5,922.0	$12,172.0	$5,170.0	$3,415.0	$2,081.0	$1,859.0	$7,355.0	$24,697.0
Expenditures as % of Total:													
Exploration	13.4%	13.1%	10.5%	7.7%	8.2%	10.0%	2.6%	11.4%	19.8%	36.7%	0.0%	19.6%	9.5%
Development	60.9%	82.8%	70.9%	78.0%	76.2%	85.9%	44.9%	71.0%	33.5%	60.6%	96.1%	57.0%	53.9%
Acquisitions	25.7%	4.2%	18.6%	14.2%	15.6%	4.0%	52.5%	17.6%	46.7%	2.7%	3.9%	23.4%	36.5%
Cashflow (US$million)	$7,793.2	$3,255.3	$3,903.0	$4,556.0	$3,809.7	$4,628.4	$5,544.8	$2,681.7	$1,873.8	$2,428.0	$2,868.7	$7,170.5	$15,397.0
Cashflow (US$/boe)	$32.79	$13.97	$17.12	$18.92	$15.28	$18.32	$22.56	$10.78	$8.40	$12.25	$14.72	$11.64	$13.86
Recycle Ratio	0.6x	2.3x	1.2x	1.0x	0.4x	0.8x	0.8x	-0.7x	0.7x	1.8x	1.3x	1.2x	0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$67.85	$5.83	$11.47	$16.33	$32.21	$21.26	$37.48	-$13.07	$6.52	$6.53	$10.77	$7.32	$26.21
Acquisition Costs	$39.18	$145.71	$347.71	$123.38	$3,753.00	$204.00	$24.09	$103.25	$77.80	na	na	$84.10	$30.64
All Sources (incl. revisions)	$57.10	$6.08	$13.99	$18.63	$38.12	$22.06	$29.02	-$16.31	$12.22	$6.71	$11.08	$9.31	$27.67
Exploration & Development (excl. revisions)	$13.69	$8.57	$15.08	$14.16	$15.08	$21.81	$27.40	$36.24	$12.13	$8.21	$10.48	$9.29	$16.77
Acquisition Costs	$39.18	$145.71	$347.71	$123.38	$3,753.00	$204.00	$24.09	$103.25	$77.80	na	na	$84.10	$30.64
All Sources (excl. revisions)	$16.44	$8.92	$18.34	$16.20	$17.86	$22.62	$25.55	$40.92	$23.20	$8.81	$7.64	$11.74	$20.09
Geographically Segmented Costs													
North America	$61.94	$6.08	$13.99	$18.63	$38.12	$22.06	$29.02	-$16.31	$12.22	$6.71	$11.08	$9.81	$28.11
Total International	$25.21	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	11.52	7.17	7.41	7.69	8.32	8.98	9.49	8.46	7.09	9.20	11.42	9.14	9.06
Exploration Expense	-	-	-	-	-	-	-	-	-	1.92	0.91	0.90	0.50
G&A/Other	1.20	2.20	2.52	2.71	2.77	2.54	2.90	2.27	1.79	0.12	0.12	0.73	1.55
F&D Costs	16.44	6.08	13.99	18.63	38.12	22.06	29.02	40.92	12.22	6.71	11.08	9.81	19.99
Return on Capital	10.56	4.51	11.22	14.67	28.54	16.39	21.01	22.45	7.02	4.59	6.85	6.20	12.51
Income Taxes	5.24	2.24	5.75	7.43	14.05	7.86	10.83	25.54	3.50	2.25	2.00	2.51	5.74
Breakeven Oil Price	44.97	22.19	40.89	51.13	91.80	57.82	73.24	99.64	31.62	24.80	32.38	29.28	49.36
Quality Differential	13.67	10.46	11.79	19.18	23.62	25.23	24.00	17.07	14.88	15.27	24.16	18.10	19.08
Required Brent Price	58.64	32.65	52.68	70.31	115.41	83.05	97.24	116.71	46.50	40.06	56.55	47.38	68.43

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	10.33	7.17	7.41	7.69	8.32	8.98	9.49	8.46	7.09	9.20	11.42	9.14	9.06
Exploration Expense	-	-	-	-	-	-	-	-	-	1.92	0.91	0.90	0.50
G&A/Other	1.19	2.20	2.52	2.71	2.77	2.54	2.90	2.27	1.79	0.12	0.12	0.73	1.55
F&D Costs	15.49	6.08	13.99	18.63	38.12	22.06	29.02	40.92	12.22	6.71	11.08	9.81	19.99
Return on Capital	10.02	4.51	11.22	14.67	28.54	16.39	21.01	22.45	7.02	4.59	6.85	6.20	12.51
Income Taxes	4.79	2.24	5.75	7.43	14.05	7.86	10.83	25.54	3.50	2.25	2.00	2.51	5.74
Breakeven Oil Price	41.82	22.19	40.89	51.13	91.80	57.82	73.24	99.64	31.62	24.80	32.38	29.28	49.36
Quality Differential	14.37	10.46	11.79	19.18	23.62	25.23	24.00	17.07	14.88	15.27	24.16	18.10	19.08
Required Brent Price	56.19	32.65	52.68	70.31	115.41	83.05	97.24	116.71	46.50	40.06	56.55	47.38	68.43

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	30.07	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	-	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	1.40	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	25.21	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	1.00	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	0.73	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	58.40	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	2.84	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	61.24	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Devon Energy Corp. (DVN - AMEX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.02	11.03	11.80	13.37	15.38	14.47	13.09	10.69	8.92	11.50	13.96	11.37	11.57
Exploration Expense	-	-	-	-	-	-	-	-	-	2.40	1.11	1.12	0.64
G&A/Other	1.56	3.38	4.02	4.72	5.12	4.09	4.00	2.88	2.25	0.15	0.15	0.90	1.98
F&D Costs (1-Year)	29.61	6.82	21.43	28.02	36.22	33.28	34.98	47.14	17.28	8.88	12.86	12.71	24.23
Return on Capital	19.16	5.48	18.57	24.33	32.23	27.12	25.78	24.96	9.51	5.67	7.55	7.57	14.55
Income Taxes	9.52	2.71	9.52	12.32	15.87	13.01	13.29	28.40	4.73	2.78	2.20	3.07	6.68
Breakeven Oil Price	**74.87**	**29.43**	**65.33**	**82.76**	**104.82**	**91.97**	**91.13**	**114.07**	**42.68**	**31.38**	**37.84**	**36.74**	**59.65**
Quality Differential	17.81	16.09	18.77	33.37	43.66	40.66	33.11	21.58	18.71	19.08	29.55	22.45	24.41
Required Brent Price	**92.68**	**45.52**	**84.10**	**116.13**	**148.48**	**132.63**	**124.24**	**135.65**	**61.39**	**50.46**	**67.39**	**59.19**	**84.05**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.02	11.03	11.80	13.37	15.38	14.47	13.09	10.69	8.92	11.50	13.96	11.37	11.57
Exploration Expense	-	-	-	-	-	-	-	-	-	2.40	1.11	1.12	0.64
G&A/Other	1.56	3.38	4.02	4.72	5.12	4.09	4.00	2.88	2.25	0.15	0.15	0.90	1.98
F&D Costs (1-Year)	50.07	14.14	25.96	26.06	57.59	22.87	35.51	19.89	19.50	8.61	15.41	13.78	19.78
Return on Capital	31.82	11.35	22.48	22.64	49.44	18.02	25.30	10.54	10.72	5.49	9.13	8.18	11.94
Income Taxes	15.81	5.62	11.52	11.47	24.34	8.65	13.05	11.99	5.34	2.69	2.67	3.31	5.49
Breakeven Oil Price	**114.27**	**45.52**	**75.77**	**78.25**	**151.87**	**68.09**	**90.95**	**55.98**	**46.73**	**30.84**	**42.43**	**38.66**	**51.40**
Quality Differential	17.81	16.09	18.77	33.37	43.66	40.66	33.11	21.58	18.71	19.08	29.55	22.45	24.41
Required Brent Price	**132.09**	**61.61**	**94.54**	**111.62**	**195.53**	**108.75**	**124.06**	**77.57**	**65.44**	**49.92**	**71.98**	**61.11**	**75.81**

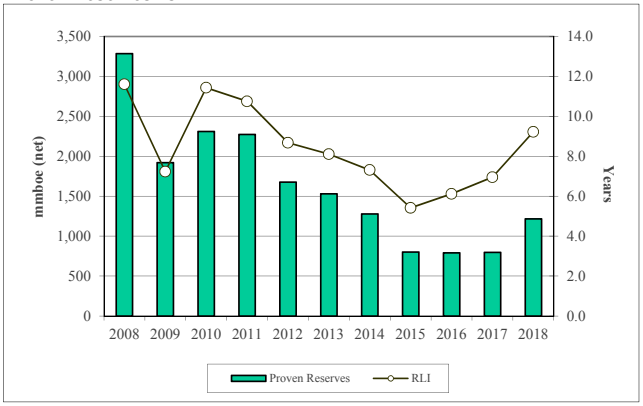
Source: BMO Capital Markets, Company Reports

Encana Corp. (ECA - TSX, NYSE, Restricted) US$, net

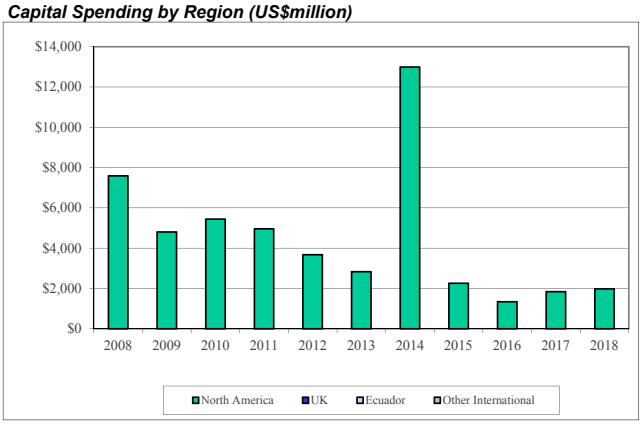
- Encana's results of operations improved to $7.88/boe in 2018 from $6.47/boe in 2017.
- The company's one-year F&D costs averaged $3.87/boe in 2018 versus $6.03/boe last year. On a realized oil:gas price ratio basis, F&D costs improved to $4.99/boe compared to $10.83/boe last year, while the costs for PD reserves dropped to $9.90/boe from $16.01/boe last year.
- The company's 2018 operations implied a required Brent breakeven oil price of $46.85/boe on a realized ratio basis on total proved reserves, while its PD cost assessment implied a Brent breakeven oil price of $55.74/boe.
- Encana reported ROCE of 11.7% in 2018 relative to a normalized 2017 ROCE of 7.1%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

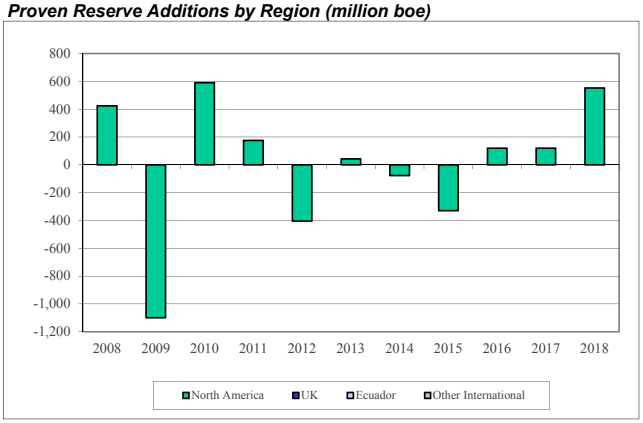
Proven Reserves vs RLI



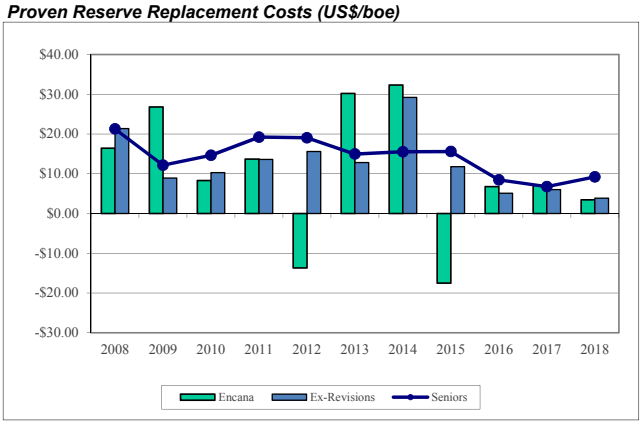
Capital Spending by Region (US$million)



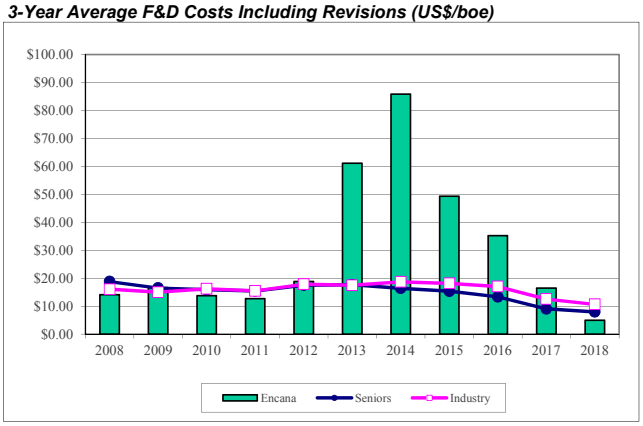
Proven Reserve Additions by Region (million boe)



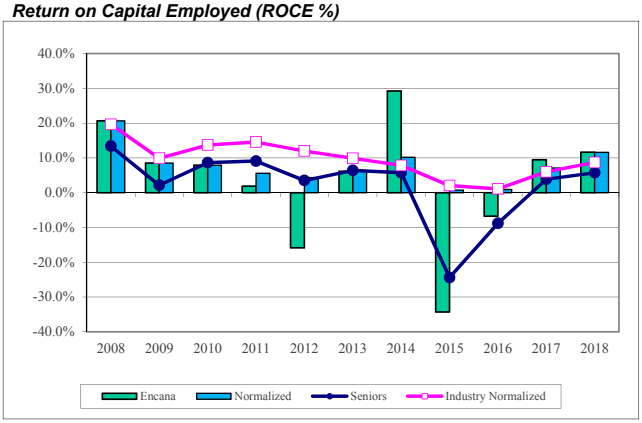
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

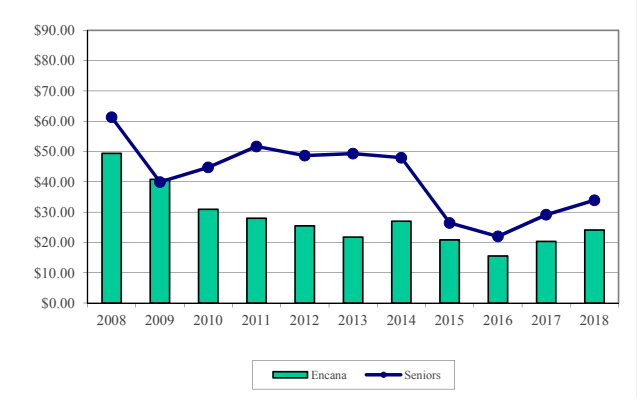
See pages F1 to F4 for analyst coverage.

Encana Corp. (ECA - TSX, NYSE, Restricted)

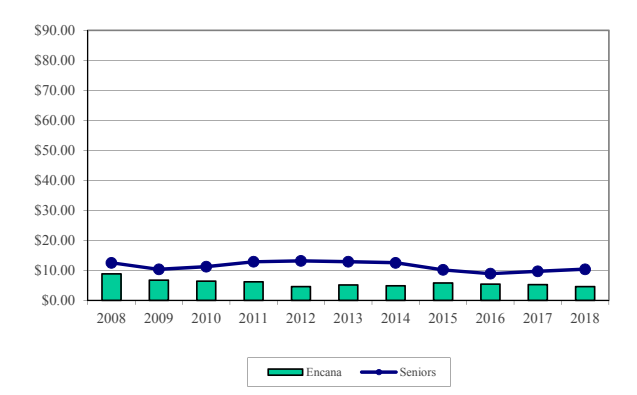
US$/boe, net

Worldwide

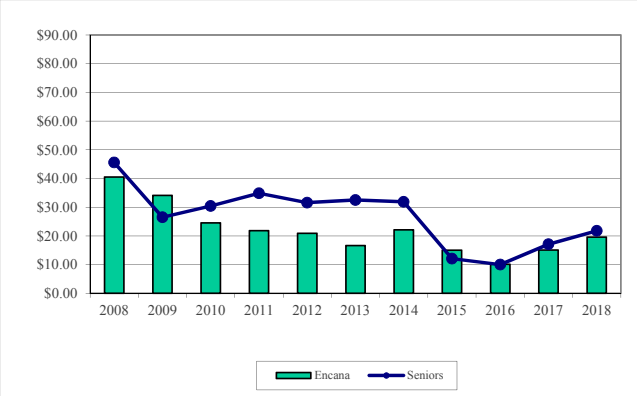
Upstream Net Revenue (US$/boe)



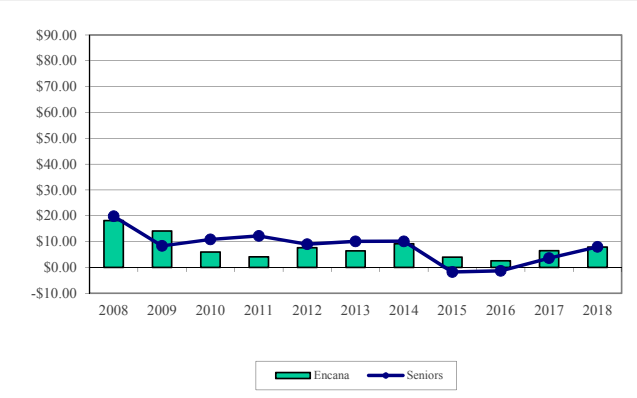
Production Costs (US$/boe)



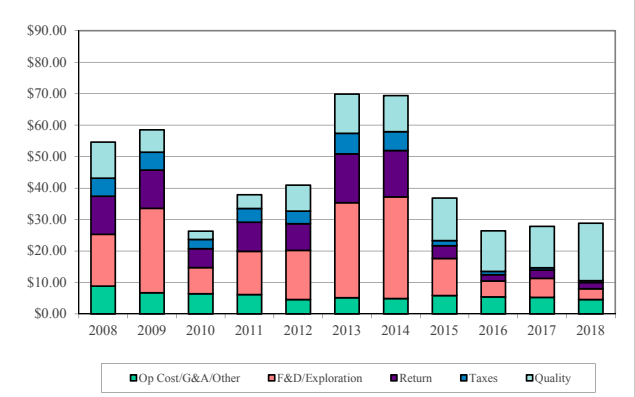
Upstream Operating Earnings (US$/boe)



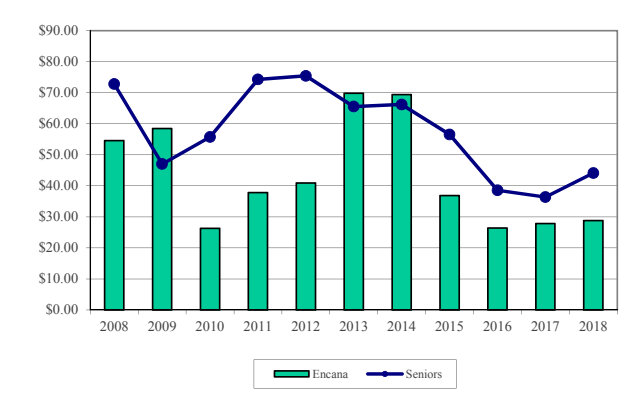
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)

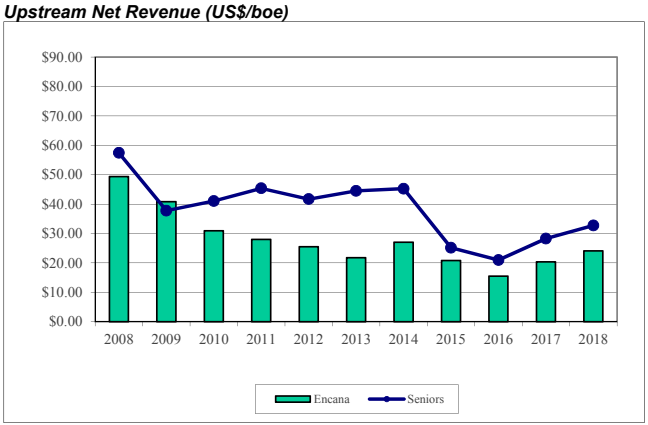


Source: BMO Capital Markets, Company Reports

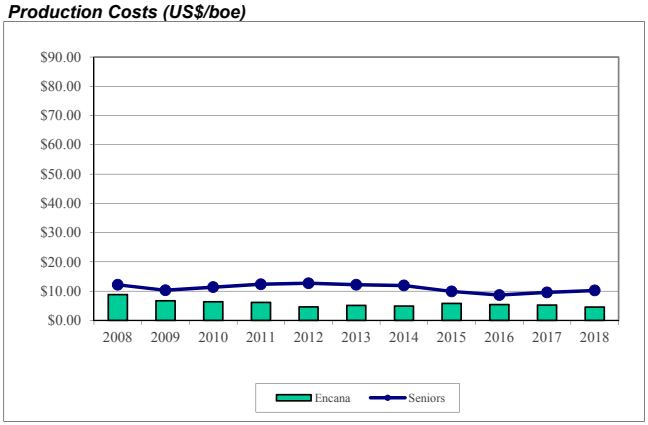
Encana Corp. (ECA - TSX, NYSE, Restricted) US$/boe, net

North America

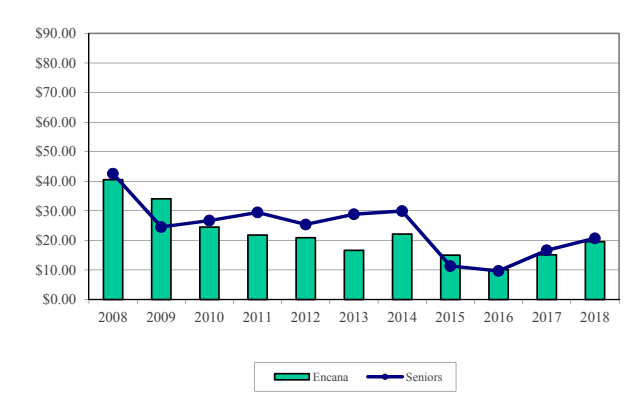
Upstream Net Revenue (US$/boe)



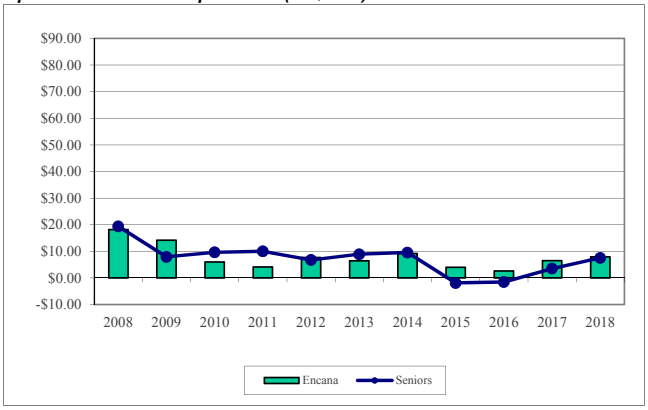
Production Costs (US$/boe)



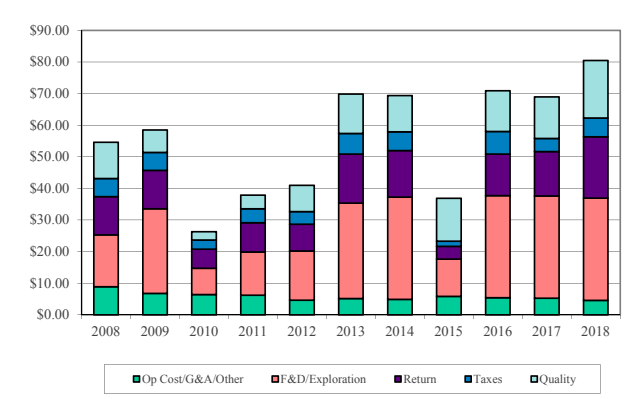
Upstream Operating Earnings (US$/boe)



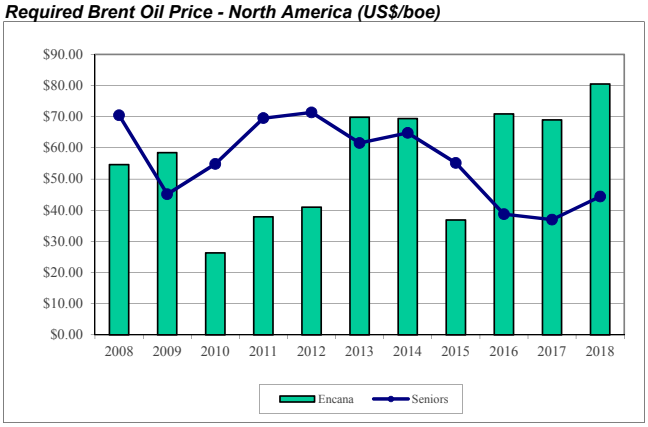
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Encana Corp. (ECA - TSX, NYSE, Restricted)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	15,679	12,122	7,104	6,894	6,125	5,587	6,212	4,313	2,837	3,069	5,457
Midstream / Downstream Revenue	11,666	-	-	-	-	-	-	-	-	-	-
Other	2,719	(1,008)	1,766	1,573	(965)	271	1,807	109	81	1,374	482
Total Revenue and Other Income	30,064	11,114	8,870	8,467	5,160	5,858	8,019	4,422	2,918	4,443	5,939
Crude Oil and Product Purchases	11,186	1,460	739	635	349	441	1,191	323	586	788	1,100
Production and Transportation Expenses	4,657	2,907	1,920	2,052	2,025	2,335	2,240	1,975	1,499	1,351	1,537
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	142	-	-	-	-	-	-	-
General and Administrative	473	477	359	348	392	439	327	275	309	254	157
Depreciation, Depletion and Amortization	4,223	3,704	3,242	3,423	1,956	1,565	1,745	1,488	859	833	1,272
Interest, net	586	405	501	468	522	563	654	614	397	363	351
Other	283	151	3	1,346	4,694	474	(2,819)	7,712	837	(613)	322
Earnings Before Income Tax	8,577	1,939	2,060	2	(4,831)	(12)	4,629	(8,010)	(1,620)	1,430	1,163
Current Income Taxes	987	1,908	(213)	(174)	(200)	(191)	243	(34)	(78)	(63)	(55)
Future Income Taxes	1,646	(1,799)	774	48	(1,837)	(57)	960	(2,811)	(598)	666	149
Total Income Taxes	2,633	109	561	(126)	(2,037)	(248)	1,203	(2,845)	(676)	603	94
Minority Interest	-	-	-	-	-	-	(34)	-	-	-	-
Earnings From Continuing Operations	5,944	1,830	1,499	128	(2,794)	236	3,392	(5,165)	(944)	827	1,069
Discontinued Operations/Extraordinary Items	-	32	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	5,944	1,862	1,499	128	(2,794)	236	3,392	(5,165)	(944)	827	1,069
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	5,944	1,862	1,499	128	(2,794)	236	3,392	(5,165)	(944)	827	1,069

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	5,944	1,830	1,499	128	(2,794)	236	3,392	(5,165)	(944)	827	1,069
Charges and Credits Not Impacting Cash	5,869	1,905	4,016	3,593	119	1,508	2,705	(1,323)	261	1,499	1,421
Other	(2,427)	3,044	(1,076)	454	6,183	804	(3,378)	7,918	1,521	(983)	(375)
Cash Flow From Operations	9,386	6,779	4,439	4,175	3,508	2,548	2,719	1,430	838	1,343	2,115
Change in Working Capital / Other	(531)	1,094	(2,074)	(132)	(401)	(259)	(52)	251	(213)	(293)	185
Net Cash From Operating Activities	8,855	7,873	2,365	4,043	3,107	2,289	2,667	1,681	625	1,050	2,300
Total Capital Expenditures	(7,080)	(4,864)	(4,773)	(4,578)	(3,476)	(2,712)	(2,526)	(2,232)	(1,132)	(1,796)	(1,975)
Acquisitions, net	(1,174)	1,154	150	1,493	3,664	521	(4,633)	1,838	1,052	682	476
Other	701	(1,096)	(106)	(712)	173	296	2,430	(271)	51	77	(56)
Net Cash From Investing Activities	(7,553)	(4,806)	(4,729)	(3,797)	361	(1,895)	(4,729)	(665)	(29)	(1,037)	(1,555)
Net Change in Debt	6	1,862	(200)	527	(506)	(500)	(1,210)	(1,929)	(1,050)	(82)	(90)
Net Change in Common Stock	(246)	24	5	2	-	-	-	1,088	1,129	-	(250)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(1,199)	(1,051)	(590)	(588)	(588)	(401)	(220)	(152)	(51)	(57)	(56)
Other	-	-	-	-	-	-	-	-	-	(0)	0
Net Cash From Financing Activities	(1,439)	835	(1,284)	(214)	(1,111)	(909)	(39)	(1,054)	(38)	(139)	(396)
Effect of Exchange Rate on Cash	(33)	19	2	(1)	22	(98)	(127)	(29)	5	(10)	(10)
Net Increase/(Decrease) in Cash	(170)	3,921	(3,646)	31	2,379	(613)	(2,228)	(67)	563	(136)	339
Cash and Equivalents, Beginning of Year	553	354	4,275	629	800	3,179	2,566	338	271	834	719
Cash and Equivalents, End of Year	383	4,275	629	660	3,179	2,566	338	271	834	698	1,058

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Encana Corp. (ECA - TSX, NYSE, Restricted)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	5,602	5,795	2,854	4,927	5,477	4,290	2,861	1,607	1,923	2,271	2,676
Net Property, Plant and Equipment	35,424	26,173	28,701	23,913	9,751	10,035	18,015	9,857	8,139	8,954	8,972
Other Assets	6,221	1,859	2,465	5,078	3,472	3,323	3,745	4,180	4,591	4,042	3,696
Total Assets	47,247	33,827	34,020	33,918	18,700	17,648	24,621	15,644	14,653	15,267	15,344
Total Current Liabilities	3,894	4,245	2,776	2,820	2,612	2,952	2,406	1,333	1,562	1,658	2,016
Long-term Debt	8,755	7,568	7,129	7,591	7,175	6,124	7,340	5,363	4,198	5,836	5,133
Deferred Income Taxes	6,919	3,386	4,230	4,086	-	-	1,829	24	31	34	27
Other Liabilities and Deferred Credits	4,705	2,014	2,558	3,097	3,618	3,425	3,361	2,757	2,736	1,011	721
Total Liabilities	24,273	17,213	16,693	17,594	13,405	12,501	14,936	9,477	8,527	8,539	7,897
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	4,557	2,360	2,319	2,321	2,354	2,445	2,450	3,621	4,756	4,757	4,656
Contributed Surplus (Paid-in Capital)	-	6	-	4	10	15	1,358	1,358	1,358	1,358	1,358
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	17,584	13,493	13,957	13,804	2,261	2,003	5,188	(202)	(1,198)	(429)	435
Other / Comprehensive Income (Loss)	833	755	1,051	195	670	684	689	1,390	1,210	1,042	998
Total Shareholders' Equity	22,974	16,614	17,327	16,324	5,295	5,147	9,685	6,167	6,126	6,728	7,447
Total Liabilities and Shareholders' Equity	47,247	33,827	34,020	33,918	18,700	17,648	24,621	15,644	14,653	15,267	15,344
Return on Capital (ROCE)	**20.7%**	**8.5%**	**7.9%**	**1.9%**	**-15.9%**	**6.2%**	**29.2%**	**-34.3%**	**-6.7%**	**9.5%**	**11.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	13,975	10,842	6,245	5,916	4,918	4,109	4,719	3,079	2,001	2,327	3,182	7,510	15,308
Production Costs	2,504	1,791	1,292	1,306	887	970	853	860	696	602	602	1,900	3,613
Exploration	-	-	-	-	-	-	-	-	-	-	-	-	-
DD&A	3,889	3,541	3,154	3,333	1,850	1,419	1,617	1,393	783	766	1,221	2,770	5,780
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax Results Of Operations	7,582	5,510	1,799	1,277	2,181	1,720	2,249	826	522	959	1,359	2,840	5,915
Income Taxes	2,439	1,757	588	410	700	507	649	238	185	219	319	723	1,610
Results Of Operations	5,143	3,753	1,211	867	1,481	1,213	1,600	588	337	740	1,040	2,117	4,305

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	13,975	10,842	6,245	5,916	4,918	4,109	4,719	3,079	2,001	2,327	3,182	7,510	15,308
Production Costs	2,504	1,791	1,292	1,306	887	970	853	860	696	602	602	1,900	3,613
Exploration	-	-	-	-	-	-	-	-	-	-	-	-	-
DD&A	3,889	3,541	3,154	3,333	1,850	1,419	1,617	1,393	783	766	1,221	2,770	5,780
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
Pre-tax Results Of Operations	7,582	5,510	1,799	1,277	2,181	1,720	2,249	826	522	959	1,359	2,840	5,915
Income Taxes	2,439	1,757	588	410	700	507	649	238	185	219	319	723	1,610
Results Of Operations	5,143	3,753	1,211	867	1,481	1,213	1,600	588	337	740	1,040	2,117	4,305

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	-	-	-	-	-	-	-	-	-	-	-	na	na
Production Costs	-	-	-	-	-	-	-	-	-	-	-	na	na
Exploration	-	-	-	-	-	-	-	-	-	-	-	na	na
DD&A	-	-	-	-	-	-	-	-	-	-	-	na	na
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	na	na
Pre-tax Results Of Operations	-	-	-	-	-	-	-	-	-	-	-	na	na
Income Taxes	-	-	-	-	-	-	-	-	-	-	-	na	na
Results Of Operations	-	-	-	-	-	-	-	-	-	-	-	na	na

Source: BMO Capital Markets, Company Reports

Encana Corp. (ECA - TSX, NYSE, Restricted)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$49.37	$40.83	$30.92	$27.98	$25.49	$21.78	$27.01	$20.84	$15.50	$20.35	$24.12	$20.01	$21.94
Production Costs	$8.85	$6.74	$6.40	$6.18	$4.60	$5.14	$4.88	$5.82	$5.39	$5.26	$4.56	$5.06	$5.18
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$13.74	$13.33	$15.62	$15.76	$9.59	$7.52	$9.26	$9.43	$6.07	$6.70	$9.26	$7.38	$8.28
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$26.79	$20.75	$8.91	$6.04	$11.30	$9.11	$12.87	$5.59	$4.04	$8.39	$10.30	$7.57	$8.48
Income Taxes	$8.62	$6.62	$2.91	$1.94	$3.63	$2.69	$3.71	$1.61	$1.43	$1.91	$2.42	$1.93	$2.31
Results Of Operations	$18.17	$14.13	$6.00	$4.10	$7.67	$6.43	$9.16	$3.98	$2.61	$6.47	$7.88	$5.64	$6.17

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$49.37	$40.83	$30.92	$27.98	$25.49	$21.78	$27.01	$20.84	$15.50	$20.35	$24.12	$20.01	$21.94
Production Costs	$8.85	$6.74	$6.40	$6.18	$4.60	$5.14	$4.88	$5.82	$5.39	$5.26	$4.56	$5.06	$5.18
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$13.74	$13.33	$15.62	$15.76	$9.59	$7.52	$9.26	$9.43	$6.07	$6.70	$9.26	$7.38	$8.28
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$26.79	$20.75	$8.91	$6.04	$11.30	$9.11	$12.87	$5.59	$4.04	$8.39	$10.30	$7.57	$8.48
Income Taxes	$8.62	$6.62	$2.91	$1.94	$3.63	$2.69	$3.71	$1.61	$1.43	$1.91	$2.42	$1.93	$2.31
Results Of Operations	$18.17	$14.13	$6.00	$4.10	$7.67	$6.43	$9.16	$3.98	$2.61	$6.47	$7.88	$5.64	$6.17

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Encana Corp. (ECA - TSX, NYSE, Restricted)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	3,849.3	3,602.7	3,183.6	3,331.5	2,986.3	2,778.1	2,350.7	1,630.1	1,389.0	1,104.1	1,158.9	1,217.4	1,526.6
Liquids Production (b/d)	133,973	127,123	22,740	24,110	30,959	53,973	86,849	133,151	122,192	129,315	168,219	139,909	127,945
Total Production (boe/d)	775,525	727,580	553,333	579,361	528,676	516,986	478,630	404,840	353,699	313,333	361,370	342,801	382,374
% Gas Production	83%	83%	96%	96%	94%	90%	82%	67%	65%	59%	53%	59%	67%
% Oil Production	17%	17%	4%	4%	6%	10%	18%	33%	35%	41%	47%	41%	33%
Proven Reserves:													
Gas Reserves (bcf)	13,694.7	11,078.7	13,316.7	12,840.0	8,792.0	7,852.0	5,493.0	3,065.0	2,903.0	2,521.0	3,501.0	2,975.0	3,496.6
Oil Reserves (mmbbls)	1,005.6	76.7	92.5	133.2	210.0	220.8	361.8	289.1	306.4	375.2	632.7	438.1	393.0
Total Proven Reserves (mmboe)	3,288.1	1,923.2	2,312.0	2,273.2	1,675.3	1,529.5	1,277.3	799.9	790.2	795.4	1,216.2	933.9	975.8
% Gas Reserves	69%	96%	96%	94%	87%	86%	72%	64%	61%	53%	48%	53%	60%
% Oil Reserves	31%	4%	4%	6%	13%	14%	28%	36%	39%	47%	52%	47%	40%
Proven Reserve Life Index	11.6	7.2	11.4	10.7	8.7	8.1	7.3	5.4	6.1	7.0	9.2	7.4	7.0
Proven Reserve Additions:													
Gas Additions (bcf)	1,783.0	(1,301.0)	3,400.0	756.0	-2,958.0	74.0	-1,501.0	-1,833.0	345.0	21.0	1,403.0	1,769.0	(1,565.0)
Oil Additions (mmbbls)	127.3	(882.5)	24.1	49.5	88.1	30.5	172.7	-24.1	61.9	116.0	318.9	496.8	645.4
Total Additions (mmboe)	424.5	(1,099.3)	590.8	175.5	-404.9	42.8	-77.5	-329.6	119.4	119.5	552.7	791.6	384.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	348.5	533.7	495.4	348.1	227.8	219.3	203.5	191.8	250.8	303.2	476.2	1,030.2	1,425.5
Acquisitions	6.7	5.2	33.7	16.1	7.8	1.8	241.2	0.0	12.2	1.5	35.5	49.2	290.4
Dispositions	(36.9)	(1,278.7)	(63.3)	(186.8)	(136.3)	(50.9)	(479.3)	(200.5)	(78.9)	(141.5)	(23.2)	(243.6)	(923.4)
Revisions of Estimates	106.2	(359.6)	125.0	-1.9	-504.1	-127.3	-42.9	-320.9	-64.7	-43.7	64.2	(44.2)	(408.0)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	82.1%	-48.6%	83.9%	198.3%	-56.3%	512.0%	-262.7%	-58.2%	210.1%	253.7%	86.2%	130.1%	370.7%
Acquisitions	1.6%	-0.5%	5.7%	9.2%	-1.9%	4.1%	-311.4%	0.0%	10.2%	1.3%	6.4%	6.2%	75.5%
Dispositions	-8.7%	116.3%	-10.7%	-106.5%	33.7%	-118.9%	618.7%	60.8%	-66.1%	-118.4%	-4.2%	-30.8%	-240.1%
Revisions of Estimates	25.0%	32.7%	21.2%	-1.1%	124.5%	-297.2%	55.4%	97.4%	-54.2%	-36.5%	11.6%	-5.6%	-106.1%
Additions as % of Production:													
Gas	126.9%	-98.9%	292.6%	62.2%	-271.4%	7.3%	-174.9%	-308.1%	68.0%	5.2%	331.7%	132.7%	-56.2%
Oil	260.3%	-1901.9%	290.4%	562.5%	779.6%	154.8%	544.8%	-49.6%	138.8%	245.8%	519.4%	324.3%	276.4%
Total	150.0%	-414.0%	292.5%	83.0%	-209.8%	22.7%	-44.3%	-223.1%	92.5%	104.5%	419.1%	210.9%	55.1%
Additions as % of Reserves:													
Gas	13.0%	-11.7%	25.5%	5.9%	-33.6%	0.9%	-27.3%	-59.8%	11.9%	0.8%	40.1%	59.5%	-44.8%
Oil	12.7%	-1150.6%	26.1%	37.2%	42.0%	13.8%	47.7%	-8.3%	20.2%	30.9%	50.4%	113.4%	164.2%
Total	12.9%	-57.2%	25.6%	7.7%	-24.2%	2.8%	-6.1%	-41.2%	15.1%	15.0%	45.4%	84.8%	39.4%
Capital Expenditures (US$million):													
Exploration	$671.0	$262.0	$256.0	$355.0	$834.0	$434.0	$48.0	$6.0	$14.0	$5.0	$3.0	$22.0	$76.0
Development	$5,746.0	$4,276.0	$4,454.0	$4,090.0	$2,460.0	$2,214.0	$2,463.0	$2,221.0	$1,115.0	$1,779.0	$1,961.0	$4,855.0	$9,539.0
Acquisitions	$1,174.0	$270.0	$733.0	$515.0	$379.0	$184.0	$10,481.0	$36.0	$210.0	$54.0	$17.0	$281.0	$10,798.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$7,591.0	$4,808.0	$5,443.0	$4,960.0	$3,673.0	$2,832.0	$12,992.0	$2,263.0	$1,339.0	$1,838.0	$1,981.0	$5,158.0	$20,413.0
Expenditures as % of Total:													
Exploration	8.8%	5.4%	4.7%	7.2%	22.7%	15.3%	0.4%	0.3%	1.0%	0.3%	0.2%	0.4%	0.4%
Development	75.7%	88.9%	81.8%	82.5%	67.0%	78.2%	19.0%	98.1%	83.3%	96.8%	99.0%	94.1%	46.7%
Acquisitions	15.5%	5.6%	13.5%	10.4%	10.3%	6.5%	80.7%	1.6%	15.7%	2.9%	0.9%	5.4%	52.9%
Cashflow (C$million)	$9,386.0	$6,779.0	$4,439.0	$4,175.0	$3,508.0	$2,548.0	$2,719.0	$1,430.0	$838.0	$1,343.0	$2,115.0	$4,296.0	$8,445.0
Cashflow (C$/boe)	$33.16	$25.53	$21.98	$19.74	$18.18	$13.50	$15.56	$9.68	$6.49	$11.74	$16.03	$11.44	$12.10
Recycle Ratio	2.0x	1.0x	2.6x	1.4x	-1.3x	0.4x	0.5x	-0.6x	1.0x	1.7x	4.7x	2.3x	0.8x
	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**3-Year**	**5-Year**
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$14.11	$26.06	$7.59	$12.84	-$11.92	$28.78	$15.63	-$17.25	$6.07	$6.87	$3.63	$4.95	$9.45
Acquisition Costs	$175.22	$52.26	$21.73	$31.92	$48.80	$104.15	$43.45	na	$17.21	$35.22	$0.00	$5.71	$37.18
All Sources (incl. revisions)	$16.45	$26.81	$8.32	$13.69	-$13.68	$30.20	$32.33	-$17.52	$6.75	$7.04	$3.44	$4.98	$15.61
Exploration & Development (excl. revisions)	$18.41	$8.50	$9.51	$12.77	$14.46	$12.07	$12.34	$11.61	$4.50	$5.88	$4.12	$4.73	$6.74
Acquisition Costs	$175.22	$52.26	$21.73	$31.92	$48.80	$104.15	$43.45	na	$17.21	$35.22	$0.00	$5.71	$37.18
All Sources (excl. revisions)	$21.37	$8.92	$10.29	$13.62	$15.59	$12.81	$29.21	$11.80	$5.09	$6.03	$3.87	$4.78	$11.90
Geographically Segmented Costs													
North America	$16.45	$26.81	$8.32	$13.69	-$13.68	$30.20	$32.33	-$17.52	$6.75	$7.04	$0.00	$6.31	$18.18
UK	na	na	na	na	na	na	na	na	na	na	$0.00	na	na
Ecuador	na	na	na	na	na	na	na	na	na	na	$0.00	na	na
Other International	na	na	na	na	na	na	na	na	na	na	$0.00	na	na

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Encana Corp. (ECA - TSX, NYSE, Restricted)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Operating Costs	8.85	6.74	6.40	6.18	4.60	5.14	4.88	5.82	5.39	5.26	4.56	5.06	5.18
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	16.45	26.81	8.32	13.69	15.59	30.20	32.33	11.80	5.09	6.03	3.44	4.85	11.74
Return on Capital	12.08	12.16	6.02	9.27	8.48	15.54	14.73	4.04	1.97	2.62	1.98	2.24	5.11
Income Taxes	5.73	5.69	2.92	4.38	4.01	6.49	5.97	1.63	1.08	0.78	0.61	0.77	1.91
Breakeven Oil Price	43.11	51.40	23.66	33.52	32.67	57.37	57.92	23.29	13.53	14.70	10.59	12.93	23.94
Quality Differential	11.48	7.08	2.63	4.33	8.28	12.47	11.48	13.55	12.87	13.13	18.21	14.74	13.85
Required Brent Price	54.59	58.48	26.29	37.85	40.95	69.84	69.39	36.84	26.41	27.83	28.80	27.67	37.79

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Operating Costs	8.85	6.74	6.40	6.18	4.60	5.14	4.88	5.82	5.39	5.26	4.56	5.06	5.18
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	16.45	26.81	8.32	13.69	15.59	30.20	32.33	11.80	32.33	32.33	32.33	32.33	28.23
Return on Capital	12.08	12.16	6.02	9.27	8.48	15.54	14.73	4.04	13.11	14.06	19.43	15.01	12.38
Income Taxes	5.73	5.69	2.92	4.38	4.01	6.49	5.97	1.63	7.19	4.16	5.96	5.13	4.63
Breakeven Oil Price	43.11	51.40	23.66	33.52	32.67	57.37	57.92	23.29	58.02	55.82	62.28	57.53	50.41
Quality Differential	11.48	7.08	2.63	4.33	8.28	12.47	11.48	13.55	12.87	13.13	18.21	14.74	13.85
Required Brent Price	54.59	58.48	26.29	37.85	40.95	69.84	69.39	36.84	70.89	68.95	80.49	72.27	64.25

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Encana Corp. (ECA - TSX, NYSE, Restricted)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	13.76	12.08	15.00	19.15	16.94	13.20	9.20	9.22	9.35	8.69	7.59	8.52	8.83
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	23.84	37.16	19.34	34.10	31.58	26.77	40.61	16.55	9.22	10.83	4.99	7.25	16.44
Return on Capital	19.22	14.70	13.92	24.39	20.52	14.45	21.15	5.86	3.70	4.99	3.06	3.57	7.68
Income Taxes	9.12	6.88	6.76	11.53	9.70	6.04	8.58	2.37	2.03	1.48	0.94	1.22	2.87
Breakeven Oil Price	**65.95**	**70.82**	**55.02**	**89.18**	**78.75**	**60.46**	**79.54**	**34.00**	**24.30**	**25.99**	**16.58**	**20.56**	**35.83**
Quality Differential	17.86	12.69	6.17	13.43	30.50	32.02	21.63	21.46	22.33	21.69	30.27	24.76	23.47
Required Brent Price	**83.81**	**83.50**	**61.19**	**102.61**	**109.25**	**92.48**	**101.18**	**55.46**	**46.63**	**47.68**	**46.85**	**45.32**	**59.31**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	13.76	12.08	15.00	19.15	16.94	13.20	9.20	9.22	9.35	8.69	7.59	8.52	8.83
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	27.34	12.32	45.26	43.42	30.60	29.14	50.46	16.96	23.58	16.01	9.90	13.87	23.38
Return on Capital	22.03	4.90	32.73	30.26	19.89	15.66	25.57	6.01	9.49	7.43	6.11	6.84	10.94
Income Taxes	10.45	2.29	15.89	14.31	9.40	6.55	10.37	2.43	5.21	2.20	1.88	2.34	4.09
Breakeven Oil Price	**73.57**	**31.59**	**108.88**	**107.14**	**76.83**	**64.55**	**95.59**	**34.61**	**47.63**	**34.33**	**25.47**	**31.57**	**47.25**
Quality Differential	17.86	12.69	6.17	13.43	30.50	32.02	21.63	21.46	22.33	21.69	30.27	24.76	23.47
Required Brent Price	**91.43**	**44.27**	**115.05**	**120.57**	**107.34**	**96.57**	**117.23**	**56.07**	**69.96**	**56.02**	**55.74**	**56.33**	**70.72**

Source: BMO Capital Markets, Company Reports

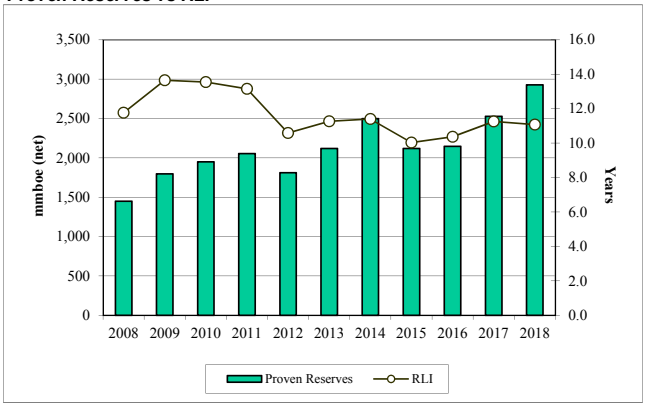
See pages F1 to F4 for analyst coverage.

EOG Resources Inc. (EOG - NYSE) US$, net

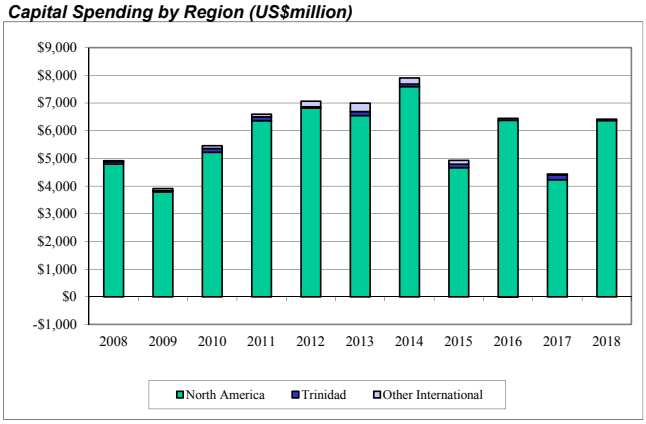
- EOG reported result of operations of $14.52/boe in 2018 versus $5.20/boe in 2017.
- The company's one-year F&D costs rose to $9.49/boe from $7.10/boe last year. On a realized oil:gas price ratio, F&D costs increased to $11.21/boe from $9.63/boe, while the costs for PD reserves rose to $16.45/boe from $11.86/boe the previous year.
- The company's 2018 results imply a required Brent breakeven oil price of $52.64/boe on a realized ratio basis, while its PD costs imply a Brent breakeven of $62.70/boe.
- The company reported ROCE of 16.1% in 2018 relative to a normalized 2017 ROCE of 7.7%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

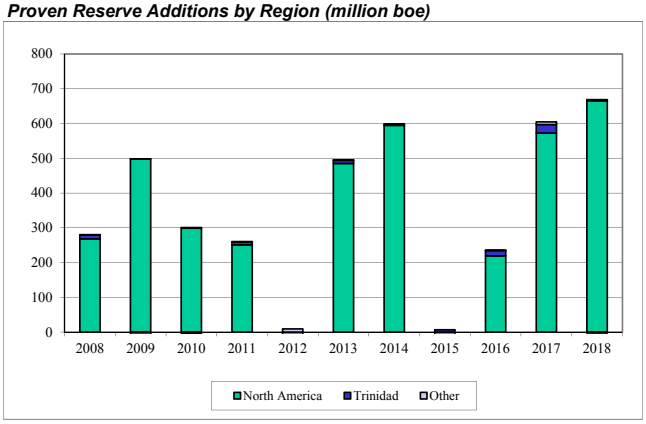
Proven Reserves vs RLI



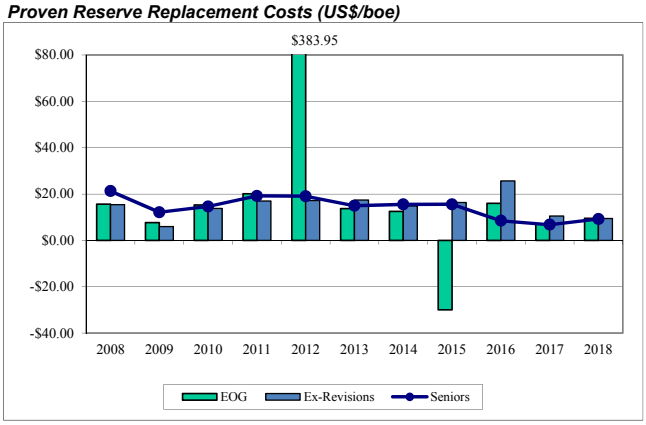
Capital Spending by Region (US$million)



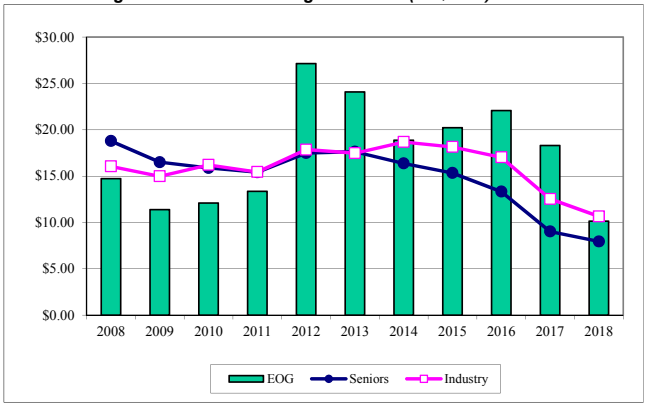
Proven Reserve Additions by Region (million boe)



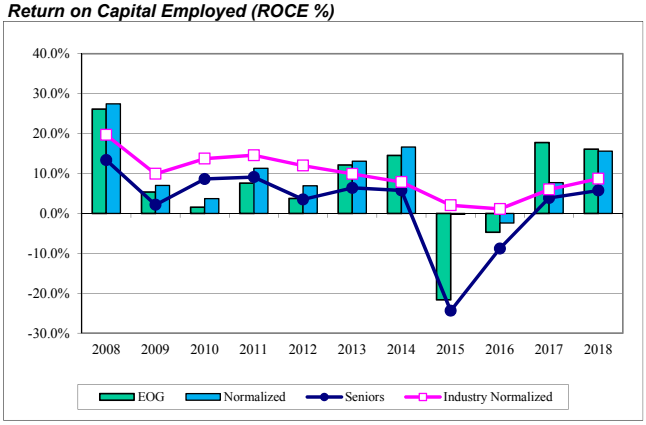
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



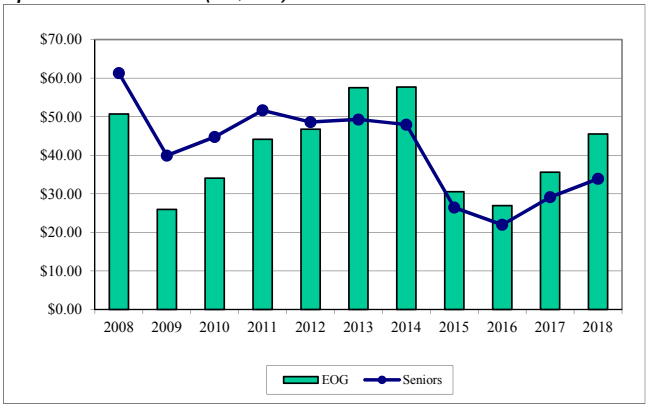
Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

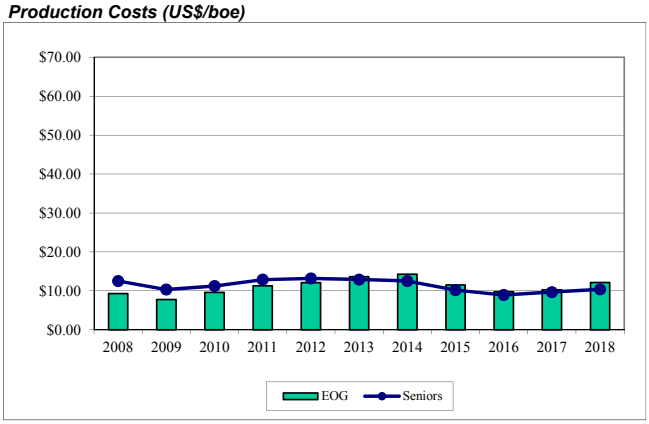
US$/boe, net

Worldwide

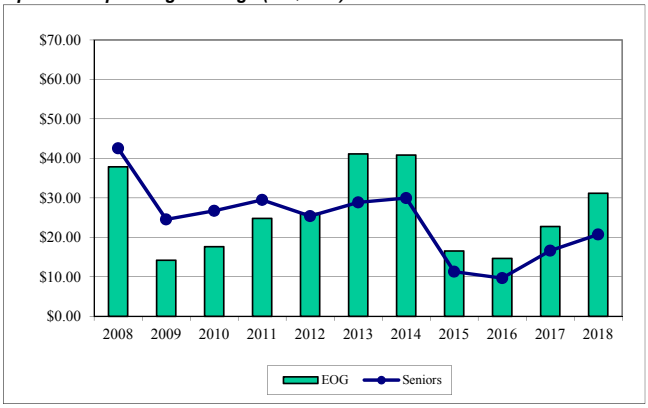
Upstream Net Revenue (US$/boe)



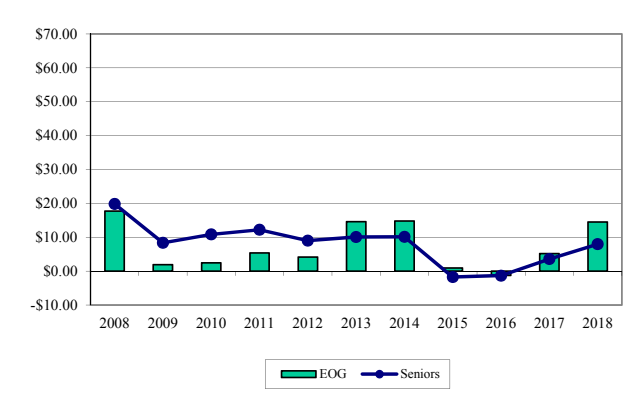
Production Costs (US$/boe)



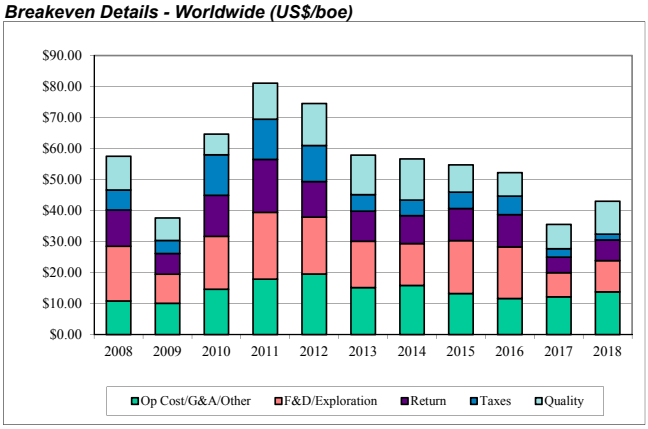
Upstream Operating Earnings (US$/boe)



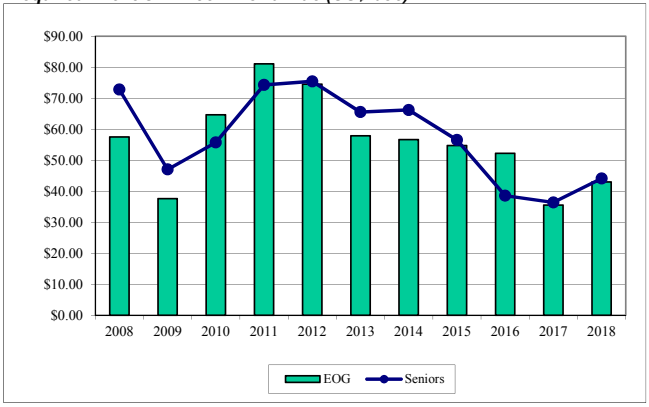
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



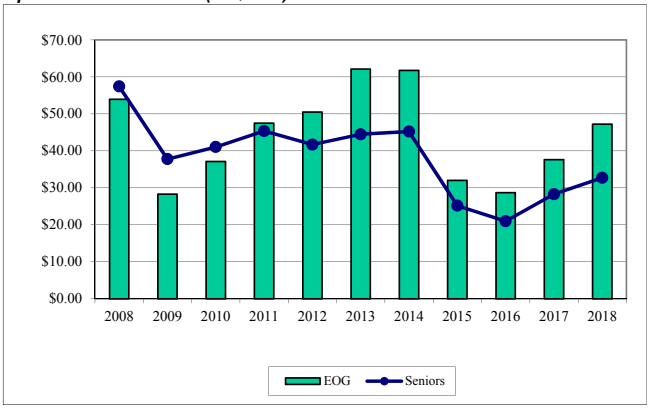
Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

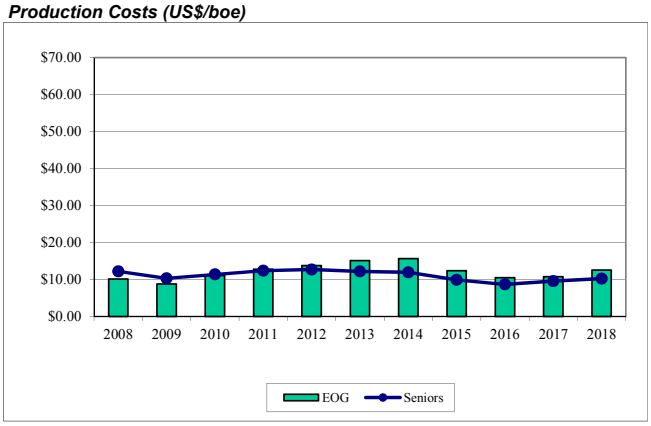
US$/boe, net

North America

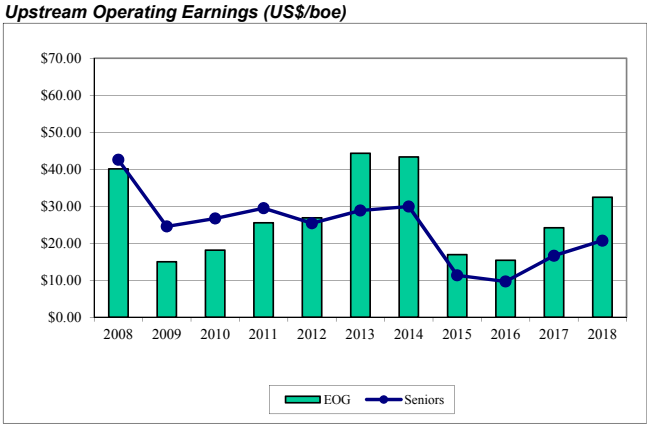
Upstream Net Revenue (US$/boe)



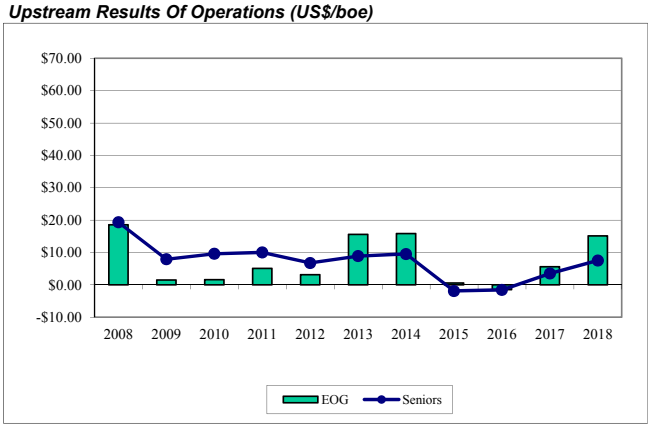
Production Costs (US$/boe)



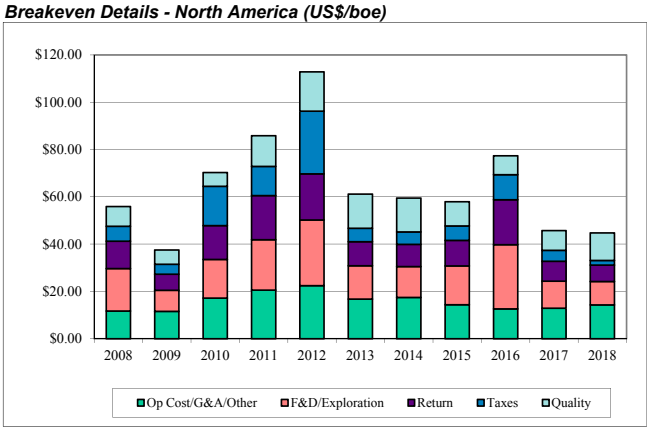
Upstream Operating Earnings (US$/boe)



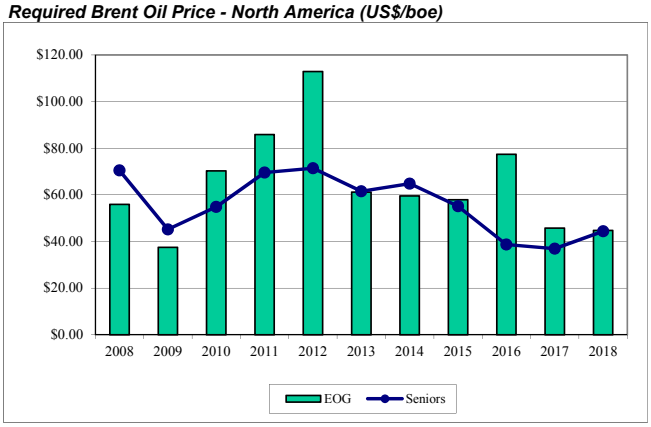
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



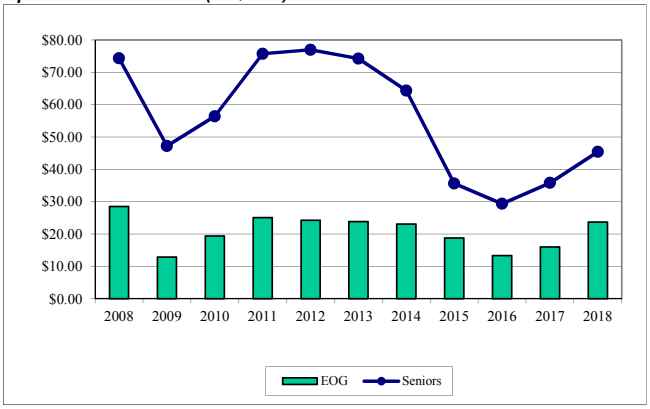
Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

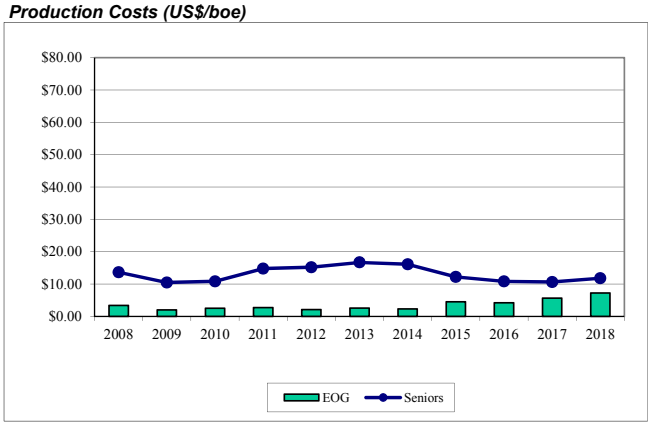
US$/boe, net

International

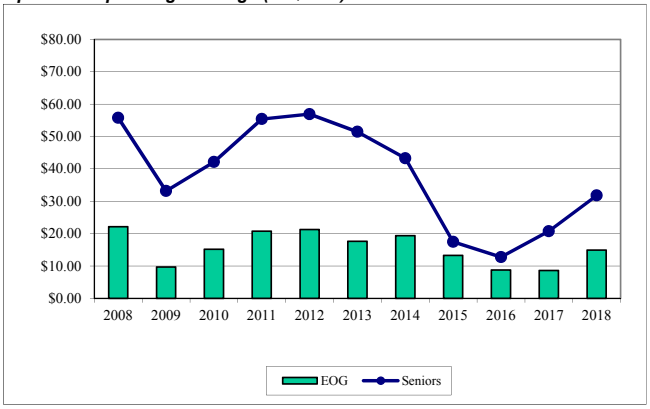
Upstream Net Revenue (US$/boe)



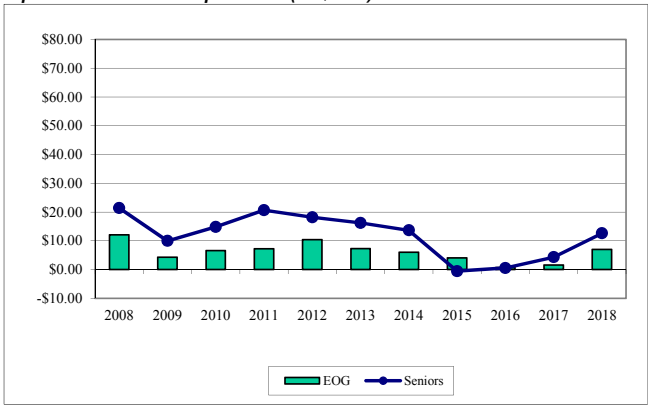
Production Costs (US$/boe)



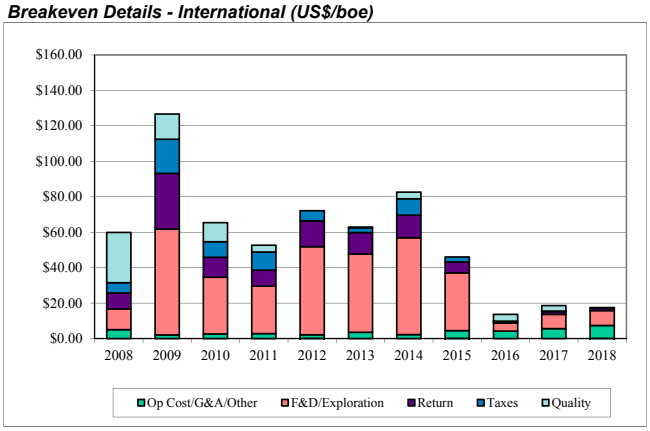
Upstream Operating Earnings (US$/boe)



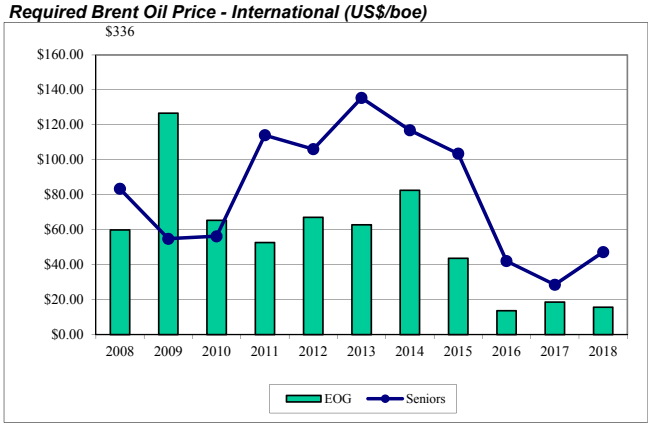
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	6,222	3,399	4,881	6,858	7,958	10,756	12,593	6,403	5,497	7,908	11,946
Midstream / Downstream Revenue	165	407	910	2,116	3,097	3,644	4,046	2,253	1,966	3,298	5,230
Other	741	980	309	1,152	628	88	1,396	101	188	2	
Total Revenue and Other Income	7,127	4,787	6,100	10,126	11,683	14,487	18,035	8,757	7,651	11,208	17,177
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	833	863	1,084	1,372	1,601	1,959	2,389	2,032	1,692	1,785	2,030
Marketing Expenses	193	455	951	2,153	3,133	3,757	4,272	2,532	2,131	3,479	5,640
Exploration / Dry Hole Costs	249	221	260	225	201	236	233	164	136	150	149
General and Administrative	244	248	280	305	332	348	402	367	395	434	427
Depreciation, Depletion and Amortization	1,327	1,549	1,942	2,516	3,170	3,601	3,997	3,314	3,553	3,409	3,435
Interest, net	52	101	130	210	214	235	201	237	282	274	245
Other	483	478	1,045	1,435	1,752	914	1,546	7,033	1,021	1,015	1,010
Earnings Before Income Tax	3,747	872	408	1,910	1,281	3,437	4,995	(6,922)	(1,558)	661	4,241
Current Income Taxes	176	151	171	319	418	365	375	(4,879)	54	(448)	-
Future Income Taxes	1,134	174	76	499	293	875	1,705	2,482	(515)	(1,474)	822
Total Income Taxes	1,310	325	247	819	710	1,240	2,080	(2,397)	(461)	(1,921)	822
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	2,437	547	161	1,091	570	2,197	2,915	(4,525)	(1,097)	2,583	3,419
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	2,437	547	161	1,091	570	2,197	2,915	(4,525)	(1,097)	2,583	3,419
Preferred Stock Dividends	0	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	2,436	547	161	1,091	570	2,197	2,915	(4,525)	(1,097)	2,583	3,419

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	2,437	547	161	1,091	570	2,197	2,915	(4,525)	(1,097)	2,583	3,419
Charges and Credits Not Impacting Cash	2,709	2,081	2,833	4,100	4,748	4,837	6,494	7,460	3,669	2,419	4,682
Other	(762)	355	(154)	(768)	201	193	(1,201)	1,805	43	228	(102)
Cash Flow From Operations	4,383	2,982	2,840	4,423	5,520	7,227	8,208	4,741	2,615	5,230	7,999
Change in Working Capital / Other	250	(60)	(131)	156	(283)	102	441	(1,145)	(256)	(965)	(230)
Net Cash From Operating Activities	4,633	2,922	2,709	4,578	5,237	7,329	8,649	3,595	2,359	4,265	7,769
Total Capital Expenditures	(5,195)	(3,503)	(5,581)	(6,951)	(7,355)	(7,061)	(8,247)	(5,013)	(2,583)	(4,124)	(6,076)
Acquisitions, net	384	212	463	1,433	1,310	761	569	193	1,174	227	227
Other	(155)	(124)	216	(237)	(74)	(15)	164	(500)	156	(90)	(321)
Net Cash From Investing Activities	(4,967)	(3,415)	(4,903)	(5,755)	(6,119)	(6,315)	(7,514)	(5,320)	(1,253)	(3,987)	(6,170)
Net Change in Debt	712	900	2,442	(220)	1,234	(400)	(4)	750	168	(607)	(358)
Net Change in Common Stock	(18)	(11)	(11)	1,388	-	-	-	-	-	-	-
Net Change in Preferred Stock	(5)	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(115)	(142)	(153)	(167)	(181)	(200)	(280)	(367)	(373)	(387)	(438)
Other	72	87	26	7	87	25	(44)	(12)	(37)	(43)	(43)
Net Cash From Financing Activities	645	834	2,303	1,009	1,140	(574)	(328)	371	(243)	(1,036)	(839)
Effect of Exchange Rate on Cash	(35)	12	(6)	(5)	3	1	(39)	(15)	18	(8)	(38)
Net Increase/(Decrease) in Cash	277	354	103	(173)	261	441	769	(1,369)	881	(766)	721
Cash and Equivalents, Beginning of Year	54	331	686	789	616	876	1,318	2,087	719	1,600	834
Cash and Equivalents, End of Year	331	686	789	616	876	1,318.21	2,087	719	1,600	834	1,556

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EOG Resources Inc. (EOG - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	2,108	1,840	2,527	3,254	3,590	4,072	5,416	2,592	3,555	3,279	5,057
Net Property, Plant and Equipment	13,657	16,139	18,681	21,289	23,338	26,149	29,173	24,211	25,707	25,665	28,076
Other Assets	185	140	416	296	409	353	174	172	198	889	802
Total Assets	15,951	18,119	21,624	24,839	27,337	30,574	34,763	26,975	29,459	29,833	33,934
Total Current Liabilities	1,765	1,346	2,220	2,522	2,924	2,862	3,384	1,819	2,027	2,726	3,728
Long-term Debt	1,860	2,760	5,003	5,009	5,906	5,907	5,903	6,654	6,980	6,031	5,170
Deferred Income Taxes	2,814	3,382	3,502	3,867	4,327	5,522	6,823	4,588	5,189	3,518	4,413
Other Liabilities and Deferred Credits	498	633	667	799	895	865	939	971	1,282	1,275	1,258
Total Liabilities	6,937	8,121	11,393	12,198	14,052	15,156	17,050	14,032	15,478	13,550	14,570
Minority Interests	-	-	-							-	-
Common Shares	202	203	203	203	203	203	205	206	206	206	206
Contributed Surplus (Paid-in Capital)	324	597	730	2,272	2,500	2,647	2,837	2,923	5,420	5,537	5,659
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	8,466	8,867	8,870	9,789	10,176	12,168	14,763	9,871	8,398	10,594	13,543
Other / Comprehensive Income (Loss)	22	332	429	377	406	401	(93)	(57)	(43)	(53)	(44)
Total Shareholders' Equity	9,014	9,998	10,232	12,641	13,285	15,418	17,713	12,943	13,982	16,283	19,364
Total Liabilities and Shareholders' Equity	15,951	18,119	21,624	24,839	27,337	30,574	34,763	26,975	29,459	29,833	33,934
Return on Capital Employed (ROCE)	**26.2%**	**5.4%**	**1.6%**	**7.6%**	**3.8%**	**12.2%**	**14.5%**	**-21.6%**	**-4.7%**	**17.7%**	**16.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	6,241	3,413	4,905	6,891	8,000	10,812	12,647	6,451	5,578	7,990	12,036	25,604	44,702
Production Costs	1,142	1,022	1,383	1,763	2,070	2,559	3,122	2,430	2,018	2,303	3,212	7,533	13,085
Exploration	249	221	260	225	201	236	233	164	136	150	154	440	837
DD&A	1,261	1,453	1,831	2,394	3,025	3,498	3,882	3,190	3,437	3,297	3,320	10,054	17,126
G&A/Other	193	306	725	1,031	1,271	287	348	367	395	434	429	1,259	1,973
Pre-tax Results Of Operations	3,396	411	706	1,479	1,434	4,232	5,063	299	-408	1,806	4,920	6,318	11,680
Income Taxes	1,214	158	351	638	723	1,491	1,821	102	-148	638	1,082	1,572	3,494
Results Of Operations	2,182	253	355	841	711	2,741	3,242	198	-259	1,167	3,838	4,747	8,186

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	5,797	3,156	4,426	6,307	7,411	10,274	12,116	6,010	5,259	7,652	11,578	24,490	42,617
Production Costs	1,089	982	1,321	1,699	2,018	2,501	3,069	2,325	1,918	2,184	3,072	7,173	12,567
Exploration	230	197	220	190	179	176	200	141	127	113	127	366	707
DD&A	1,226	1,399	1,745	2,270	2,860	3,302	3,676	3,017	3,250	3,157	3,182	9,589	16,282
G&A/Other	166	305	723	1,028	1,271	264	348	367	395	434	427	1,256	1,971
Pre-tax Results Of Operations	3,086	273	417	1,121	1,084	4,031	4,824	161	-429	1,764	4,771	6,106	11,090
Income Taxes	1,092	105	225	448	625	1,454	1,721	58	-153	629	1,068	1,544	3,322
Results Of Operations	1,994	167	192	673	458	2,577	3,103	103	-276	1,135	3,704	4,562	7,768

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	445	257	479	584	588	538	531	441	319	337	458	1,114	2,086
Production Costs	53	40	62	64	52	58	53	106	101	119	140	359	518
Exploration	20	23	40	35	22	60	33	24	9	37	28	73	130
DD&A	35	55	86	124	165	196	206	173	187	140	138	466	845
G&A/Other	26	1	2	3	0	23	0	0	0	0	2	2	2
Pre-tax Results Of Operations	310	138	289	358	350	201	239	139	22	42	149	213	590
Income Taxes	122	53	126	190	98	36	101	43	5	9	14	28	172
Results Of Operations	188	86	163	168	252	165	138	95	17	33	135	185	418

Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$50.71	$25.94	$34.08	$44.14	$46.77	$57.52	$57.72	$30.55	$26.94	$35.60	$45.52	$36.79	$39.69
Production Costs	$9.28	$7.77	$9.61	$11.29	$12.10	$13.61	$14.25	$11.51	$9.75	$10.26	$12.15	$10.82	$11.62
Exploration	$2.03	$1.68	$1.81	$1.44	$1.17	$1.26	$1.06	$0.78	$0.65	$0.67	$0.58	$0.63	$0.74
DD&A	$10.25	$11.05	$12.72	$15.33	$17.68	$18.61	$17.71	$15.11	$16.60	$14.69	$12.56	$14.45	$15.21
G&A/Other	$1.57	$2.32	$5.04	$6.60	$7.43	$1.53	$1.59	$1.74	$1.91	$1.94	$1.62	$1.81	$1.75
Pre-tax Results Of Operations	$27.59	$3.12	$4.90	$9.47	$8.38	$22.51	$23.10	$1.42	-$1.97	$8.05	$18.61	$9.08	$10.37
Income Taxes	$9.86	$1.20	$2.44	$4.09	$4.23	$7.93	$8.31	$0.48	-$0.72	$2.84	$4.09	$2.26	$3.10
Results Of Operations	$17.73	$1.92	$2.47	$5.39	$4.16	$14.58	$14.79	$0.94	-$1.25	$5.20	$14.52	$6.82	$7.27

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$53.92	$28.27	$37.12	$47.47	$50.48	$62.10	$61.77	$32.02	$28.71	$37.63	$47.24	$38.77	$41.97
Production Costs	$10.13	$8.79	$11.08	$12.79	$13.75	$15.12	$15.65	$12.39	$10.47	$10.74	$12.53	$11.36	$12.38
Exploration	$2.14	$1.77	$1.84	$1.43	$1.22	$1.07	$1.02	$0.75	$0.69	$0.56	$0.52	$0.58	$0.70
DD&A	$11.40	$12.53	$14.64	$17.08	$19.48	$19.96	$18.74	$16.08	$17.74	$15.53	$12.98	$15.18	$16.03
G&A/Other	$1.55	$2.73	$6.07	$7.74	$8.65	$1.59	$1.77	$1.95	$2.16	$2.14	$1.74	$1.99	$1.94
Pre-tax Results Of Operations	$28.71	$2.44	$3.50	$8.44	$7.38	$24.36	$24.59	$0.86	-$2.34	$8.67	$19.46	$9.67	$10.92
Income Taxes	$10.16	$0.94	$1.88	$3.37	$4.26	$8.79	$8.77	$0.31	-$0.84	$3.09	$4.36	$2.44	$3.27
Results Of Operations	$18.55	$1.50	$1.61	$5.06	$3.12	$15.57	$15.82	$0.55	-$1.51	$5.58	$15.11	$7.22	$7.65

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$28.53	$12.90	$19.40	$25.10	$24.28	$23.87	$23.11	$18.78	$13.34	$15.99	$23.73	$17.33	$18.84
Production Costs	$3.42	$2.02	$2.53	$2.73	$2.14	$2.58	$2.31	$4.51	$4.21	$5.64	$7.26	$5.59	$4.68
Exploration	$1.26	$1.18	$1.63	$1.52	$0.90	$2.65	$1.44	$1.00	$0.38	$1.73	$1.44	$1.14	$1.18
DD&A	$2.25	$2.74	$3.48	$5.33	$6.80	$8.68	$8.96	$7.37	$7.85	$6.63	$7.18	$7.25	$7.63
G&A/Other	$1.69	$0.03	$0.08	$0.13	$0.00	$1.03	$0.00	$0.00	$0.00	$0.00	$0.13	$0.04	$0.02
Pre-tax Results Of Operations	$19.90	$6.94	$11.69	$15.40	$14.45	$8.93	$10.39	$5.90	$0.91	$2.00	$7.72	$3.31	$5.33
Income Taxes	$7.82	$2.64	$5.11	$8.16	$4.03	$1.61	$4.38	$1.85	$0.20	$0.44	$0.73	$0.44	$1.55
Results Of Operations	$12.08	$4.30	$6.58	$7.24	$10.42	$7.31	$6.01	$4.05	$0.71	$1.56	$6.99	$2.87	$3.77

Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	1,653.4	1,689.9	1,735.3	1,632.3	1,524.9	1,376.4	1,387.1	1,303.3	1,212.6	1,141.4	1,258.9	1,204.3	1,260.7
Liquids Production (b/d)	61,633	78,756	105,107	155,732	214,479	285,630	369,164	361,356	365,175	424,647	514,608	434,810	406,990
Total Production (boe/d)	337,204	360,400	394,331	427,786	468,635	515,037	600,352	578,571	567,276	614,875	724,426	635,525	617,100
% Gas Production	82%	78%	73%	64%	54%	45%	39%	38%	36%	31%	29%	32%	34%
% Oil Production	18%	22%	27%	36%	46%	55%	61%	62%	64%	69%	71%	68%	66%
Proven Reserves:													
Gas Reserves (bcf)	7,339.2	8,898.1	8,470.2	7,850.9	4,739.5	5,044.8	5,342.6	3,825.9	3,317.9	4,263.1	4,687.2	4,089.4	4,287.3
Oil Reserves (mmbbls)	225.0	313.0	537.8	745.3	1,020.8	1,277.7	1,606.8	1,480.5	1,594.0	1,816.4	2,147.2	1,852.5	1,729.0
Total Proven Reserves (mmboe)	1,448.2	1,796.0	1,949.5	2,053.8	1,810.7	2,118.5	2,497.3	2,118.1	2,146.9	2,527.0	2,928.4	2,534.1	2,443.5
% Gas Reserves	84%	83%	72%	64%	44%	40%	36%	30%	26%	28%	27%	27%	29%
% Oil Reserves	16%	17%	28%	36%	56%	60%	64%	70%	74%	72%	73%	73%	71%
Proven Reserve Life Index	11.8	13.7	13.5	13.2	10.6	11.3	11.4	10.0	10.4	11.3	11.1	10.9	10.8
Proven Reserve Additions:													
Gas Additions (bcf)	1,273.6	2,175.7	205.5	-23.5	-2,554.8	807.7	804.1	-1,041.0	-65.4	1,361.8	883.6	2,180.0	1,943.1
Oil Additions (mmbbls)	68.2	116.7	263.2	264.3	353.8	361.2	463.8	5.5	246.8	377.5	518.6	1,142.9	1,612.2
Total Additions (mmboe)	280.5	479.3	297.4	260.4	-72.0	495.8	597.8	-168.0	235.9	604.5	665.9	1,506.2	1,936.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	309.6	558.5	396.0	387.3	406.9	399.0	519.2	245.9	209.0	420.8	669.8	1,299.6	2,064.7
Acquisitions	9.9	96.6	0.0	0.5	4.1	3.2	14.4	56.2	42.3	2.3	11.6	56.3	126.9
Dispositions	(33.9)	(28.9)	(60.1)	(68.2)	(90.4)	(15.4)	(36.3)	(3.5)	(167.7)	(20.7)	(10.8)	(199.2)	(238.9)
Revisions of Estimates	(5.3)	(146.9)	(38.4)	(59.2)	(392.6)	109.0	100.6	(466.6)	152.2	202.0	(4.7)	349.5	(16.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	110.4%	116.5%	133.1%	148.7%	-565.1%	80.5%	86.8%	-146.4%	88.6%	69.6%	100.6%	86.3%	106.6%
Acquisitions	3.5%	20.2%	0.0%	0.2%	-5.7%	0.7%	2.4%	-33.5%	17.9%	0.4%	1.7%	3.7%	6.6%
Dispositions	-12.1%	-6.0%	-20.2%	-26.2%	125.6%	-3.1%	-6.1%	2.1%	-71.1%	-3.4%	-1.6%	-13.2%	-12.3%
Revisions of Estimates	-1.9%	-30.6%	-12.9%	-22.7%	545.2%	22.0%	16.8%	277.8%	64.5%	33.4%	-0.7%	23.2%	-0.9%
Additions as % of Production:													
Gas	211.0%	352.7%	32.4%	-3.9%	-459.0%	160.8%	158.8%	-218.8%	-14.8%	326.9%	192.3%	165.3%	84.5%
Oil	303.1%	406.0%	686.0%	465.0%	451.9%	346.5%	344.2%	4.2%	185.1%	243.5%	276.1%	240.0%	217.1%
Total	227.9%	364.4%	206.7%	166.8%	-42.1%	263.8%	272.8%	-79.5%	113.9%	269.3%	251.8%	216.4%	171.9%
Additions as % of Reserves:													
Gas	17.4%	24.5%	2.4%	-0.3%	-53.9%	16.0%	15.1%	-27.2%	-2.0%	31.9%	18.9%	53.3%	45.3%
Oil	30.3%	37.3%	48.9%	35.5%	34.7%	28.3%	28.9%	0.4%	15.5%	20.8%	24.2%	61.7%	93.2%
Total	19.4%	26.7%	15.3%	12.7%	-4.0%	23.4%	23.9%	-7.9%	11.0%	23.9%	22.7%	59.4%	79.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$675.0	$610.8	$603.2	$363.6	$445.6	$377.2	$396.0	$252.7	$165.8	$223.6	$193.6	$583.0	$1,231.6
Development	$3,612.7	$2,165.8	$4,438.0	$5,930.6	$6,116.6	$6,086.4	$6,999.3	$4,061.1	$2,313.9	$3,716.7	$5,615.0	$11,645.6	$22,706.0
Acquisitions	$629.7	$1,131.0	$417.4	$305.0	$506.0	$534.3	$509.5	$614.5	$3,965.7	$499.1	$611.0	$5,075.8	$6,199.8
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$4,917.3	$3,907.5	$5,458.5	$6,599.2	$7,068.2	$6,997.9	$7,904.8	$4,928.3	$6,445.3	$4,439.4	$6,419.7	$17,304.4	$30,137.4
Expenditures as % of Total:													
Exploration	13.7%	15.6%	11.0%	5.5%	6.3%	5.4%	5.0%	5.1%	2.6%	5.0%	3.0%	3.4%	4.1%
Development	73.5%	55.4%	81.3%	89.9%	86.5%	87.0%	88.5%	82.4%	35.9%	83.7%	87.5%	67.3%	75.3%
Acquisitions	12.8%	28.9%	7.6%	4.6%	7.2%	7.6%	6.4%	12.5%	61.5%	11.2%	9.5%	29.3%	20.6%
Cashflow (US$million)	$4,383.2	$2,982.3	$2,839.7	$4,422.7	$5,519.5	$7,227.1	$8,208.5	$4,740.6	$2,615.4	$5,230.2	$7,998.7	$15,844.4	$28,793.4
Cashflow (US$/boe)	$35.61	$22.67	$19.73	$28.33	$32.27	$38.44	$37.46	$22.45	$12.63	$23.30	$30.25	$22.77	$25.57
Recycle Ratio	2.3x	2.9x	1.3x	1.4x	0.1x	2.8x	3.0x	-0.7x	0.8x	3.3x	3.2x	2.2x	1.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$14.09	$6.74	$14.10	$19.18	$458.23	$12.72	$11.93	-$19.55	$6.86	$6.33	$8.73	$7.42	$11.69
Acquisition Costs	$63.30	$11.71	nm	nm	nm	nm	nm	nm	nm	nm	nm	$90.17	$48.86
All Sources (incl. revisions)	$15.64	$7.69	$15.26	$20.08	$383.95	$13.69	$12.47	-$29.97	$15.97	$7.10	$9.49	$10.15	$13.86
Exploration & Development (excl. revisions)	$13.85	$4.97	$12.73	$16.25	$16.13	$16.20	$14.24	$17.54	$11.86	$9.36	$8.67	$9.41	$11.59
Acquisition Costs	$63.30	$11.71	nm	nm	nm	nm	nm	nm	nm	nm	nm	$90.17	$48.86
All Sources (excl. revisions)	$15.39	$5.96	$13.78	$17.02	$17.20	$17.40	$14.82	$16.31	$25.64	$10.49	$9.42	$12.76	$13.75
Geographically Segmented Costs													
North America	$15.86	$7.19	$14.53	$19.93	$516.24	$13.09	$12.04	$15.68	$26.42	$10.92	$9.36	$15.56	$14.88
Trinidad	$8.41	-$2.21	-$42.32	$16.77	-$13.47	$14.99	$30.79	$19.38	$5.00	$7.02	$3.34	$5.12	$13.11
Total International	$10.39	-$6.19	-$152.06	$25.22	$48.77	$41.46	$102.73	$31.51	$4.24	$6.36	$7.00	$5.87	$30.37

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EOG Resources Inc. (EOG - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	9.28	7.77	9.61	11.29	12.10	13.61	14.25	11.51	9.75	10.26	12.15	10.82	11.62
Exploration Expense	2.03	1.68	1.81	1.44	1.17	1.26	1.06	0.78	0.65	0.67	0.58	0.63	0.74
G&A/Other	1.57	2.32	5.04	6.60	7.43	1.53	1.59	1.74	1.91	1.94	1.62	1.81	1.75
F&D Costs	15.64	7.69	15.26	20.08	17.20	13.69	12.47	16.31	15.97	7.10	9.49	10.15	12.27
Return on Capital	11.65	6.71	13.22	17.09	11.45	9.74	8.98	10.30	10.41	5.01	6.68	6.97	8.32
Income Taxes	6.48	4.19	13.07	12.96	11.65	5.30	5.05	5.29	5.96	2.74	1.88	2.31	3.55
Breakeven Oil Price	46.64	30.36	58.01	69.47	61.00	45.13	43.40	45.93	44.66	27.71	32.41	32.69	38.25
Quality Differential	10.87	7.28	6.66	11.62	13.56	12.76	13.25	8.82	7.56	7.85	10.62	8.68	9.62
Required Brent Price	57.52	37.64	64.68	81.09	74.56	57.89	56.64	54.75	52.22	35.56	43.02	41.36	47.87

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	10.13	8.79	11.08	12.79	13.75	15.12	15.65	12.39	10.47	10.74	12.53	11.36	12.38
Exploration Expense	2.14	1.77	1.84	1.43	1.22	1.07	1.02	0.75	0.69	0.56	0.52	0.58	0.70
G&A/Other	1.55	2.73	6.07	7.74	8.65	1.59	1.77	1.95	2.16	2.14	1.74	1.99	1.94
F&D Costs	15.86	7.19	14.53	19.93	26.60	13.09	12.04	15.68	26.42	10.92	9.36	15.56	14.88
Return on Capital	11.54	6.74	14.26	18.60	19.47	10.13	9.42	10.80	19.04	8.38	6.96	11.57	11.02
Income Taxes	6.32	4.24	16.65	12.39	26.56	5.72	5.22	6.13	10.56	4.65	2.01	3.92	4.71
Breakeven Oil Price	47.54	31.47	64.44	72.87	96.25	46.72	45.12	47.70	69.34	37.38	33.12	44.98	45.63
Quality Differential	8.36	6.03	5.82	12.99	16.62	14.45	14.37	10.22	8.04	8.35	11.60	9.33	10.51
Required Brent Price	55.89	37.50	70.25	85.86	112.87	61.17	59.49	57.92	77.38	45.73	44.72	54.31	56.15

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	3.42	2.02	2.53	2.73	2.14	2.58	2.31	4.51	4.21	5.64	7.26	5.59	4.68
Exploration Expense	1.26	1.18	1.63	1.52	0.90	2.65	1.44	1.00	0.38	1.73	1.44	1.14	1.18
G&A/Other	1.69	0.03	0.08	0.13	-	1.03	-	-	-	-	0.13	0.04	0.02
F&D Costs	10.39	58.57	30.36	25.22	48.77	41.46	53.18	31.51	4.24	6.36	7.00	5.80	20.46
Return on Capital	9.00	31.35	11.30	9.07	14.66	12.10	12.71	6.19	0.77	1.44	1.33	1.15	4.18
Income Taxes	5.83	19.27	8.77	10.22	5.66	2.67	9.25	2.82	0.21	0.40	0.38	0.17	1.72
Breakeven Oil Price	31.60	112.42	54.65	48.89	72.13	62.49	78.89	46.03	9.80	15.58	17.55	13.90	32.23
Quality Differential	28.25	14.26	10.75	3.78	(5.01)	0.36	3.69	(2.34)	3.92	3.03	(1.87)	1.69	1.28
Required Brent Price	59.84	126.67	65.40	52.67	67.12	62.86	82.58	43.69	13.73	18.60	15.67	15.59	33.51

Source: BMO Capital Markets, Company Reports

EOG Resources Inc. (EOG - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.32	13.91	18.03	20.75	21.21	20.64	19.58	15.29	13.04	13.07	15.18	13.88	15.20
Exploration Expense	3.13	3.01	3.39	2.65	2.05	1.90	1.46	1.03	0.88	0.85	0.73	0.81	0.97
G&A/Other	2.42	4.16	9.45	12.14	13.02	2.31	2.18	2.31	2.55	2.47	2.03	2.32	2.29
F&D Costs (1-Year)	23.58	13.37	18.28	22.54	23.30	17.52	15.09	19.12	19.99	9.63	11.21	12.76	15.01
Return on Capital	17.24	11.16	16.08	19.12	18.21	13.19	11.18	12.85	14.25	7.03	7.97	9.20	10.73
Income Taxes	9.59	6.97	15.89	14.50	18.52	7.17	6.28	6.60	8.16	3.84	2.25	3.05	4.58
Breakeven Oil Price	**70.28**	**52.57**	**81.11**	**91.70**	**96.30**	**62.74**	**55.77**	**57.21**	**58.86**	**36.89**	**39.37**	**42.02**	**48.79**
Quality Differential	16.78	13.02	12.50	21.36	23.76	19.35	18.20	11.72	10.12	10.00	13.27	11.13	12.66
Required Brent Price	**87.06**	**65.59**	**93.61**	**113.05**	**120.06**	**82.08**	**73.97**	**68.94**	**68.98**	**46.89**	**52.64**	**53.15**	**61.45**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.32	13.91	18.03	20.75	21.21	20.64	19.58	15.29	13.04	13.07	15.18	13.88	15.20
Exploration Expense	3.13	3.01	3.39	2.65	2.05	1.90	1.46	1.03	0.88	0.85	0.73	0.81	0.97
G&A/Other	2.42	4.16	9.45	12.14	13.02	2.31	2.18	2.31	2.55	2.47	2.03	2.32	2.29
F&D Costs (1-Year)	28.56	75.37	35.95	37.40	37.16	25.14	22.09	34.19	22.53	11.86	16.45	16.47	21.42
Return on Capital	20.87	62.79	31.61	31.40	28.48	18.96	16.39	22.99	16.15	8.59	11.74	11.86	15.24
Income Taxes	11.61	39.20	31.24	23.81	28.97	10.31	9.21	11.81	9.25	4.70	3.31	3.93	6.51
Breakeven Oil Price	**80.90**	**198.43**	**129.67**	**128.15**	**130.89**	**79.27**	**70.91**	**87.63**	**64.40**	**41.53**	**49.43**	**49.27**	**61.64**
Quality Differential	16.78	13.02	12.50	21.36	23.76	19.35	18.20	11.72	10.12	10.00	13.27	11.13	12.66
Required Brent Price	**97.67**	**211.46**	**142.17**	**149.51**	**154.65**	**98.61**	**89.11**	**99.35**	**74.52**	**51.53**	**62.70**	**60.40**	**74.30**

Source: BMO Capital Markets, Company Reports

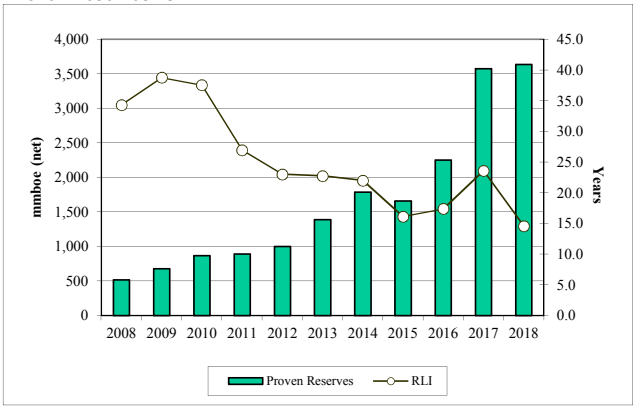
See pages F1 to F4 for analyst coverage.

EQT Corporation (EQT - NYSE) US$, net

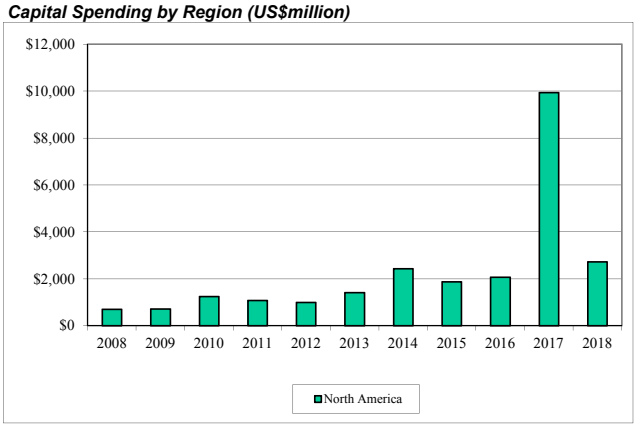
- EQT reported results of operations of $3.48/boe in 2018 versus $1.21/boe in 2017.
- The company's one-year F&D costs were lower at $4.52/boe compared to $6.74/boe last year. On a realized oil:gas price ratio basis, F&D costs were $9.45/boe versus $11.59/boe, while costs for PD reserves decreased to $13.29/boe from $18.69/boe.
- The company's 2018 costs imply a required Brent breakeven oil price of $41.72/boe on a realized ratio basis, while its PD costs imply a Brent breakeven oil price of $50.24/boe.
- The company reported a loss on capital employed of 11.3% in 2018 (normalized to a gain of 2.1%) versus a normalized 2017 ROCE of 4.3%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

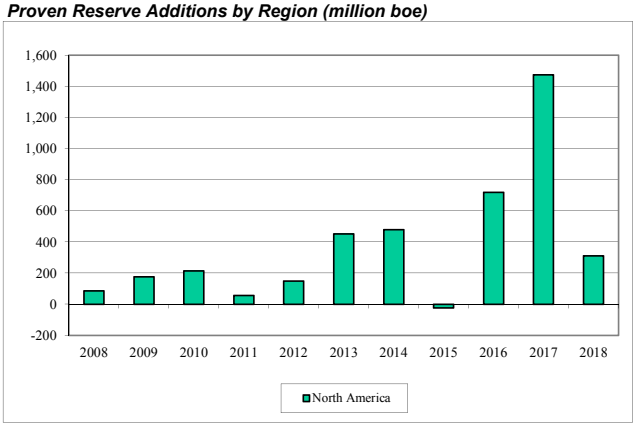
Proven Reserves vs RLI



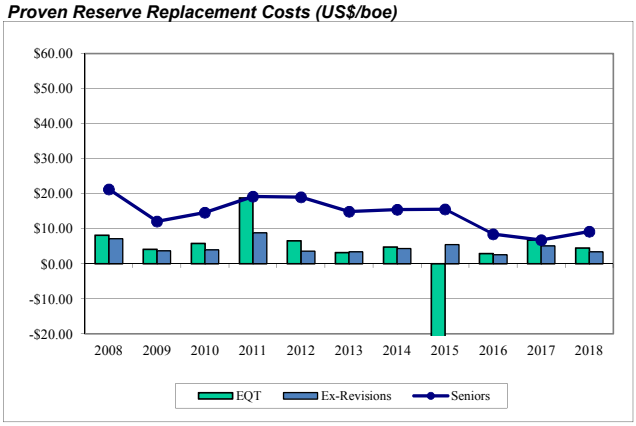
Capital Spending by Region (US$million)



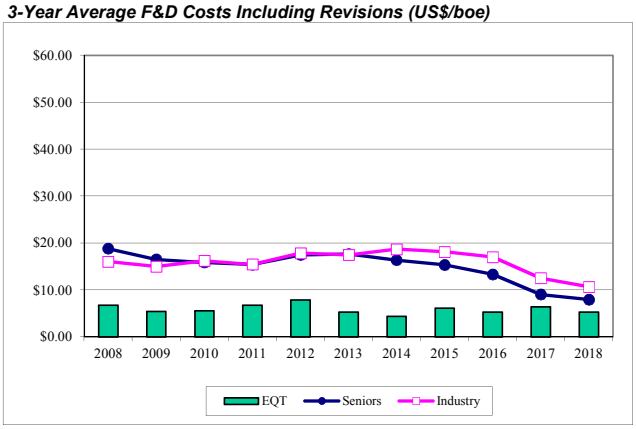
Proven Reserve Additions by Region (million boe)



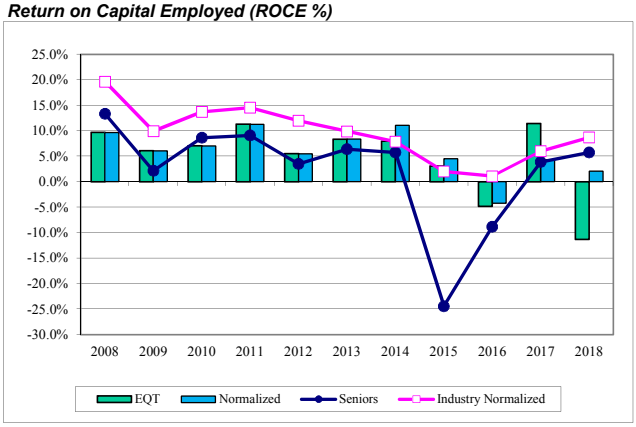
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

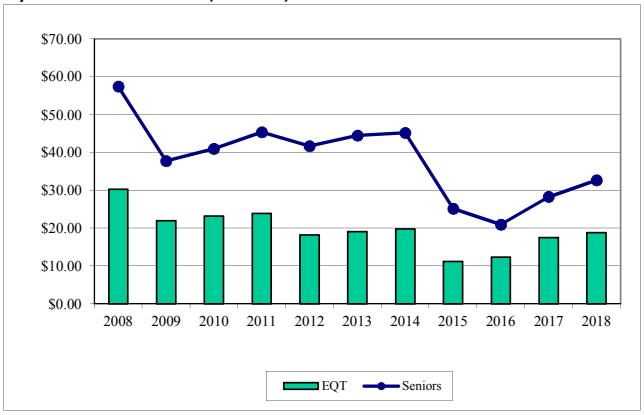
See pages F1 to F4 for analyst coverage.

EQT Corporation (EQT - NYSE)

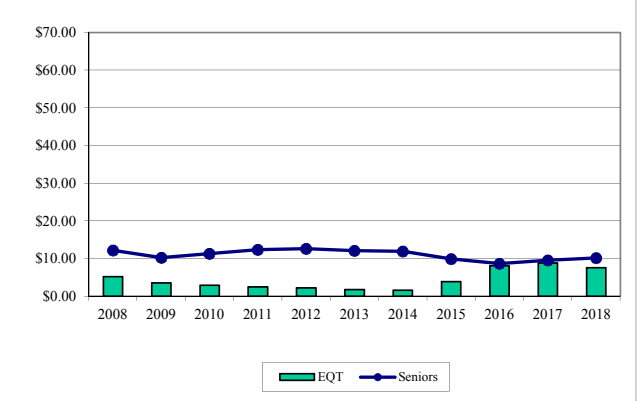
US$/boe, net

North America

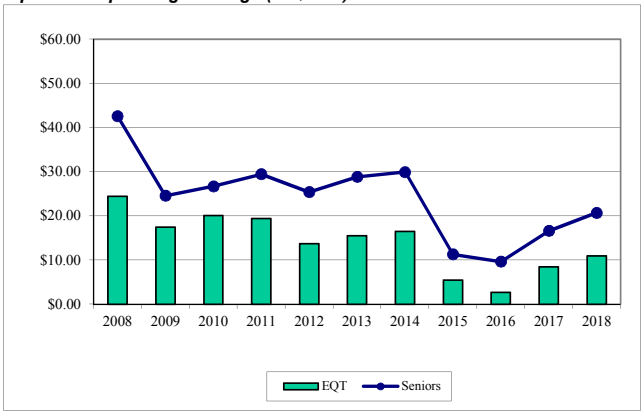
Upstream Net Revenue (US$/boe)



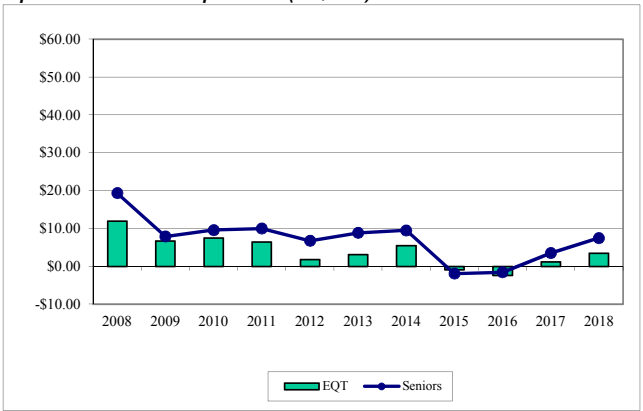
Production Costs (US$/boe)



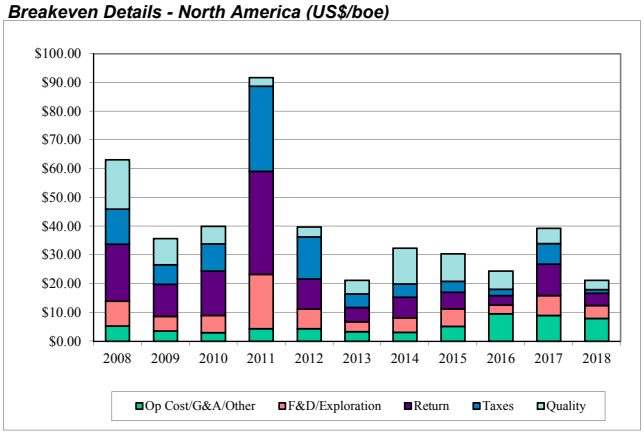
Upstream Operating Earnings (US$/boe)



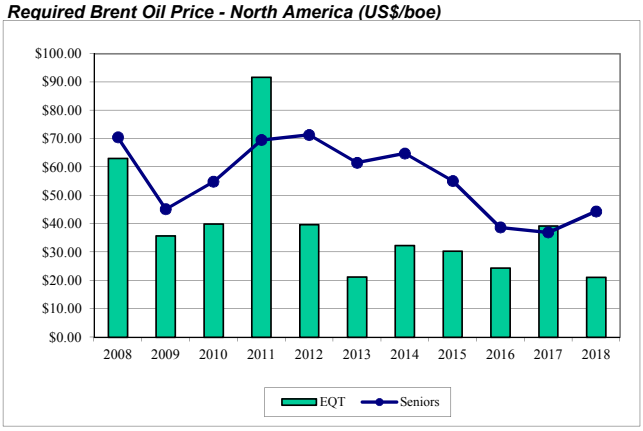
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

EQT Corporation (EQT - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	457	385	538	791	794	1,169	1,613	1,541	1,595	2,651	4,696
Midstream / Downstream Revenue	1,119	885	785	849	848	693	857	799	262	337	41
Other	-	-	-	-	-	-	-	-	(249)	390	(179)
Total Revenue and Other Income	1,576	1,270	1,323	1,640	1,642	1,862	2,470	2,340	1,608	3,378	4,558
Crude Oil and Product Purchases	645	319	201	256	228	149	202	275	366	560	-
Production and Transportation Expenses	210	203	220	209	238	206	242	248	248	272	196
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	1,697
Exploration / Dry Hole Costs	9	18	5	5	10	18	22	62	13	25	7
General and Administrative	111	177	156	172	195	201	238	250	273	263	284
Depreciation, Depletion and Amortization	137	196	270	339	499	653	679	819	928	1,078	1,569
Interest, net	58	112	128	136	185	143	137	147	148	203	229
Other	(4)	(9)	(13)	(237)	(16)	(29)	226	113	27	236	3,654
Earnings Before Income Tax	411	254	355	759	302	521	724	427	(395)	743	(3,077)
Current Income Taxes	(91)	(138)	(26)	45	10	65	182	87	(83)	(65)	(186)
Future Income Taxes	246	235	154	234	95	110	32	18	(180)	(1,051)	(510)
Total Income Taxes	155	97	128	279	105	175	214	105	(263)	(1,116)	(697)
Minority Interest	-	-	-	-	(13)	(47)	(124)	(237)	(322)	(350)	(237)
Earnings From Continuing Operations	256	157	228	480	183	299	386	85	(453)	1,509	(2,618)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	92	1	-	-	-	374
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	256	157	228	480	183	391	387	85	(453)	1,509	(2,245)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	256	157	228	480	183	391	387	85	(453)	1,509	(2,245)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	256	157	228	480	183	391	387	85	(453)	1,509	(2,245)
Charges and Credits Not Impacting Cash	383	431	424	573	594	763	711	837	748	27	1,059
Other	7	9	10	(215)	54	(77)	333	252	944	113	4,282
Cash Flow From Operations	645	597	662	838	832	1,077	1,431	1,174	1,239	1,648	3,096
Change in Working Capital / Other	(136)	129	127	78	(11)	86	(16)	43	(174)	(11)	(119)
Net Cash From Operating Activities	509	726	790	915	821	1,163	1,415	1,217	1,064	1,638	2,976
Total Capital Expenditures	(1,344)	(970)	(1,247)	(1,274)	(1,399)	(1,801)	(2,277)	(2,434)	(1,539)	(1,939)	(3,698)
Acquisitions, net	-	-	12	650	5	764	(167)	-	(976)	(2,379)	549
Other	(32)	(15)	(4)	-	-	38	-	(92)	(446)	191	(831)
Net Cash From Investing Activities	(1,376)	(986)	(1,239)	(624)	(1,395)	(1,000)	(2,444)	(2,526)	(2,961)	(4,127)	(3,979)
Net Change in Debt	334	381	49	(54)	(219)	(23)	489	130	196	1,855	2,135
Net Change in Common Stock	561	-	537	-	277	529	870	1,853	1,443	7	(539)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(111)	(115)	(127)	(132)	(132)	(18)	(18)	(18)	(20)	(21)	(31)
Other	2	(6)	(9)	726	(1)	12	(79)	(132)	(219)	(308)	(705)
Net Cash From Financing Activities	785	260	450	540	(76)	501	1,261	1,832	1,399	1,533	859
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(82)	-	-	831	(649)	664	232	524	(498)	(956)	(144)
Cash and Equivalents, Beginning of Year	82	0	0	0	831	182	846	1,077	1,601	1,104	147
Cash and Equivalents, End of Year	0	0	0	831	182	846	1,077	1,601	1,104	147	3

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EQT Corporation (EQT - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	927	695	828	1,690	853	1,255	1,904	2,251	1,828	1,163	1,970
Net Property, Plant and Equipment	4,098	4,915	5,910	6,806	7,715	8,334	10,077	11,472	13,162	24,885	17,393
Other Assets	305	347	360	276	282	203	84	253	482	3,475	1,359
Total Assets	5,330	5,957	7,098	8,773	8,850	9,792	12,065	13,976	15,473	29,523	20,721
Total Current Liabilities	1,043	613	597	805	570	523	833	796	805	1,232	2,355
Long-term Debt	1,249	1,949	1,943	2,528	2,503	2,490	2,823	2,793	3,289	7,324	4,793
Deferred Income Taxes	782	1,039	1,275	1,619	1,666	1,656	1,751	1,972	1,760	1,769	1,823
Other Liabilities and Deferred Credits	206	205	205	227	222	258	285	387	500	783	792
Total Liabilities	3,280	3,806	4,020	5,179	4,961	4,928	5,692	5,948	6,354	11,108	9,763
Minority Interests	-	-	-	-	285	829	1,790	2,950	3,259	5,095	-
Common Shares	948	952	1,724	1,735	1,771	1,870	1,896	2,153	3,440	9,389	7,829
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	1,654	1,695	1,796	2,144	2,196	2,568	2,917	2,982	2,509	3,997	3,184
Other / Comprehensive Income (Loss)	(552)	(497)	(441)	(285)	(362)	(403)	(230)	(58)	(89)	(66)	(55)
Total Shareholders' Equity	2,050	2,151	3,079	3,594	3,604	4,035	4,583	5,078	5,860	13,320	10,958
Total Liabilities and Shareholders' Equity	5,330	5,957	7,098	8,773	8,850	9,792	12,065	13,976	15,473	29,523	20,721
Return on Capital Employed (ROCE)	**9.7%**	**6.1%**	**7.0%**	**11.3%**	**5.5%**	**8.4%**	**8.0%**	**3.1%**	**-4.8%**	**11.4%**	**-11.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	457	385	538	791	794	1,169	1,612.73	1,155.83	1,595.00	2,651.32	4,695.52	7,347	10,098
Production Costs	79	61	67	81	96	108	133.49	398.04	1,055.02	1,338.07	1,892.78	3,231	4,684
Exploration	9	18	5	5	10	18	21.67	61.97	13.41	25.12	6.77	32	107
DD&A	78	117	184	257	410	579	592.86	723.45	859.02	982.10	1,610.41	2,593	4,175
G&A/Other	0	0	0	61	90	92	118.82	134.29	180.43	5.54	65.35	71	386
Pre-tax Results Of Operations	291	188	281	387	188	371	745.91	-161.92	-512.87	300.49	1,120.22	1,421	746
Income Taxes	111	71	107	175	110	183	297.24	-65.04	-206.01	117.98	253.54	372	100
Results Of Operations	180	116	174	212	78	188	448.66	-96.88	-306.87	182.51	866.69	1,049	645

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	457	385	538	791	794	1,169	1,612.73	1,155.83	1,595.00	2,651.32	4,695.52	7,347	10,098
Production Costs	79	61	67	81	96	108	133.49	398.04	1,055.02	1,338.07	1,892.78	3,231	4,684
Exploration	9	18	5	5	10	18	21.67	61.97	13.41	25.12	6.77	32	107
DD&A	78	117	184	257	410	579	592.86	723.45	859.02	982.10	1,610.41	2,593	4,175
G&A/Other	0	0	0	61	90	92	118.82	134.29	180.43	5.54	65.35	71	386
Pre-tax Results Of Operations	291	188	281	387	188	371	745.91	-161.92	-512.87	300.49	1,120.22	1,421	746
Income Taxes	111	71	107	175	110	183	297.24	-65.04	-206.01	117.98	253.54	372	100
Results Of Operations	180	116	174	212	78	188	448.66	-96.88	-306.87	182.51	866.69	1,049	645

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

EQT Corporation (EQT - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$30.28	$21.99	$23.20	$23.88	$18.25	$19.10	$19.83	$11.21	$12.33	$17.52	$18.85	$16.88	$16.39
Production Costs	$5.22	$3.51	$2.91	$2.44	$2.21	$1.77	$1.64	$3.86	$8.15	$8.84	$7.60	$8.09	$6.74
Exploration	$0.60	$1.02	$0.23	$0.15	$0.24	$0.30	$0.27	$0.60	$0.10	$0.17	$0.03	$0.09	$0.18
DD&A	$5.18	$6.71	$7.93	$7.76	$9.42	$9.46	$7.29	$7.02	$6.64	$6.49	$6.46	$6.51	$6.68
G&A/Other	$0.00	$0.00	$0.00	$1.85	$2.06	$1.51	$1.46	$1.30	$1.39	$0.04	$0.26	$0.47	$0.71
Pre-tax Results Of Operations	$19.27	$10.74	$12.14	$11.68	$4.32	$6.07	$9.17	-$1.57	-$3.96	$1.99	$4.50	$1.71	$2.09
Income Taxes	$7.32	$4.08	$4.61	$5.28	$2.52	$2.99	$3.65	-$0.63	-$1.59	$0.78	$1.02	$0.31	$0.56
Results Of Operations	$11.95	$6.66	$7.52	$6.41	$1.80	$3.08	$5.52	-$0.94	-$2.37	$1.21	$3.48	$1.40	$1.53

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$30.28	$21.99	$23.20	$23.88	$18.25	$19.10	$19.83	$11.21	$12.33	$17.52	$18.85	$16.88	$16.39
Production Costs	$5.22	$3.51	$2.91	$2.44	$2.21	$1.77	$1.64	$3.86	$8.15	$8.84	$7.60	$8.09	$6.74
Exploration	$0.60	$1.02	$0.23	$0.15	$0.24	$0.30	$0.27	$0.60	$0.10	$0.17	$0.03	$0.09	$0.18
DD&A	$5.18	$6.71	$7.93	$7.76	$9.42	$9.46	$7.29	$7.02	$6.64	$6.49	$6.46	$6.51	$6.68
G&A/Other	$0.00	$0.00	$0.00	$1.85	$2.06	$1.51	$1.46	$1.30	$1.39	$0.04	$0.26	$0.47	$0.71
Pre-tax Results Of Operations	$19.27	$10.74	$12.14	$11.68	$4.32	$6.07	$9.17	-$1.57	-$3.96	$1.99	$4.50	$1.71	$2.09
Income Taxes	$7.32	$4.08	$4.61	$5.28	$2.52	$2.99	$3.65	-$0.63	-$1.59	$0.78	$1.02	$0.31	$0.56
Results Of Operations	$11.95	$6.66	$7.52	$6.41	$1.80	$3.08	$5.52	-$0.94	-$2.37	$1.21	$3.48	$1.40	$1.53

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

EQT Corporation (EQT - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	246.5	285.8	378.9	541.3	710.6	1,001.4	1,218.6	1,539.7	1,920.5	2,177.2	3,816.3	2,638.0	2,134.4
Liquids Production (b/d)	285	271	329	570	734	740	19,764	25,890	34,427	51,696	46,449	44,191	35,645
Total Production (boe/d)	41,363	47,912	63,481	90,784	119,170	167,632	222,868	282,505	354,504	414,562	682,496	483,854	391,387
% Gas Production	99%	99%	99%	99%	99%	100%	91%	91%	90%	88%	93%	91%	91%
% Oil Production	1%	1%	1%	1%	1%	0%	9%	9%	10%	12%	7%	9%	9%
Proven Reserves:													
Gas Reserves (bcf)	3,097.3	4,056.1	5,205.7	5,347.4	5,985.8	7,561.6	9,776.0	9,110.3	12,331.9	19,830.2	20,805.5	17,655.9	14,370.8
Oil Reserves (mmbbls)	2.1	2.0	2.3	2.9	3.2	131.1	160.5	144.4	196.1	269.2	168.6	211.3	187.7
Total Proven Reserves (mmboe)	518.3	678.0	869.9	894.2	1,000.8	1,391.4	1,789.8	1,662.8	2,251.4	3,574.3	3,636.1	3,153.9	2,582.9
% Gas Reserves	100%	100%	100%	100%	100%	91%	91%	91%	91%	92%	95%	93%	93%
% Oil Reserves	0%	0%	0%	0%	0%	9%	9%	9%	9%	8%	5%	7%	7%
Proven Reserve Life Index	34.3	38.8	37.5	27.0	23.0	22.7	22.0	16.1	17.4	23.6	14.6	18.5	18.7
Proven Reserve Additions:													
Gas Additions (bcf)	517.4	1,063.1	1,287.9	339.3	897.7	1,941.3	2,659.2	-103.7	3,922.5	8,293.0	2,368.2	14,583.7	17,139.3
Oil Additions (mmbbls)	0.1	0.0	0.4	0.8	0.5	128.2	36.6	-6.7	64.3	92.0	-83.7	72.6	102.5
Total Additions (mmboe)	86.4	177.2	215.1	57.4	150.2	451.7	479.8	-23.9	718.0	1,474.2	311.0	2,503.2	2,959.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	97.5	193.1	315.6	115.7	276.0	341.1	546.0	341.8	397.4	370.9	789.9	1,558.2	2,446.0
Acquisitions	0.0	0.0	0.4	6.6	0.0	78.8	17.1	0.0	399.3	1,564.9	0.0	1,964.2	1,981.4
Dispositions	(0.2)	(0.1)	(0.3)	(0.2)	(0.1)	(0.1)	(33.1)	(0.0)	-	(0.4)	(291.4)	(291.9)	(325.0)
Revisions of Estimates	(10.9)	(15.8)	(100.6)	(64.7)	(125.7)	31.9	(50.2)	(365.8)	(78.7)	(461.2)	(187.5)	(727.4)	(1,143.4)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	112.9%	109.0%	146.7%	201.6%	183.8%	75.5%	113.8%	-1427.7%	55.4%	25.2%	254.0%	62.2%	82.7%
Acquisitions	0.0%	0.0%	0.2%	11.5%	0.0%	17.4%	3.6%	0.0%	55.6%	106.2%	0.0%	78.5%	67.0%
Dispositions	-0.2%	-0.1%	-0.1%	-0.4%	-0.1%	0.0%	-6.9%	0.0%	0.0%	0.0%	-93.7%	-11.7%	-11.0%
Revisions of Estimates	-12.6%	-8.9%	-46.8%	-112.8%	-83.7%	7.1%	-10.5%	1527.6%	-11.0%	-31.3%	-60.3%	-29.1%	-38.6%
Additions as % of Production:													
Gas	575.1%	1019.0%	931.2%	171.7%	346.1%	531.1%	597.8%	-18.4%	559.6%	1043.6%	170.0%	504.9%	440.0%
Oil	132.7%	-10.1%	342.5%	400.0%	198.9%	nm	507.3%	-70.6%	511.5%	487.7%	-493.9%	150.0%	157.5%
Total	572.0%	1013.1%	928.2%	173.2%	345.2%	738.3%	589.8%	-23.2%	554.9%	974.3%	124.8%	472.5%	414.3%
Additions as % of Reserves:													
Gas	16.7%	26.2%	24.7%	6.3%	15.0%	25.7%	27.2%	-1.1%	31.8%	41.8%	11.4%	82.6%	119.3%
Oil	6.5%	-0.5%	17.8%	28.4%	16.7%	97.8%	22.8%	-4.6%	32.8%	34.2%	-49.7%	34.3%	54.6%
Total	16.7%	26.1%	24.7%	6.4%	15.0%	32.5%	26.8%	-1.4%	31.9%	41.2%	8.6%	79.4%	114.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$16.0	$14.9	$5.1	$2.3	$4.8	$4.3	$16.0	$53.5	$6.0	$15.5	$1.7	$23.3	$92.7
Development	$599.3	$676.1	$881.3	$928.3	$850.9	$1,230.3	$1,697.5	$1,633.5	$777.8	$1,365.6	$2,444.0	$4,587.4	$7,918.4
Acquisitions	$85.2	$31.0	$357.7	$149.8	$134.6	$186.3	$724.4	$182.3	$1,283.9	$8,562.7	$276.0	$10,122.5	$11,029.2
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$700.4	$722.0	$1,244.2	$1,080.4	$990.3	$1,420.8	$2,437.9	$1,869.3	$2,067.7	$9,943.8	$2,721.6	$14,733.2	$19,040.3
Expenditures as % of Total:													
Exploration	2.3%	2.1%	0.4%	0.2%	0.5%	0.3%	0.7%	2.9%	0.3%	0.2%	0.1%	0.2%	0.5%
Development	85.6%	93.6%	70.8%	85.9%	85.9%	86.6%	69.6%	87.4%	37.6%	13.7%	89.8%	31.1%	41.6%
Acquisitions	12.2%	4.3%	28.8%	13.9%	13.6%	13.1%	29.7%	9.8%	62.1%	86.1%	10.1%	68.7%	57.9%
Cashflow (US$million)	$644.9	$305.3	$464.9	$644.2	$597.5	$949.9	$1,338.8	$561.5	$346.1	$1,282.6	$2,730.6	$4,359.4	$6,259.7
Cashflow (US$/boe)	$42.72	$17.46	$20.06	$19.44	$13.74	$15.52	$16.46	$5.45	$2.68	$8.48	$10.96	$8.23	$8.76
Recycle Ratio	5.3x	4.3x	3.5x	1.0x	2.1x	4.9x	3.5x	-0.1x	0.9x	1.3x	2.4x	1.6x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$7.11	$3.90	$4.12	$18.26	$5.69	$3.31	$3.46	-$70.48	$2.46	-$15.29	$4.06	$5.55	$6.15
Acquisition Costs	na	na	$846.37	$22.62	na	$2.36	$42.32	na	$3.22	$5.47	na	$5.15	$5.57
All Sources (incl. revisions)	$8.09	$4.07	$5.78	$18.76	$6.59	$3.14	$4.75	-$78.10	$2.88	$6.74	$4.52	$5.27	$5.80
Exploration & Development (excl. revisions)	$6.31	$3.58	$2.81	$8.04	$3.10	$3.62	$3.14	$4.93	$1.97	$3.72	$3.10	$2.96	$3.28
Acquisition Costs	na	na	$846.37	$22.62	na	$2.36	$42.32	na	$3.22	$5.47	na	$5.15	$5.57
All Sources (excl. revisions)	$7.19	$3.74	$3.94	$8.83	$3.59	$3.38	$4.33	$5.47	$2.60	$5.14	$3.45	$4.18	$4.30
Geographically Segmented Costs													
North America	$8.09	$4.07	$5.78	$18.76	$6.59	$3.14	$4.75	$5.47	$2.60	$5.14	$3.45	$5.27	$5.80

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EQT Corporation (EQT - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	5.22	3.51	2.91	2.44	2.21	1.77	1.64	3.86	8.15	8.84	7.60	8.09	6.74
Exploration Expense	0.60	1.02	0.23	0.15	0.24	0.30	0.27	0.60	0.10	0.17	0.03	0.09	0.18
G&A/Other	-	-	-	1.85	2.06	1.51	1.46	1.30	1.39	0.04	0.26	0.47	0.71
F&D Costs	8.09	4.07	5.78	18.76	6.59	3.14	4.75	5.47	2.88	6.74	4.52	5.27	4.87
Return on Capital	19.81	11.13	15.41	35.88	10.46	4.92	7.10	5.75	3.30	11.05	4.26	6.51	6.10
Income Taxes	12.14	6.82	9.44	29.55	14.65	4.79	4.71	3.86	2.21	7.14	1.25	1.45	2.22
Breakeven Oil Price	45.87	26.56	33.77	88.63	36.21	16.43	19.93	20.84	18.04	33.98	17.91	21.88	20.82
Quality Differential	17.20	9.16	6.18	3.00	3.45	4.75	12.41	9.50	6.31	5.21	3.21	4.91	7.33
Required Brent Price	63.07	35.72	39.95	91.63	39.66	21.18	32.34	30.34	24.35	39.19	21.12	26.79	28.15

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	5.22	3.51	2.91	2.44	2.21	1.77	1.64	3.86	8.15	8.84	7.60	8.09	6.74
Exploration Expense	0.60	1.02	0.23	0.15	0.24	0.30	0.27	0.60	0.10	0.17	0.03	0.09	0.18
G&A/Other	-	-	-	1.85	2.06	1.51	1.46	1.30	1.39	0.04	0.26	0.47	0.71
F&D Costs	8.09	4.07	5.78	18.76	6.59	3.14	4.75	5.47	2.88	6.74	4.52	5.27	4.87
Return on Capital	19.81	11.13	15.41	35.88	10.46	4.92	7.10	5.75	3.30	11.05	4.26	6.51	6.10
Income Taxes	12.14	6.82	9.44	29.55	14.65	4.79	4.71	3.86	2.21	7.14	1.25	1.45	2.22
Breakeven Oil Price	45.87	26.56	33.77	88.63	36.21	16.43	19.93	20.84	18.04	33.98	17.91	21.88	20.82
Quality Differential	17.20	9.16	6.18	3.00	3.45	4.75	12.41	9.50	6.31	5.21	3.21	4.91	7.33
Required Brent Price	63.07	35.72	39.95	91.63	39.66	21.18	32.34	30.34	24.35	39.19	21.12	26.79	28.15

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

EQT Corporation (EQT - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.06	5.68	5.43	5.37	5.05	3.81	2.60	4.82	10.88	14.50	14.47	13.39	10.61
Exploration Expense	1.16	1.66	0.43	0.33	0.54	0.65	0.42	0.75	0.14	0.27	0.05	0.14	0.28
G&A/Other	-	-	-	4.06	4.71	3.25	2.32	1.62	1.86	0.06	0.50	0.79	1.11
F&D Costs (1-Year)	15.66	6.62	10.82	40.89	15.11	5.12	7.63	6.91	3.85	11.59	9.45	8.75	7.88
Return on Capital	38.03	18.13	28.50	77.83	23.83	9.04	11.48	7.24	4.41	18.19	8.62	10.59	9.72
Income Taxes	23.31	11.11	17.47	64.10	33.39	8.80	7.60	4.86	2.96	11.76	2.52	2.36	3.53
Breakeven Oil Price	**88.22**	**43.20**	**62.66**	**192.59**	**82.64**	**30.69**	**32.05**	**26.19**	**24.10**	**56.36**	**35.61**	**36.02**	**33.14**
Quality Differential	33.12	14.84	11.53	6.59	7.89	10.25	19.69	11.85	8.43	8.54	6.12	7.70	10.93
Required Brent Price	**121.34**	**58.03**	**74.19**	**199.19**	**90.53**	**40.94**	**51.75**	**38.05**	**32.53**	**64.91**	**41.72**	**43.72**	**44.07**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.06	5.68	5.43	5.37	5.05	3.81	2.60	4.82	10.88	14.50	14.47	13.39	10.61
Exploration Expense	1.16	1.66	0.43	0.33	0.54	0.65	0.42	0.75	0.14	0.27	0.05	0.14	0.28
G&A/Other	-	-	-	4.06	4.71	3.25	2.32	1.62	1.86	0.06	0.50	0.79	1.11
F&D Costs (1-Year)	35.73	24.78	23.22	22.56	30.63	9.14	15.87	6.97	11.67	18.69	13.29	16.12	13.30
Return on Capital	98.97	80.63	72.50	44.12	46.58	16.15	22.57	7.27	13.30	28.09	12.23	19.41	16.40
Income Taxes	60.66	49.42	44.44	36.34	65.28	15.71	14.95	4.88	8.93	18.16	3.58	4.33	5.96
Breakeven Oil Price	**206.57**	**162.17**	**146.03**	**112.79**	**152.80**	**48.72**	**58.74**	**26.30**	**46.78**	**79.77**	**44.12**	**54.17**	**47.67**
Quality Differential	33.12	14.84	11.53	6.59	7.89	10.25	19.69	11.85	8.43	8.54	6.12	7.70	10.93
Required Brent Price	**239.69**	**177.00**	**157.56**	**119.39**	**160.69**	**58.98**	**78.44**	**38.16**	**55.21**	**88.32**	**50.24**	**61.87**	**58.60**

Source: BMO Capital Markets, Company Reports

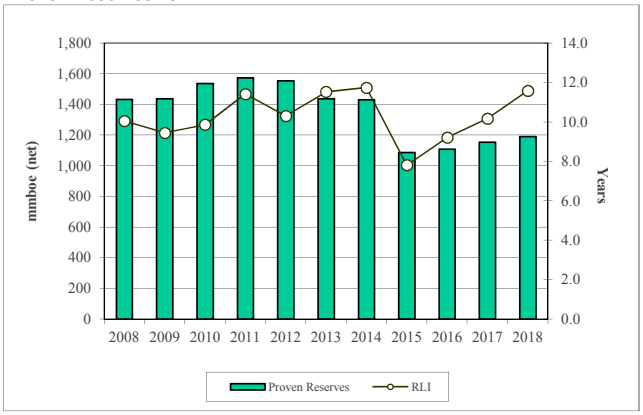
See pages F1 to F4 for analyst coverage.

Hess Corp. (HES - NYSE) US$, net

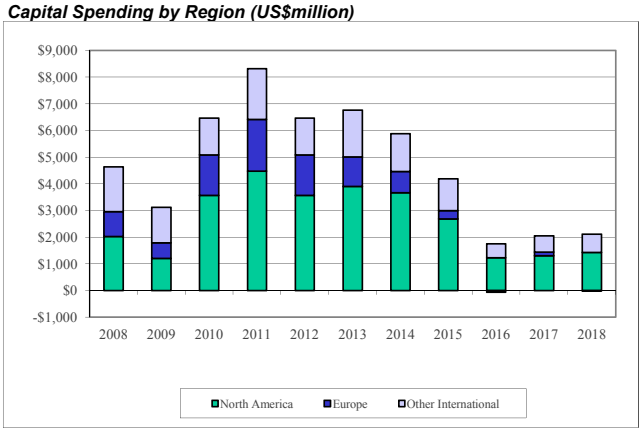
- The company reported results from operations of $1.41/boe in 2018 versus a loss of $9.28/boe in 2017.
- The company's one-year F&D costs averaged $12.01/boe versus $5.18/boe last year. On a realized oil:gas price ratio basis, F&D costs were $13.65/boe while costs for PD reserves came in at $20.92/boe.
- Hess's 2018 results imply a Brent breakeven oil price of $65.83/boe on a realized oil:gas price ratio on total proved reserves, while its PD costs imply a Brent breakeven of $81.01/boe.
- The company reported a loss on capital of 3.9% in 2018 versus a loss of 23.7% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

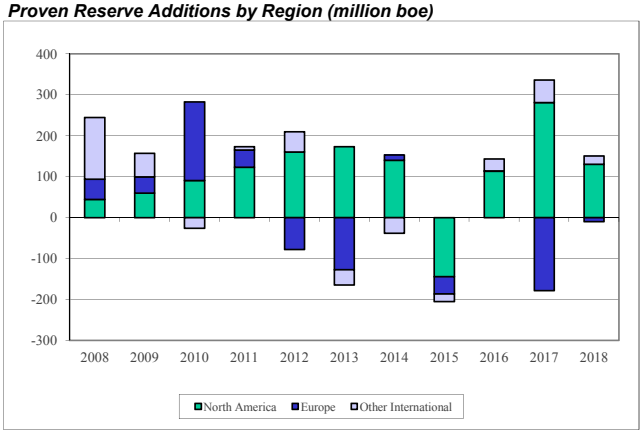
Proven Reserves vs RLI



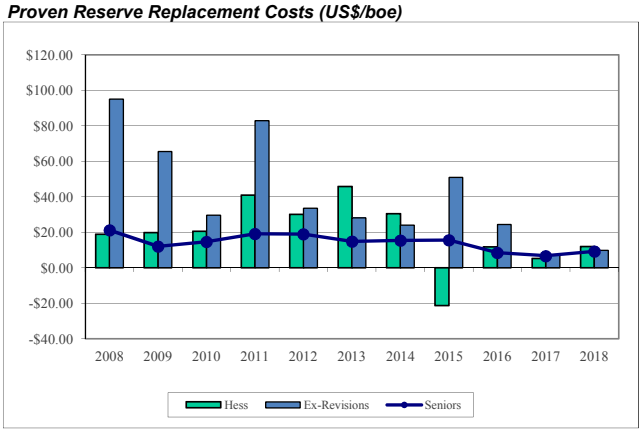
Capital Spending by Region (US$million)



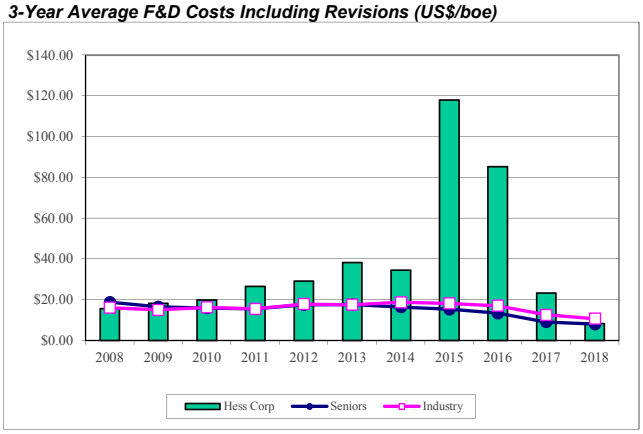
Proven Reserve Additions by Region (million boe)



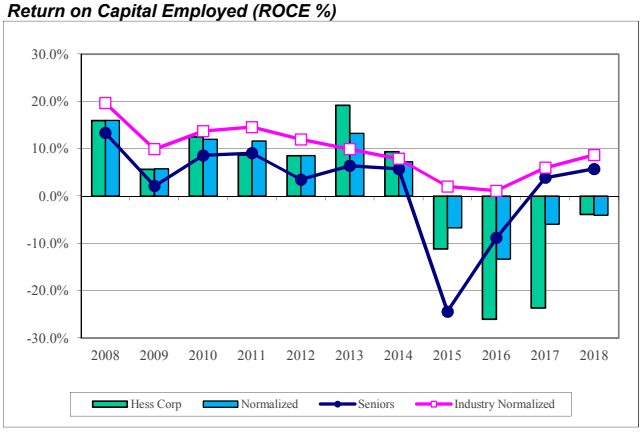
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



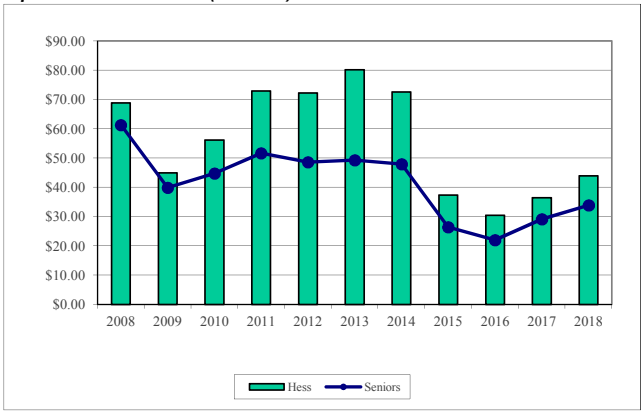
Source: BMO Capital Markets, Company Reports

Hess Corp. (HES - NYSE)

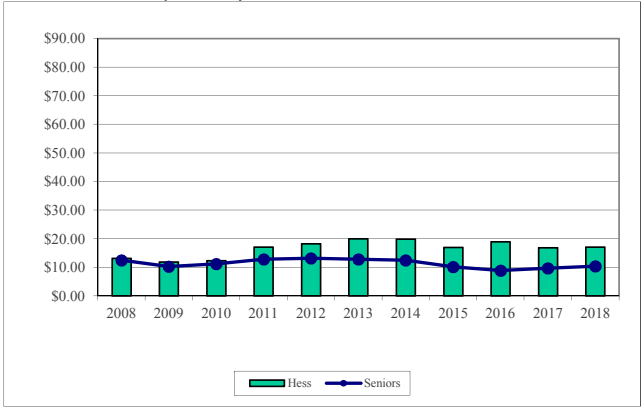
US$/boe, net

Worldwide

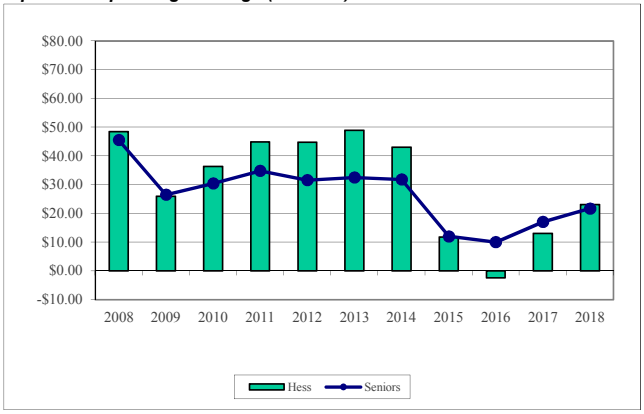
Upstream Net Revenue (US$/boe)



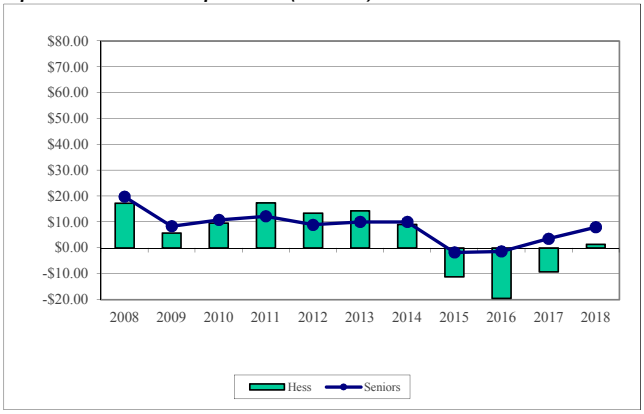
Production Costs (US$/boe)



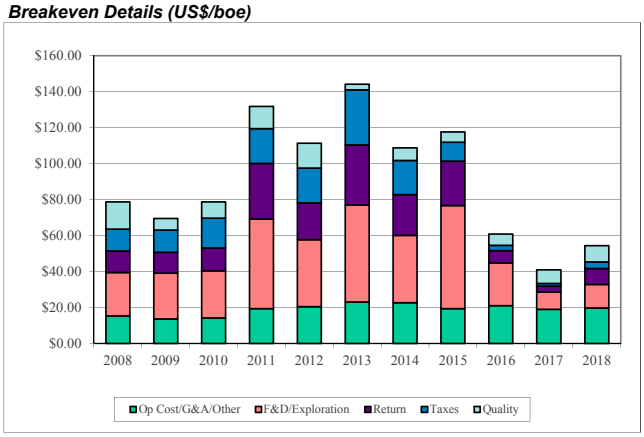
Upstream Operating Earnings (US$/boe)



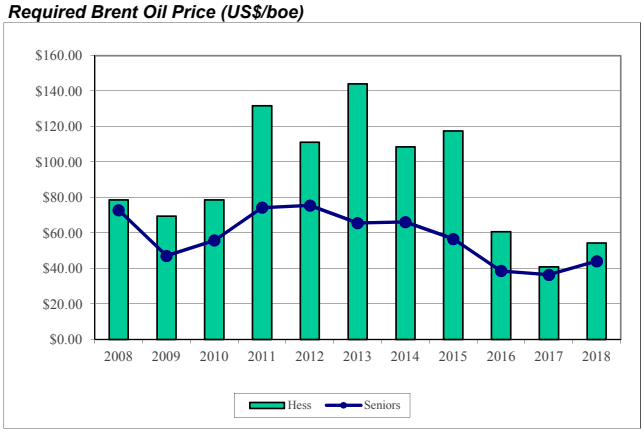
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



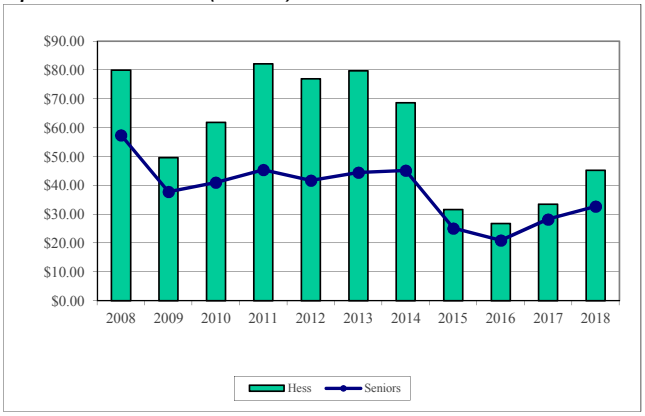
Source: BMO Capital Markets, Company Reports

Hess Corp. (HES - NYSE)

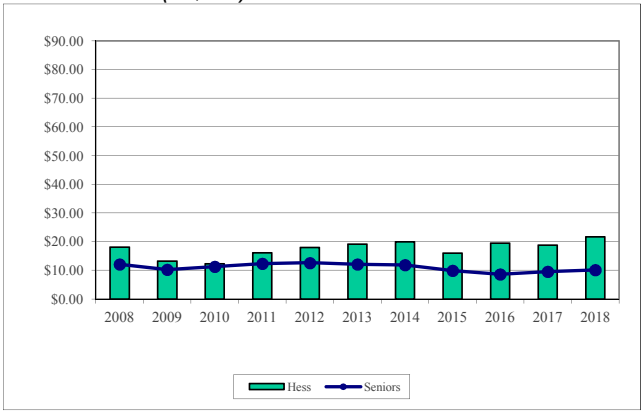
US$/boe, net

North America

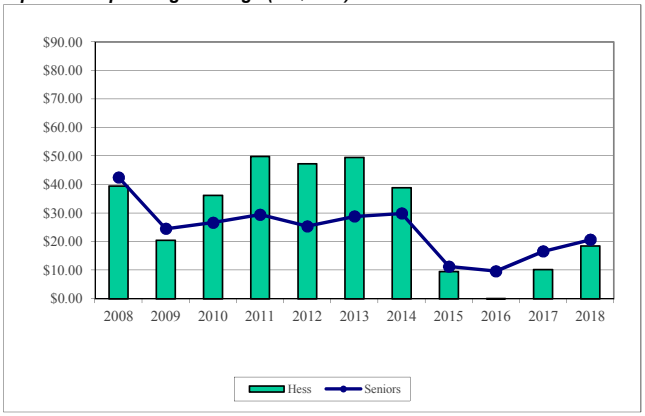
Upstream Net Revenue (US$/boe)



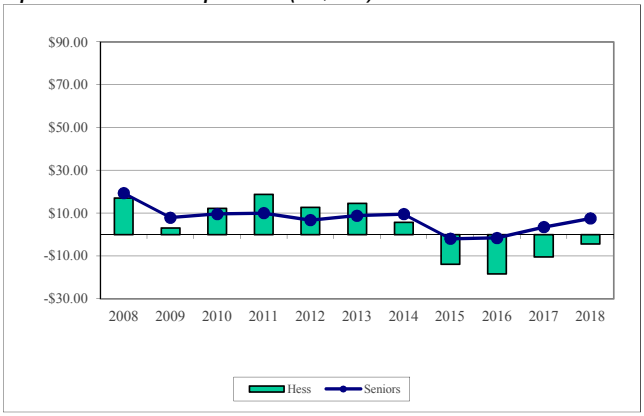
Production Costs (US$/boe)



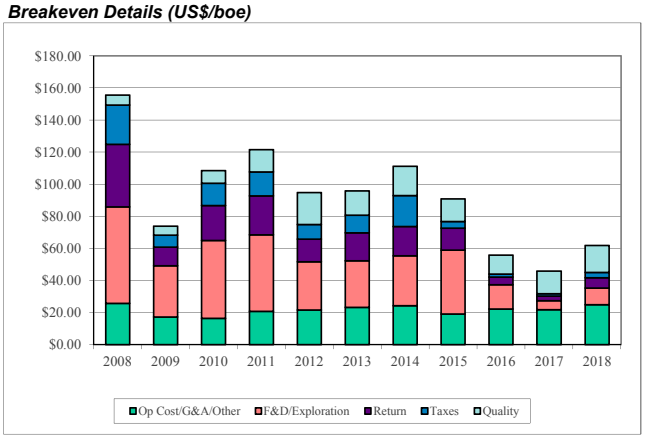
Upstream Operating Earnings (US$/boe)



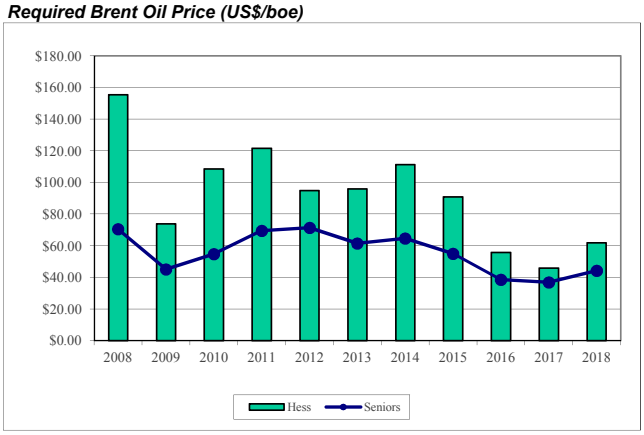
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



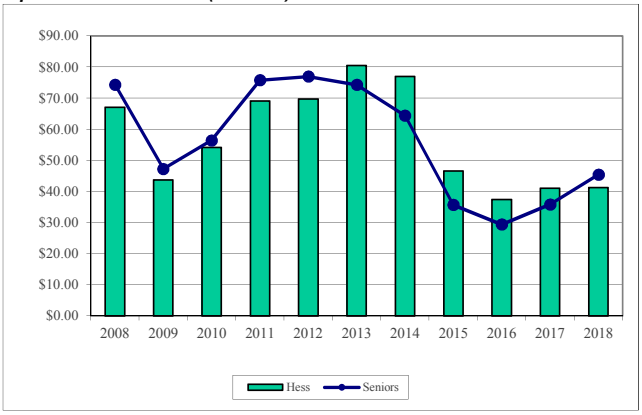
Source: BMO Capital Markets, Company Reports

Hess Corp. (HES - NYSE)

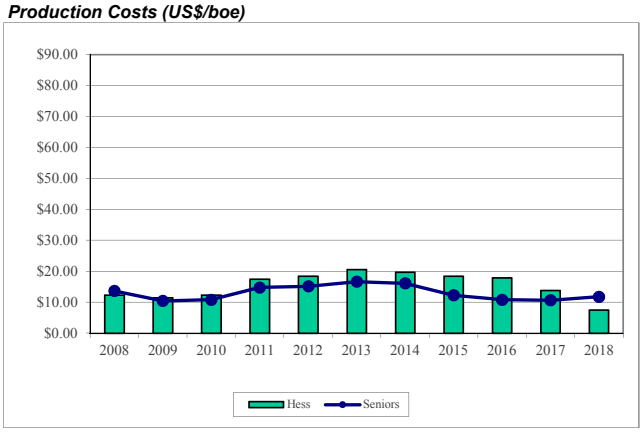
US$/boe, net

Total International

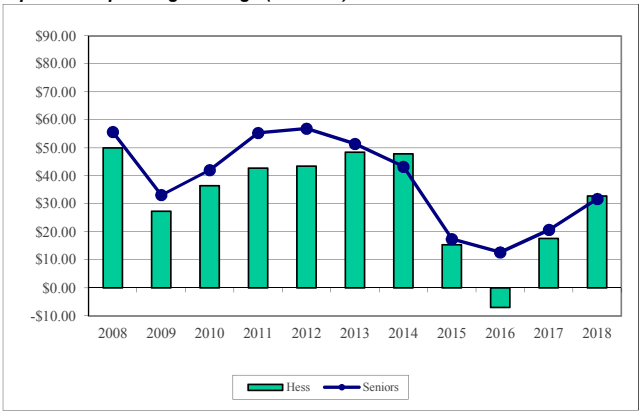
Upstream Net Revenue (US$/boe)



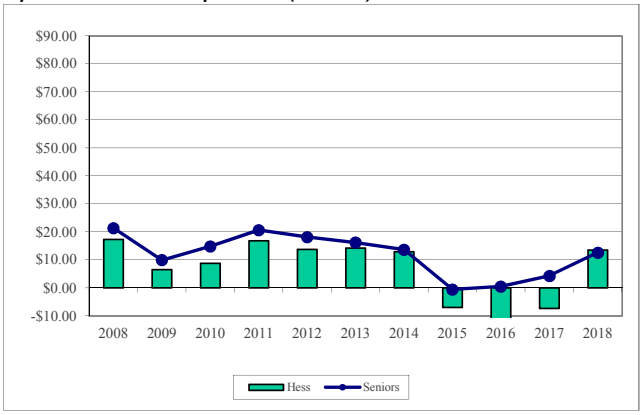
Production Costs (US$/boe)



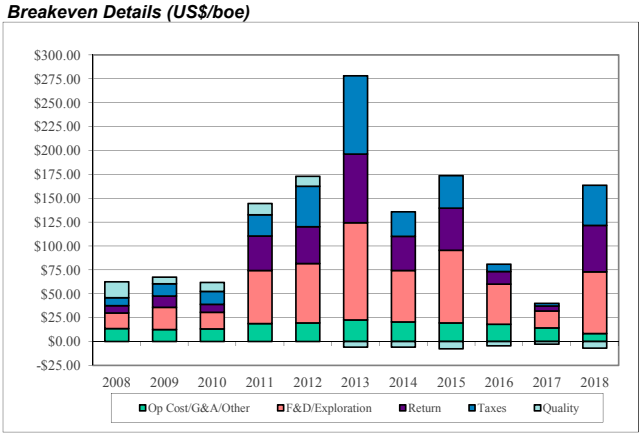
Upstream Operating Earnings (US$/boe)



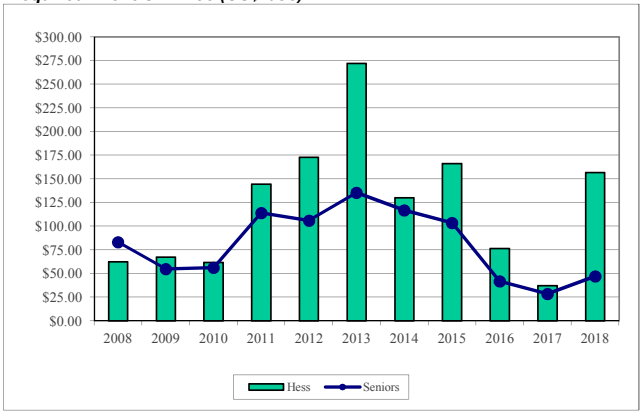
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



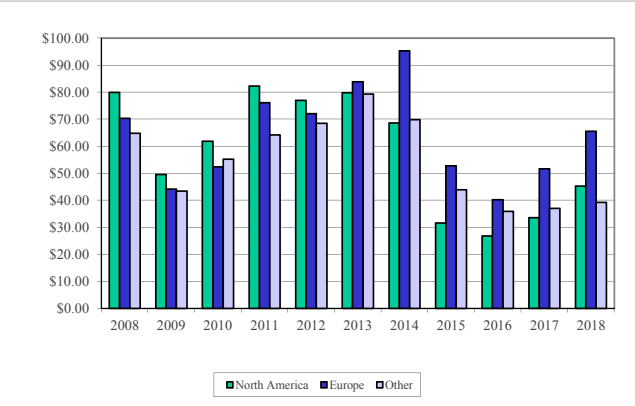
Source: BMO Capital Markets, Company Reports

Hess Corp. (HES - NYSE)

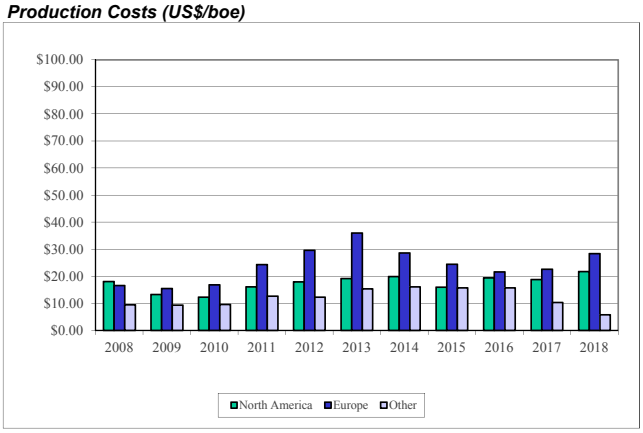
US$/boe, net

International Segments

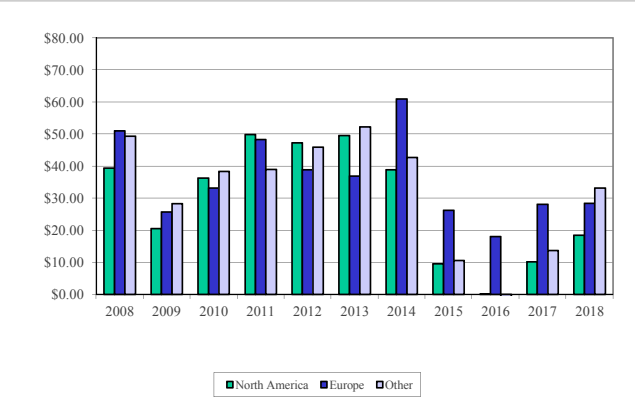
Upstream Net Revenue (US$/boe)



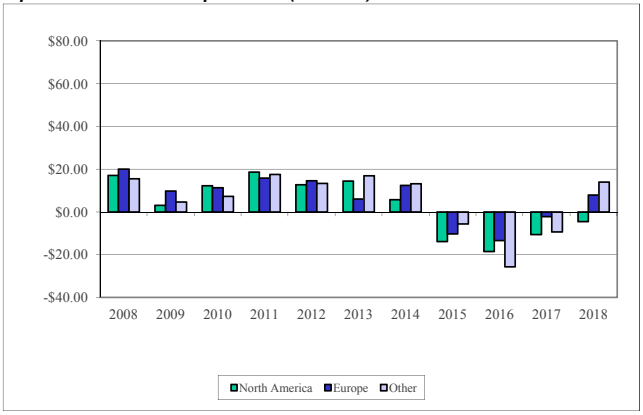
Production Costs (US$/boe)



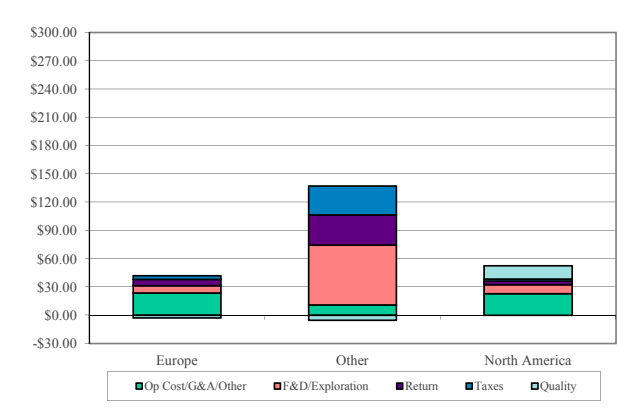
Upstream Operating Earnings (US$/boe)



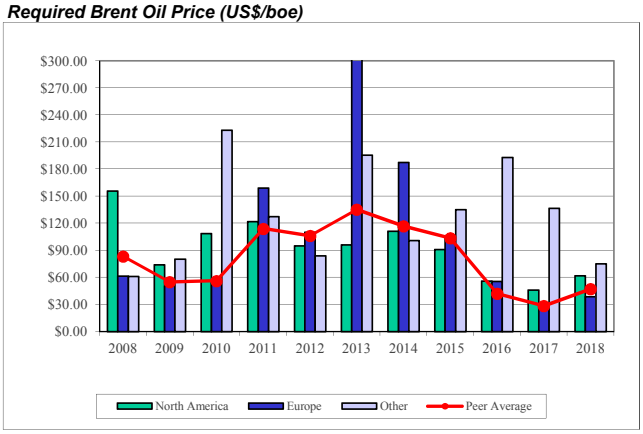
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Hess Corp. (HES - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	9,858	7,149	8,977	10,531	12,172	13,392	10,702	6,555	4,762	5,466	6,323
Midstream / Downstream Revenue	31,307	22,465	24,885	27,935	25,519	11,066	-	-	-	-	
Other	(71)	(45)	751	(595)	682	(37)	737	6	82	(61)	143
Total Revenue and Other Income	41,094	29,569	34,613	37,871	38,373	24,421	11,439	6,561	4,844	5,405	6,466
Crude Oil and Product Purchases	29,595	20,961	23,407	26,774	24,917	11,368	1,826	1,294	1,063	1,267	1,771
Production and Transportation Expenses	1,872	1,805	1,924	2,352	2,752	2,488	2,202	2,175	1,981	1,564	1,305
Marketing Expenses	1,025	1,008	1,021	1,069	1,057	867	-	-	-	-	
Exploration / Dry Hole Costs	725	829	865	1,195	1,070	1,031	840	881	1,442	507	362
General and Administrative	672	647	662	702	707	709	588	557	415	434	473
Depreciation, Depletion and Amortization	2,029	2,254	2,317	2,406	2,949	2,770	3,224	3,955	3,244	2,883	1,883
Interest, net	267	360	361	383	419	406	323	341	338	325	399
Other	209	183	745	529	764	289	-	1,616	215	4,203	53
Earnings Before Income Tax	4,700	1,522	3,311	2,461	3,738	4,493	2,436	(4,258)	(3,854)	(5,778)	220
Current Income Taxes	2,397	1,153	1,668	1,244	2,134	1,207	474	20	22	(29)	455
Future Income Taxes	(57)	(438)	(495)	(623)	(459)	(682)	270	(1,319)	2,200	(1,808)	(120)
Total Income Taxes	2,340	715	1,173	785	1,675	525	744	(1,299)	2,222	(1,837)	335
Minority Interest	-	(67)	(13)	27	(38)	(170)	(57)	(49)	(56)	(133)	(167)
Earnings From Continuing Operations	2,360	740	2,125	1,703	2,025	3,798	1,635	(3,008)	(6,132)	(4,074)	(282)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	1,254	682	(48)	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	2,360	740	2,125	1,703	2,025	5,052	2,317	(3,056)	(6,132)	(4,074)	(282)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	41	46	46
Net Earnings to Common Shareholders	2,360	740	2,125	1,703	2,025	5,052	2,317	(3,056)	(6,173)	(4,120)	(328)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	2,360	740	2,125	1,703	2,025	3,798	1,635	(3,008)	(6,132)	(4,074)	(282)
Charges and Credits Not Impacting Cash	2,307	2,314	2,857	2,579	3,465	2,943	3,795	4,662	6,575	5,353	1,928
Other	6	424	(561)	1,005	(224)	(418)	(388)	302	399	446	479
Cash Flow From Operations	4,673	3,478	4,421	5,287	5,266	6,323	5,042	1,956	842	1,725	2,125
Change in Working Capital / Other	(106)	(432)	109	(303)	394	(1,453)	(578)	25	(47)	(780)	(186)
Net Cash From Operating Activities	4,567	3,046	4,530	4,984	5,660	4,870	4,464	1,981	795	945	1,939
Total Capital Expenditures	(4,438)	(2,918)	(5,492)	(7,006)	(7,795)	(5,840)	(5,274)	(3,956)	(1,979)	(1,937)	(2,097)
Net Acquisitions	-	-	183	490	843	4,458	2,978	50	140	3,296	607
Other	(6)	(6)	50	(50)	(99)	1,960	2,297	(300)	(251)	(1)	(76)
Net Cash From Investing Activities	(4,444)	(2,924)	(5,259)	(6,566)	(7,051)	578	1	(4,206)	(2,090)	1,358	(1,566)
Net Change in Debt	(32)	447	1,098	422	1,845	(2,484)	8	643	84	188	(633)
Net Change in Common Stock	-	-	-	-	-	(1,493)	(3,715)	(142)	1,087	256	(1,365)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	557	-	-
Cash Dividends Paid	(130)	(131)	(131)	(136)	(171)	(235)	(303)	(287)	(350)	(363)	(345)
Other	340	16	8	39	8	(64)	182	2,283	(67)	(269)	(183)
Net Cash From Financing Activities	178	332	975	325	1,682	(4,276)	(3,828)	2,497	1,311	(188)	(2,526)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	(7)	-	-	-	-
Net Increase/(Decrease) in Cash	301	454	246	(1,257)	291	1,172	630	272	16	2,115	(2,153)
Cash and Equivalents, Beginning of Year	607	908	1,362	1,608	351	642	1,814	2,444	2,716	2,732	4,847
Cash and Equivalents, End of Year	908	1,362	1,608	351	642	1,814	2,444	2,716	2,732	4,847	2,694

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Hess Corp. (HES - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	7,332	7,987	8,780	8,339	8,387	8,599	6,687	4,404	4,276	6,157	4,459
Net Property, Plant and Equipment	16,271	16,627	21,127	24,712	28,807	28,771	27,517	26,352	23,595	16,192	16,083
Other Assets	4,986	4,851	5,489	6,085	6,247	5,384	4,374	3,439	750	763.00	891.00
Total Assets	28,589	29,465	35,396	39,136	43,441	42,754	38,578	34,195	28,621	23,112	21,433
Total Current Liabilities	7,730	6,850	7,613	8,100	8,382	6,558	4,851	2,628	2,251	2,435	2,203
Long-term Debt	3,812	4,319	5,537	6,005	7,324	5,420	5,919	6,544	6,694	6,397	6,605
Deferred Income Taxes	2,241	2,222	2,995	2,843	2,662	2,292	2,009	1,334	1,144	429	421
Other Liabilities and Deferred Credits	2,499	2,546	2,442	3,596	3,870	3,700	3,479	3,288	2,941	1,497	1,316
Total Liabilities	16,282	15,937	18,587	20,544	22,238	17,970	16,258	13,794	13,030	10,758	10,545
Minority Interests	-	144	120	76	113	64	115	1,015	1,057	1,303	1,259
Common Shares	326	327	338	340	342	325	286	286	317	315	291
Contributed Surplus (Paid-in Capital)	2,347	2,481	3,256	3,417	3,524	3,498	3,277	4,127	5,773	5,824	5,386
Preferred Stock	-	-	-	-	-	-	-	-	1	1	1
Retained Earnings	11,642	12,251	14,254	15,826	17,717	21,235	20,052	16,637	10,147	5,597	4,257
Other / Comprehensive Income (Loss)	(2,008)	(1,675)	(1,159)	(1,067)	(493)	(338)	(1,410)	(1,664)	(1,704)	(686.0)	(306.0)
Total Shareholders' Equity	12,307	13,384	16,689	18,516	21,090	24,720	22,205	19,386	14,534	11,051	9,629
Total Liabilities and Shareholders' Equity	28,589	29,465	35,396	39,136	43,441	42,754	38,578	34,195	28,621	23,112	21,433
Return on Capital Employed (ROCE)	**15.9%**	**5.6%**	**12.5%**	**8.7%**	**8.6%**	**19.1%**	**9.3%**	**-11.2%**	**-26.0%**	**-23.7%**	**-3.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	9,806	6,835	8,744	10,047	10,893	9,995	8,839	5,201	3,668	4,128	4,515	12,311	26,351
Production Costs	1,872	1,805	1,924	2,352	2,752	2,488	2,414	2,359	2,276	1,912	1,760	5,948	10,721
Exploration	725	829	865	1,195	1,070	1,031	840	881	1,442	507	120	2,069	3,790
DD&A	1,952	2,167	2,222	2,305	2,833	2,671	3,210	3,852	3,132	2,736	1,999	7,867	14,929
G&A/Other	302	255	281	313	314	377	336	317	235	225	258	718	1,371
Pre-tax Results Of Operations	4,955	1,779	3,452	3,882	3,924	3,428	2,039	-2,208	-3,417	-1,252	378	-4,291	-4,460
Income Taxes	2,490	904	1,948	1,487	1,903	1,637	926	-648	-1,074	-201	233	-1,042	-764
Results Of Operations	2,465	875	1,504	2,395	2,021	1,791	1,113	-1,560	-2,343	-1,051	145	-3,249	-3,696

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,652	1,611	2,453	3,371	4,104	4,268	4,461	2,706	2,096	2,335	3,141	7,572	14,739
Production Costs	373	431	489	660	957	1,027	1,295	1,373	1,527	1,311	1,510	4,348	7,016
Exploration	305	383	364	475	426	371	359	255	342	106	119	567	1,181
DD&A	238	503	649	800	1,406	1,393	1,751	2,361	2,031	1,819	1,748	5,598	9,710
G&A/Other	159	130	161	190	196	218	281	262	218	208	230	656	1,199
Pre-tax Results Of Operations	577	164	790	1,246	1,119	1,259	775	-1,545	-2,022	-1,109	-466	-3,597	-4,367
Income Taxes	223	64	305	479	438	483	399	-359	-576	-377	-158	-1,111	-1,071
Results Of Operations	354	100	485	767	681	776	376	-1,186	-1,446	-732	-308	-2,486	-3,296

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	8,154	5,224	6,291	6,676	6,789	5,727	4,378	2,495	1,572	1,793	1,374	4,739	11,612
Production Costs	1,499	1,374	1,435	1,692	1,795	1,461	1,119	986	749	601	250	1,600	3,705
Exploration	420	446	501	720	644	660	481	626	1,100	401	1	1,502	2,609
DD&A	1,714	1,664	1,573	1,505	1,427	1,278	1,459	1,491	1,101	917	251	2,269	5,219
G&A/Other	143	125	120	123	118	159	55	55	17	17	28	62	172
Pre-tax Results Of Operations	4,378	1,615	2,662	2,636	2,805	2,169	1,264	-663	-1,395	-143	844	-694	-93
Income Taxes	2,267	840	1,643	1,008	1,464	1,154	527	-289	-498	176	392	70	307
Results Of Operations	2,111	775	1,019	1,628	1,341	1,015	737	-374	-897	-319	452	-764	-400

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Hess Corp. (HES - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue	$68.89	$44.97	$56.11	$72.98	$72.30	$80.17	$72.55	$37.42	$30.48	$36.42	$43.91	$36.59	$44.11
Production Costs	$13.15	$11.88	$12.35	$17.08	$18.27	$19.96	$19.81	$16.97	$18.91	$16.87	$17.12	$17.68	$17.95
Exploration	$5.09	$5.45	$5.55	$8.68	$7.10	$8.27	$6.89	$6.34	$11.98	$4.47	$1.17	$6.15	$6.34
DD&A	$13.71	$14.26	$14.26	$16.74	$18.80	$21.43	$26.35	$27.71	$26.03	$24.14	$19.44	$23.38	$24.99
G&A/Other	$2.12	$1.68	$1.80	$2.27	$2.08	$3.02	$2.76	$2.28	$1.95	$1.99	$2.51	$2.13	$2.30
Pre-tax Results Of Operations	$34.81	$11.70	$22.15	$28.20	$26.04	$27.50	$16.74	-$15.88	-$28.40	-$11.05	$3.68	-$12.75	-$7.47
Income Taxes	$17.49	$5.95	$12.50	$10.80	$12.63	$13.13	$7.60	-$4.66	-$8.93	-$1.77	$2.27	-$3.10	-$1.28
Results Of Operations	$17.32	$5.76	$9.65	$17.40	$13.42	$14.37	$9.14	-$11.22	-$19.47	-$9.28	$1.41	-$9.66	-$6.19

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue	$79.94	$49.57	$61.84	$82.22	$76.95	$79.78	$68.63	$31.65	$26.76	$33.52	$45.19	$34.81	$40.05
Production Costs	$18.05	$13.26	$12.33	$16.10	$17.94	$19.20	$19.92	$16.06	$19.49	$18.82	$21.73	$19.99	$19.07
Exploration	$14.76	$11.78	$9.18	$11.59	$7.99	$6.93	$5.52	$2.98	$4.37	$1.52	$1.71	$2.61	$3.21
DD&A	$11.52	$15.48	$16.36	$19.51	$26.36	$26.04	$26.94	$27.61	$25.93	$26.11	$25.15	$25.74	$26.39
G&A/Other	$7.69	$4.00	$4.06	$4.63	$3.68	$4.07	$4.32	$3.06	$2.78	$2.99	$3.31	$3.02	$3.26
Pre-tax Results Of Operations	$27.92	$5.05	$19.92	$30.39	$20.98	$23.53	$11.92	-$18.07	-$25.81	-$15.92	-$6.71	-$16.54	-$11.87
Income Taxes	$10.79	$1.97	$7.69	$11.69	$8.22	$9.03	$6.14	-$4.20	-$7.35	-$5.41	-$2.28	-$5.11	-$2.91
Results Of Operations	$17.13	$3.08	$12.23	$18.70	$12.77	$14.50	$5.78	-$13.87	-$18.46	-$10.51	-$4.43	-$11.43	-$8.96

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Net Revenue	$67.02	$43.72	$54.15	$69.06	$69.75	$80.47	$77.03	$46.64	$37.43	$41.06	$41.22	$39.82	$50.63
Production Costs	$12.32	$11.50	$12.35	$17.50	$18.44	$20.53	$19.69	$18.43	$17.83	$13.76	$7.50	$13.45	$16.16
Exploration	$3.45	$3.73	$4.31	$7.45	$6.62	$9.27	$8.46	$11.70	$26.19	$9.18	$0.03	$12.62	$11.38
DD&A	$14.09	$13.92	$13.54	$15.57	$14.66	$17.96	$25.67	$27.87	$26.21	$21.00	$7.53	$19.07	$22.76
G&A/Other	$1.18	$1.05	$1.03	$1.27	$1.21	$2.23	$0.97	$1.03	$0.40	$0.39	$0.84	$0.52	$0.75
Pre-tax Results Of Operations	$35.98	$13.51	$22.92	$27.27	$28.82	$30.48	$22.24	-$12.39	-$33.21	-$3.27	$25.32	-$5.83	-$0.41
Income Taxes	$18.63	$7.03	$14.15	$10.42	$15.04	$16.22	$9.27	-$5.41	-$11.86	$4.04	$11.75	$0.59	$1.34
Results Of Operations	$17.35	$6.49	$8.77	$16.85	$13.77	$14.26	$12.97	-$6.99	-$21.35	-$7.31	$13.57	-$6.42	-$1.75

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Europe													
Net Revenue	$70.34	$44.20	$52.35	$76.11	$72.00	$83.89	$95.26	$52.73	$40.25	$51.62	$65.60	$47.08	$61.11
Production Costs	$16.61	$15.53	$16.91	$24.40	$29.65	$36.06	$28.70	$24.48	$21.71	$22.60	$28.40	$22.64	$24.71
Exploration	$0.92	$1.81	$1.14	$1.92	$2.08	$6.45	$5.57	$0.06	$0.40	$0.08	$0.00	$0.24	$1.58
DD&A	$12.10	$11.44	$10.77	$14.82	$13.05	$27.40	$42.25	$38.48	$33.84	$31.32	$14.80	$31.19	$36.00
G&A/Other	$1.76	$1.09	$1.12	$1.41	$1.35	$4.47	$0.00	$1.88	$0.07	$0.82	$8.80	$1.12	$1.03
Pre-tax Results Of Operations	$38.95	$14.32	$22.42	$33.55	$25.87	$9.51	$18.74	-$12.18	-$15.78	-$3.21	$13.60	-$8.10	-$2.20
Income Taxes	$18.84	$4.48	$11.09	$17.71	$11.30	$3.40	$6.25	-$1.93	-$2.41	-$0.96	$5.60	-$1.13	$0.58
Results Of Operations	$20.11	$9.85	$11.33	$15.84	$14.58	$6.11	$12.49	-$10.25	-$13.37	-$2.24	$8.00	-$6.97	-$2.78

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Other													
Net Revenue	$64.79	$43.46	$55.22	$64.16	$68.53	$79.35	$69.79	$43.92	$35.89	$36.98	$39.24	$37.43	$46.74
Production Costs	$9.45	$9.36	$9.68	$12.70	$12.38	$15.40	$16.11	$15.73	$15.72	$10.35	$5.81	$10.41	$12.98
Exploration	$5.15	$4.75	$6.18	$11.30	$9.07	$10.21	$9.61	$16.89	$40.27	$12.70	$0.03	$16.70	$15.02
DD&A	$15.42	$15.24	$15.17	$16.09	$15.53	$14.84	$19.08	$23.14	$22.05	$17.02	$6.94	$15.07	$17.83
G&A/Other	$0.78	$1.02	$0.98	$1.18	$1.14	$1.50	$1.35	$0.65	$0.59	$0.22	$0.19	$0.32	$0.65
Pre-tax Results Of Operations	$34.00	$13.09	$23.21	$22.89	$30.41	$37.40	$23.63	-$12.49	-$42.74	-$3.30	$26.27	-$5.08	$0.26
Income Taxes	$18.49	$8.38	$15.94	$5.35	$17.07	$20.45	$10.48	-$6.96	-$17.03	$5.97	$12.25	$1.15	$1.63
Results Of Operations	$15.50	$4.71	$7.26	$17.54	$13.34	$16.95	$13.16	-$5.53	-$25.71	-$9.27	$14.02	-$6.24	-$1.36

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Hess Corp. (HES - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	745.2	739.7	720.5	668.5	668.5	602.7	539.7	624.7	564.4	547.9	589.0	567.1	573.2
Liquids Production (b/d)	265,753	293,151	306,849	265,753	301,370	241,096	243,836	276,712	235,616	219,178	183,562	212,785	231,781
Total Production (boe/d)	389,954	416,438	426,941	377,169	412,785	341,553	333,790	380,822	329,680	310,502	281,735	307,306	327,306
% Gas Production	32%	30%	28%	30%	27%	29%	27%	27%	29%	29%	35%	31%	29%
% Oil Production	68%	70%	72%	70%	73%	71%	73%	73%	71%	71%	65%	69%	71%
Proven Reserves:													
Gas Reserves (bcf)	2,773	2,821	2,598	2,423	2,295	1,975	1,881	1,554	1,697	1,941	1,815	1,818	1,778
Oil Reserves (mmbbls)	970	967	1,104	1,169	1,171	1,108	1,117	827	826	830	889	848	898
Total Proven Reserves (mmboe)	1,432	1,437	1,537	1,573	1,554	1,437	1,431	1,086	1,109	1,154	1,192	1,151	1,194
% Gas Reserves	32%	33%	28%	26%	25%	23%	22%	24%	26%	28%	25%	26%	25%
% Oil Reserves	68%	67%	72%	74%	75%	77%	78%	76%	74%	72%	75%	74%	75%
Proven Reserve Life Index	10.1	9.5	9.9	11.4	10.3	11.5	11.7	7.8	9.2	10.2	11.6	10.3	10.1
Proven Reserve Additions:													
Gas Additions (bcf)	377.0	318.0	40.0	69.0	116.0	-100.0	103.0	-99.0	349.0	444.0	89.0	882.0	886.0
Oil Additions (mmbbls)	182.0	104.0	249.0	162.0	112.0	25.0	98.0	-189.0	85.0	84.0	126.0	295.0	204.0
Total Additions (mmboe)	244.8	157.0	255.7	173.5	131.3	8.3	115.2	-205.5	143.2	158.0	140.8	442.0	351.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	46.8	30.8	28.0	96.2	193.0	240.7	245.0	82.3	69.0	291.0	212.7	572.7	900.0
Acquisitions	2.0	16.8	189.7	4.2	0.0	0.0	0.0	0.0	0.0	0.0	4.0	4.0	4.0
Dispositions	0.0	-0.2	-58.5	-29.5	-83.0	-139.5	-77.2	-8.0	0.0	-239.0	-35.2	(274.2)	(359.3)
Revisions of Estimates	196.0	109.5	96.5	102.7	21.3	-92.8	-52.7	-279.8	74.2	106.0	-40.7	139.5	(193.0)
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	19.1%	19.6%	11.0%	55.4%	147.0%	2888.0%	212.7%	-40.1%	48.2%	184.2%	151.0%	129.6%	255.9%
Acquisitions	0.8%	10.7%	74.2%	2.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	0.9%	1.1%
Dispositions	0.0%	-0.1%	-22.9%	-17.0%	-63.2%	-1674.0%	-67.0%	3.9%	0.0%	-151.3%	-25.0%	-62.0%	-102.2%
Revisions of Estimates	80.1%	69.7%	37.7%	59.2%	16.2%	-1114.0%	-45.7%	136.2%	51.8%	67.1%	-28.9%	31.6%	-54.9%
Additions as % of Production:													
Gas	138.6%	117.8%	15.2%	28.3%	47.5%	-45.5%	52.3%	-43.4%	169.4%	222.0%	41.4%	142.0%	84.7%
Oil	187.6%	97.2%	222.3%	167.0%	101.8%	28.4%	110.1%	-187.1%	98.8%	105.0%	188.1%	126.6%	48.2%
Total	172.0%	103.3%	164.1%	126.0%	87.2%	6.7%	94.5%	-147.8%	119.0%	139.4%	137.0%	131.4%	58.9%
Additions as % of Reserves:													
Gas	13.6%	11.3%	1.5%	2.8%	5.1%	-5.1%	5.5%	-6.4%	20.6%	22.9%	4.9%	48.5%	49.8%
Oil	18.8%	10.8%	22.6%	13.9%	9.6%	2.3%	8.8%	-22.9%	10.3%	10.1%	14.2%	34.8%	22.7%
Total	17.1%	10.9%	16.6%	11.0%	8.5%	0.6%	8.1%	-18.9%	12.9%	13.7%	11.8%	38.4%	29.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,134	$938	$915	$1,325	$915	$1,044	$763	$622	$491	$322	$442	$1,255	$2,640
Development	$2,523	$1,927	$2,654	$5,645	$2,654	$5,666	$5,028	$3,549	$1,188	$1,687	$1,577	$4,452	$13,029
Acquisitions	$984	$262	$2,902	$1,346	$2,902	$56	$88	$22	$11	$46	$94	$151	$261
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$4,641	$3,127	$6,471	$8,316	$6,471	$6,766	$5,879	$4,193	$1,690	$2,055	$2,113	$5,858	$15,930
Expenditures as % of Total (US$million):													
Exploration	24.4%	30.0%	14.1%	15.9%	14.1%	15.4%	13.0%	14.8%	29.1%	15.7%	20.9%	21.4%	16.6%
Development	54.4%	61.6%	41.0%	67.9%	41.0%	83.7%	85.5%	84.6%	70.3%	82.1%	74.6%	76.0%	81.8%
Acquisitions	21.2%	8.4%	44.8%	16.2%	44.8%	0.8%	1.5%	0.5%	0.7%	2.2%	4.4%	2.6%	1.6%
Cashflow (US$million)	$4,594	$3,263	$3,264	$4,700	$4,854	$4,462	$4,323	$2,292	$789	$1,685	$2,144	$4,618	$11,233
Cashflow (US$/boe)	$32.28	$21.47	$20.95	$34.14	$32.22	$35.79	$35.48	$16.49	$6.56	$14.87	$20.85	$13.72	$18.81
Recycle Ratio	1.7x	1.1x	1.0x	0.8x	1.1x	0.8x	1.2x	-0.8x	0.6x	2.9x	1.7x	1.7x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$15.06	$20.42	$28.67	$35.05	$16.65	$45.39	$30.11	-$21.12	$11.73	$5.06	$11.74	$8.01	$22.16
Acquisition Costs	$492.00	$15.56	$15.30	$323.04	na	na	na	na	na	na	$23.50	na	na
All Sources (incl. Revisions)	$18.96	$19.90	$20.60	$40.97	$30.19	$45.77	$30.57	-$21.23	$11.80	$5.18	$12.01	$8.18	$22.41
Exploration & Development (excl. revisions)	$78.09	$92.92	$127.46	$72.48	$18.49	$27.88	$23.64	$50.66	$24.33	$6.90	$9.49	$9.97	$17.41
Acquisition Costs	$492.00	$15.56	$15.30	$323.04	na	na	na	na	na	na	$23.50	na	na
All Sources (excl. revisions)	$95.04	$65.60	$29.73	$82.88	$33.53	$28.11	$24.00	$50.93	$24.49	$7.06	$9.75	$10.16	$17.62
Geographically Segmented Costs													
North America	$45.42	$20.18	$39.46	$36.28	$22.01	$22.21	$25.58	-$18.60	$10.82	$4.18	$8.68	$6.72	$17.53
Europe	$14.17	$11.67	$7.10	$35.85	-$58.38	-$30.30	$51.78	-$7.84	-$17.40	-$14.70	$0.75	-$5.13	-$29.43
Other International	$11.11	$23.25	$75.71	$222.82	$28.04	$751.71	$39.57	-$111.66	$17.83	$8.37	$33.64	$14.83	$30.01

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Hess Corp. (HES - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	13.15	11.88	12.35	17.08	18.27	19.96	19.81	16.97	18.91	16.87	17.12	17.68	17.95
Exploration Expense	5.09	5.45	5.55	8.68	7.10	8.27	6.89	6.34	11.98	4.47	1.17	6.15	6.34
G&A/Other	2.12	1.68	1.80	2.27	2.08	3.02	2.76	2.28	1.95	1.99	2.51	2.13	2.30
F&D Costs	18.96	19.90	20.60	40.97	30.19	45.77	30.57	50.93	11.80	5.18	12.01	8.18	22.10
Return on Capital	12.06	11.79	12.73	31.09	20.45	33.40	22.71	24.87	6.79	3.31	8.73	5.31	14.22
Income Taxes	12.19	12.18	16.49	19.29	19.25	30.53	18.90	10.33	3.11	1.52	3.74	2.38	7.17
Breakeven Oil Price	63.58	62.87	69.52	119.39	97.34	140.95	101.64	111.72	54.56	33.33	45.27	41.84	70.08
Quality Differential	15.08	6.52	9.05	12.33	13.83	3.16	6.94	5.81	6.14	7.58	9.11	7.61	7.12
Required Brent Price	78.66	69.39	78.57	131.72	111.17	144.11	108.59	117.53	60.70	40.92	54.37	49.45	77.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	18.05	13.26	12.33	16.10	17.94	19.20	19.92	16.06	19.49	18.82	21.73	19.99	19.07
Exploration Expense	14.76	11.78	9.18	11.59	7.99	6.93	5.52	2.98	4.37	1.52	1.71	2.61	3.21
G&A/Other	7.69	4.00	4.06	4.63	3.68	4.07	4.32	3.06	2.78	2.99	3.31	3.02	3.26
F&D Costs	45.42	20.18	39.46	36.28	22.01	22.21	25.58	36.86	10.82	4.18	8.68	6.72	17.22
Return on Capital	39.00	11.66	21.82	24.10	14.15	17.41	18.26	13.69	4.67	2.83	6.42	4.12	10.05
Income Taxes	24.57	7.46	13.72	15.06	9.11	10.84	19.38	4.14	1.86	1.46	3.30	1.95	5.23
Breakeven Oil Price	149.48	68.34	100.56	107.75	74.87	80.67	93.00	76.80	43.99	31.79	45.14	38.41	58.03
Quality Differential	6.03	5.53	8.07	13.91	19.94	15.24	18.26	14.17	11.77	14.08	16.77	14.21	15.01
Required Brent Price	155.51	73.87	108.63	121.66	94.81	95.90	111.26	90.98	55.76	45.87	61.91	52.61	73.05

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	12.32	11.50	12.35	17.50	18.44	20.53	19.69	18.43	17.83	13.76	7.50	13.45	16.16
Exploration Expense	3.45	3.73	4.31	7.45	6.62	9.27	8.46	11.70	26.19	9.18	0.03	12.62	11.38
G&A/Other	1.18	1.05	1.03	1.27	1.21	2.23	0.97	1.03	0.40	0.39	0.84	0.52	0.75
F&D Costs	13.05	19.73	12.98	48.23	55.53	92.38	45.14	64.35	15.57	8.78	64.48	15.01	39.66
Return on Capital	7.72	11.76	8.33	36.03	38.57	71.90	35.99	44.07	13.50	5.03	48.60	10.82	28.66
Income Taxes	8.29	12.75	13.45	22.29	42.13	81.75	25.73	34.11	7.50	2.80	42.09	7.00	19.62
Breakeven Oil Price	46.01	60.52	52.46	132.77	162.50	278.07	135.99	173.69	81.00	39.94	163.54	59.42	116.22
Quality Differential	16.62	6.79	9.38	11.66	10.48	(5.91)	(6.00)	(7.56)	(4.37)	(2.78)	(6.87)	(4.67)	(5.52)
Required Brent Price	62.63	67.30	61.84	144.43	172.98	272.16	129.99	166.13	76.63	37.16	156.67	54.74	110.71

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	-	15.53	16.91	24.40	29.65	36.06	28.70	24.48	21.71	22.60	28.40	22.64	24.71
Exploration Expense	-	1.81	1.14	1.92	2.08	6.45	5.57	0.06	0.40	0.08	-	0.24	1.58
G&A/Other	-	1.09	1.12	1.41	1.35	4.47	-	1.88	0.07	0.82	8.80	1.12	1.03
F&D Costs	-	11.67	7.10	35.85	17.83	104.70	51.78	30.10	12.17	7.87	1.80	7.28	20.74
Return on Capital	-	7.78	6.19	34.38	15.95	139.48	71.43	32.60	13.80	2.65	2.54	6.77	21.60
Income Taxes	-	3.53	6.06	38.43	12.36	77.49	35.71	19.62	8.30	1.14	1.78	3.85	12.11
Breakeven Oil Price	-	41.42	38.52	136.39	79.22	368.66	193.19	108.75	56.46	35.17	43.33	41.90	81.77
Quality Differential	-	9.02	16.69	22.44	30.91	16.70	(5.77)	(4.90)	(0.82)	(3.36)	(4.71)	(2.96)	(3.91)
Required Brent Price	-	50.44	55.21	158.84	110.13	385.36	187.43	103.85	55.64	31.81	38.62	38.94	77.86

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Other													
Operating Costs	-	9.36	9.68	12.70	12.38	15.40	16.11	15.73	15.72	10.35	5.81	10.41	12.98
Exploration Expense	-	4.75	6.18	11.30	9.07	10.21	9.61	16.89	40.27	12.70	0.03	16.70	15.02
G&A/Other	-	1.02	0.98	1.18	1.14	1.50	1.35	0.65	0.59	0.22	0.19	0.32	0.65
F&D Costs	-	23.25	75.71	54.71	28.04	83.47	39.57	50.36	57.80	49.24	33.64	46.89	46.12
Return on Capital	-	13.01	39.32	33.25	14.86	44.53	22.46	26.62	42.38	33.35	22.53	32.14	29.15
Income Taxes	-	23.15	86.28	10.14	19.01	53.71	17.88	33.49	42.38	33.35	19.69	30.73	28.39
Breakeven Oil Price	-	74.54	218.15	123.27	84.50	208.81	106.98	143.74	199.14	139.22	81.89	137.21	132.31
Quality Differential	-	5.61	5.08	4.16	(0.57)	(13.38)	(6.09)	(8.74)	(6.31)	(2.56)	(7.04)	(5.30)	(6.15)
Required Brent Price	-	80.15	223.23	127.43	83.93	195.43	100.89	135.00	192.83	136.66	74.85	131.90	126.16

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Hess Corp. (HES - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.70	13.88	14.49	20.96	21.83	24.18	23.61	19.03	21.35	20.04	21.12	20.85	20.96
Exploration Expense	6.08	6.37	6.52	10.65	8.49	10.02	8.21	7.11	13.53	5.31	1.44	7.25	7.41
G&A/Other	2.53	1.96	2.12	2.79	2.49	3.66	3.29	2.56	2.20	2.36	3.10	2.52	2.68
F&D Costs (1-Year)	21.80	23.82	21.39	45.76	35.31	47.65	39.88	55.85	14.10	6.03	13.65	9.52	25.90
Return on Capital	13.75	13.81	13.21	34.12	23.29	36.71	31.29	27.60	8.26	3.89	10.70	6.38	16.79
Income Taxes	13.89	14.27	17.12	21.17	21.92	33.56	26.04	11.47	3.79	1.79	4.58	2.86	8.47
Breakeven Oil Price	**73.76**	**74.12**	**74.86**	**135.45**	**113.34**	**155.78**	**132.32**	**123.62**	**63.23**	**39.43**	**54.59**	**49.38**	**82.21**
Quality Differential	18.00	7.62	10.62	15.13	16.53	3.83	8.27	6.52	6.93	9.01	11.24	9.06	8.39
Required Brent Price	**91.76**	**81.73**	**85.48**	**150.58**	**129.87**	**159.61**	**140.60**	**130.13**	**70.16**	**48.43**	**65.83**	**58.44**	**90.60**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.70	13.88	14.49	20.96	21.83	24.18	23.61	19.03	21.35	20.04	21.12	20.85	20.96
Exploration Expense	6.08	6.37	6.52	10.65	8.49	10.02	8.21	7.11	13.53	5.31	1.44	7.25	7.41
G&A/Other	2.53	1.96	2.12	2.79	2.49	3.66	3.29	2.56	2.20	2.36	3.10	2.52	2.68
F&D Costs (1-Year)	26.21	19.32	37.38	72.84	32.36	72.38	48.10	27.51	16.49	14.70	20.92	17.06	25.54
Return on Capital	16.51	11.23	23.10	54.15	21.35	55.20	37.14	13.60	9.65	9.49	16.24	11.44	16.57
Income Taxes	16.67	11.61	29.94	33.61	20.10	50.45	30.90	5.65	4.43	4.35	6.96	5.13	8.36
Breakeven Oil Price	**83.70**	**64.37**	**113.55**	**195.00**	**106.63**	**215.89**	**151.25**	**75.45**	**67.66**	**56.25**	**69.77**	**64.24**	**81.51**
Quality Differential	18.00	7.62	10.62	15.13	16.53	3.83	8.27	6.52	6.93	9.01	11.24	9.06	8.39
Required Brent Price	**101.70**	**71.99**	**124.17**	**210.13**	**123.16**	**219.72**	**159.52**	**81.97**	**74.59**	**65.26**	**81.01**	**73.30**	**89.91**

Source: BMO Capital Markets, Company Reports

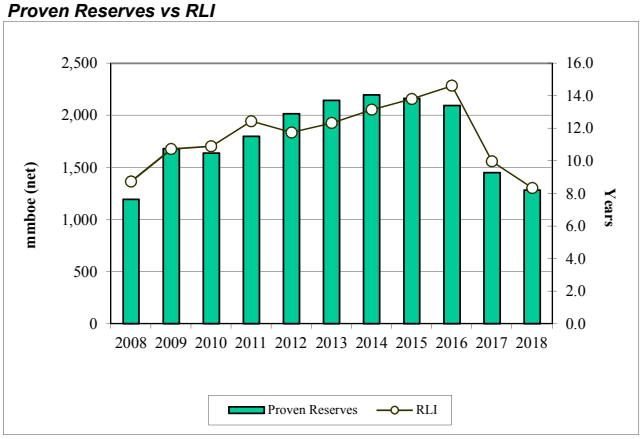
See pages F1 to F4 for analyst coverage.

Marathon Oil Corporation (MRO - NYSE) US$, net

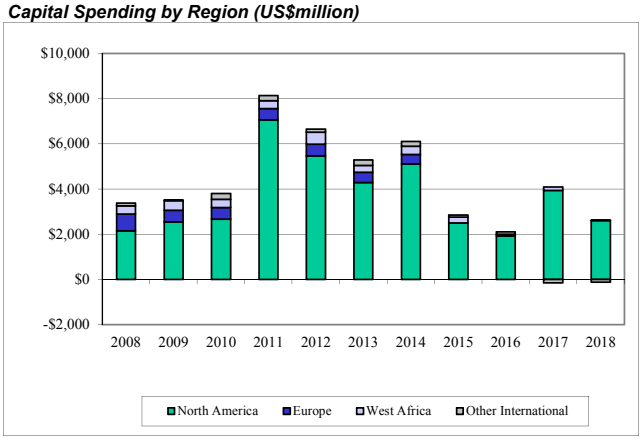
- Marathon reported results of operations of $7.84/boe in 2018 versus $0.96/boe last year.
- The company reported reserve replacement costs of $13.42/boe in 2018 versus $20.54/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $19.50/boe versus $25.15/boe last year, while the costs for PD reserves declined to $17.85/boe from $25.08/boe.
- Marathon's 2018 costs imply a required Brent breakeven oil price of $79.33/boe on a realized ratio basis, while its PD costs imply a Brent breakeven oil price of $68.77/boe.
- The company reported ROCE of 7.6% in 2018 versus a normalized 2017 loss on capital of 2.0%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

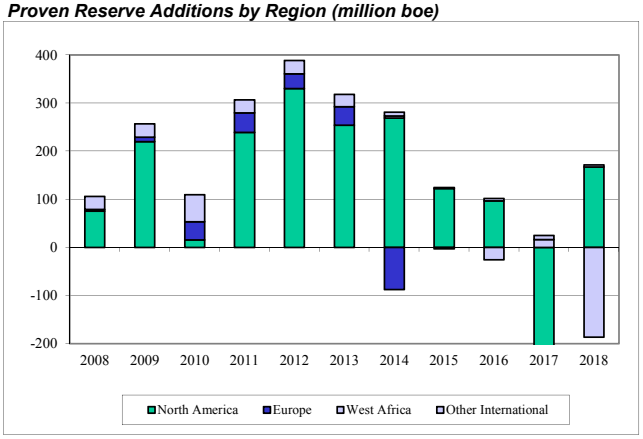
Proven Reserves vs RLI



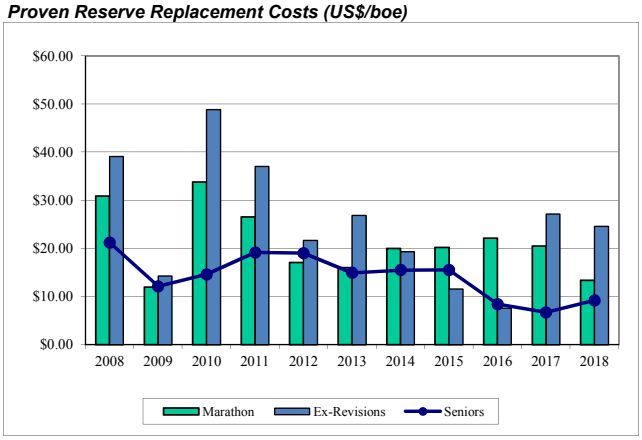
Capital Spending by Region (US$million)



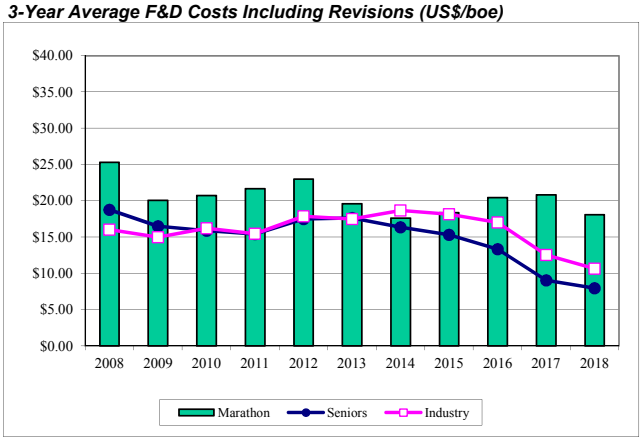
Proven Reserve Additions by Region (million boe)



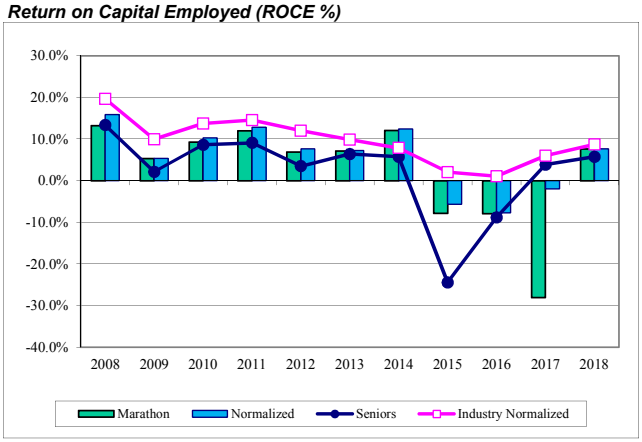
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

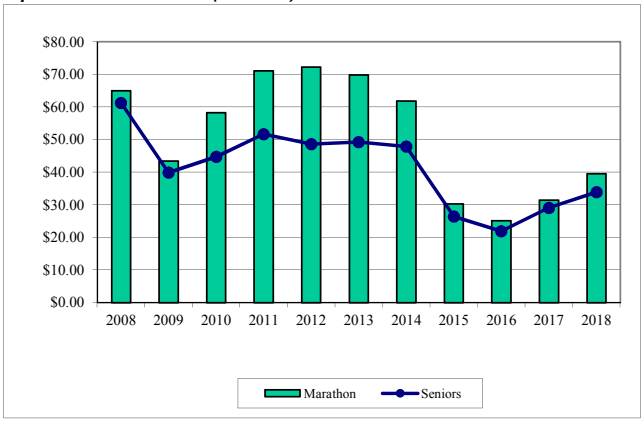
See pages F1 to F4 for analyst coverage.

Marathon Oil Corporation (MRO - NYSE)

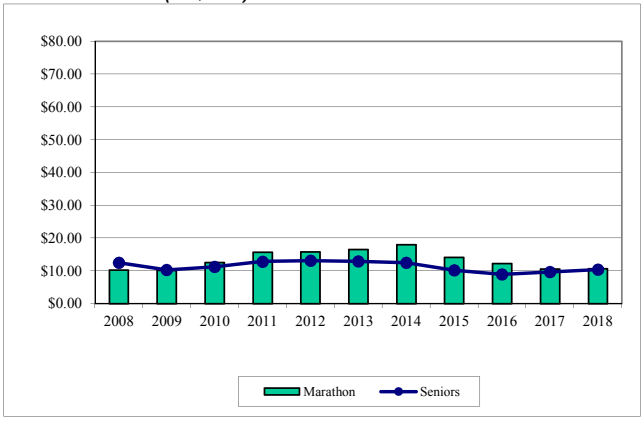
US$/boe, net

Worldwide

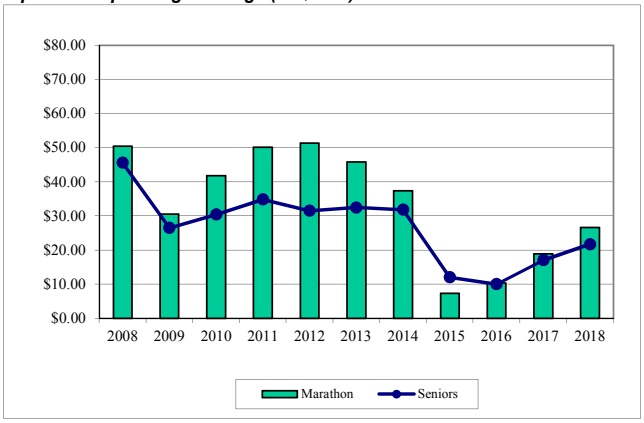
Upstream Net Revenue (US$/boe)



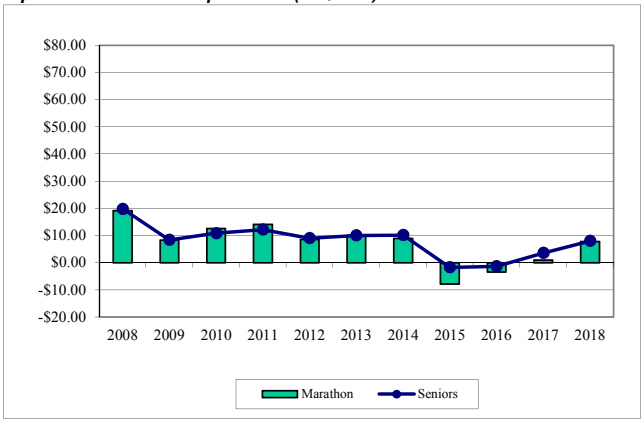
Production Costs (US$/boe)



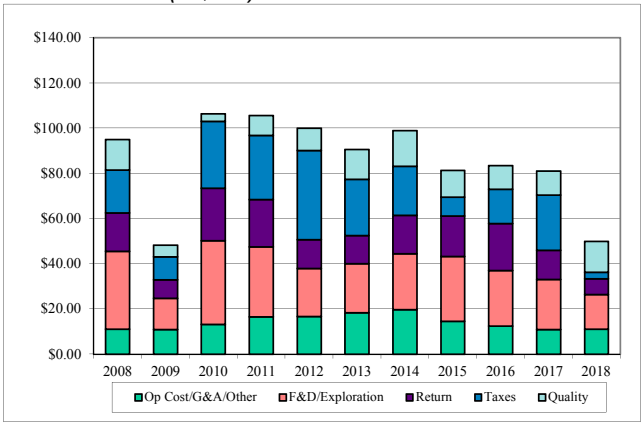
Upstream Operating Earnings (US$/boe)



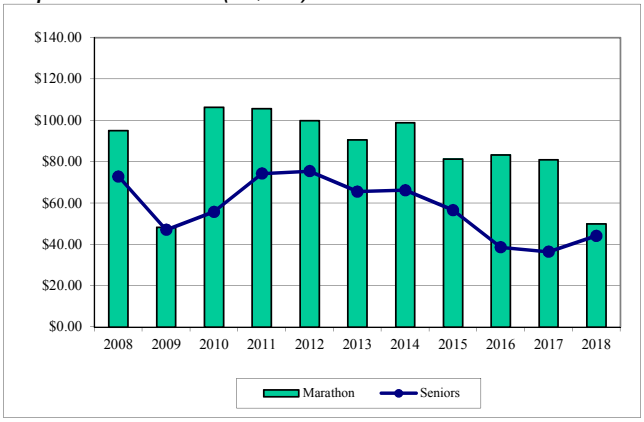
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

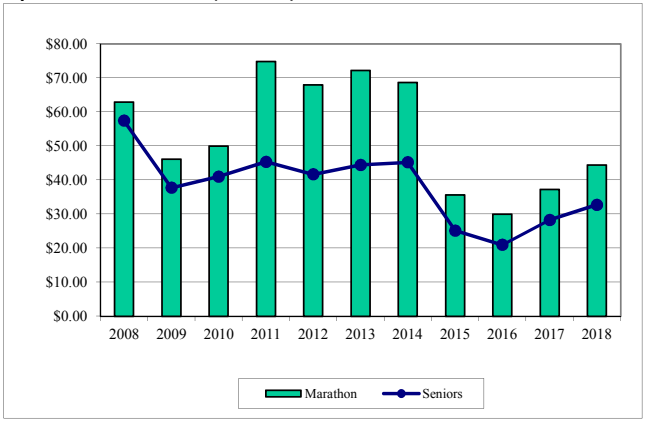
See pages F1 to F4 for analyst coverage.

Marathon Oil Corporation (MRO - NYSE)

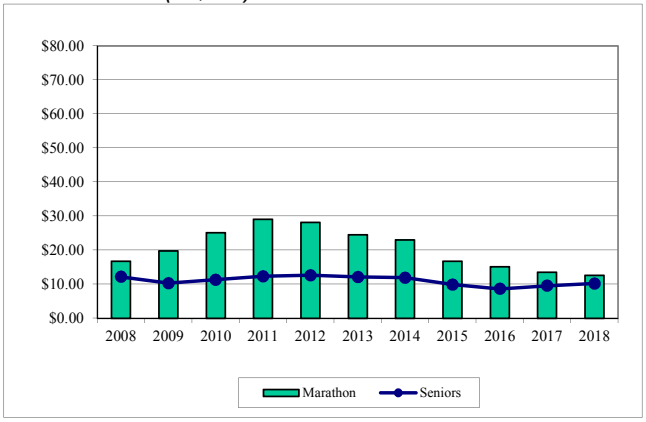
US$/boe, net

North America

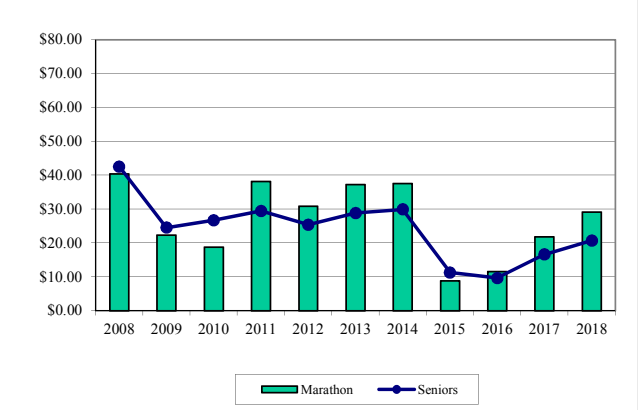
Upstream Net Revenue (US$/boe)



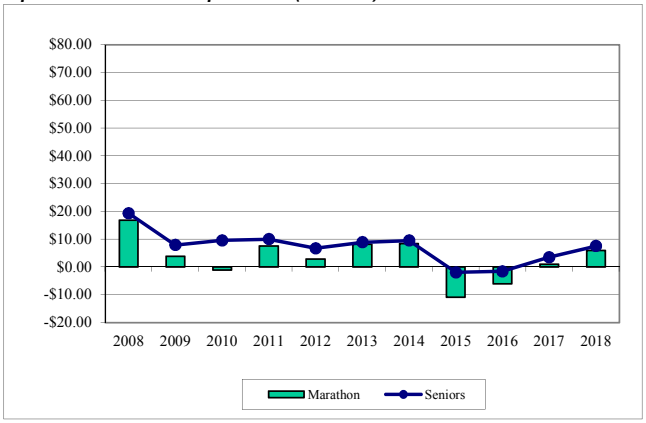
Production Costs (US$/boe)



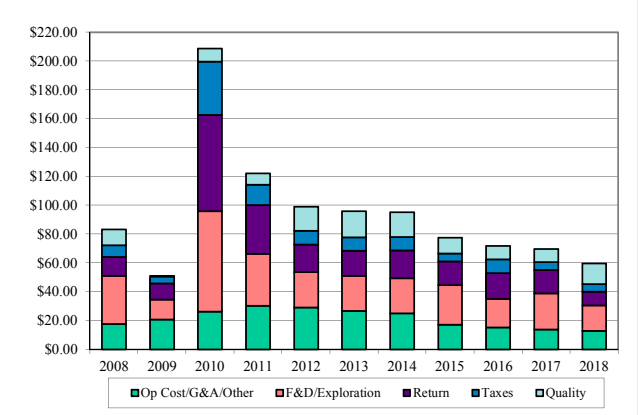
Upstream Operating Earnings (US$/boe)



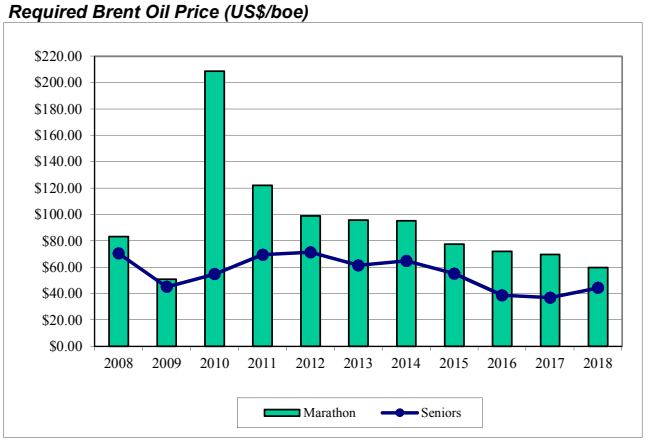
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



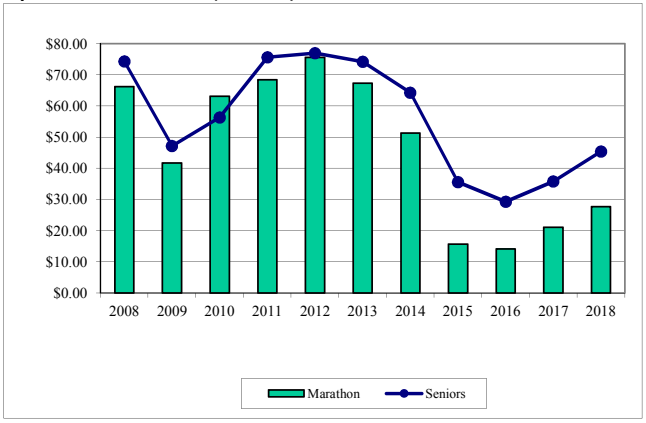
Source: BMO Capital Markets, Company Reports

Marathon Oil Corporation (MRO - NYSE)

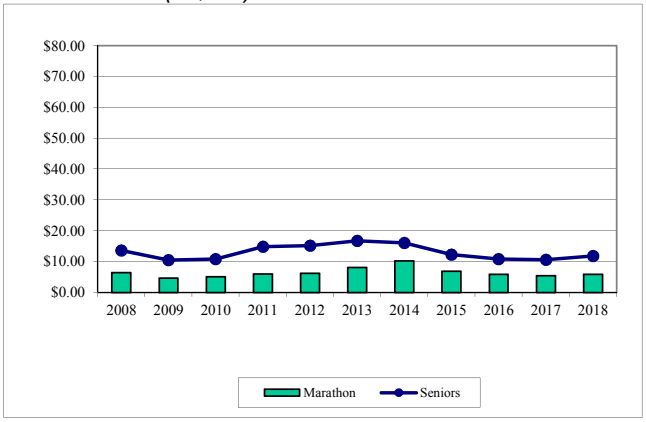
US$/boe, net

Total International

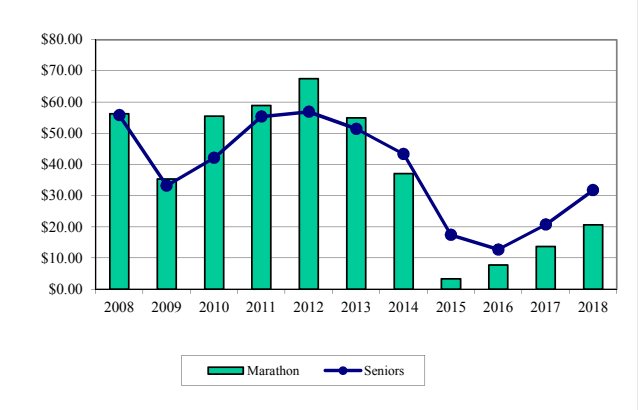
Upstream Net Revenue (US$/boe)



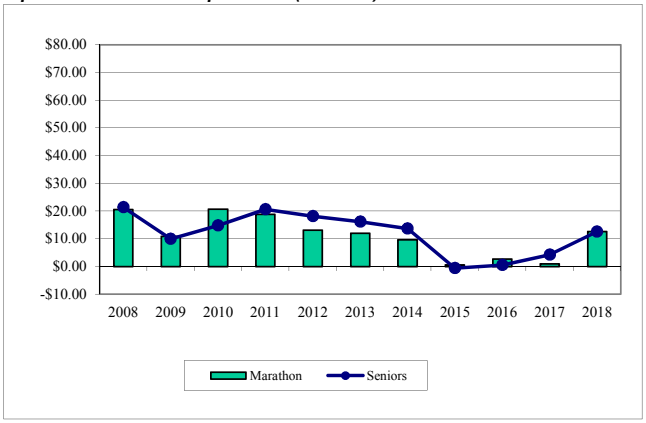
Production Costs (US$/boe)



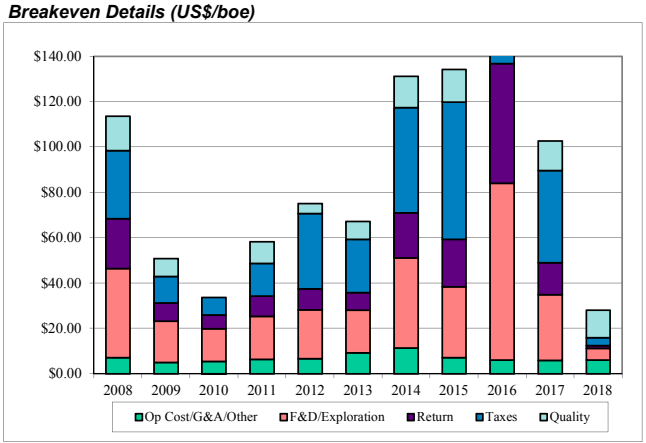
Upstream Operating Earnings (US$/boe)



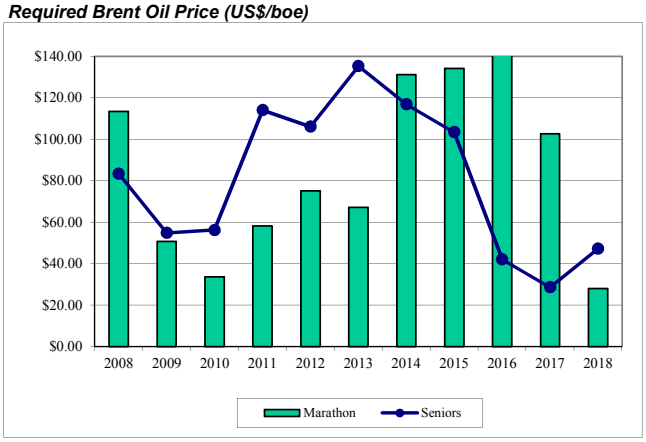
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



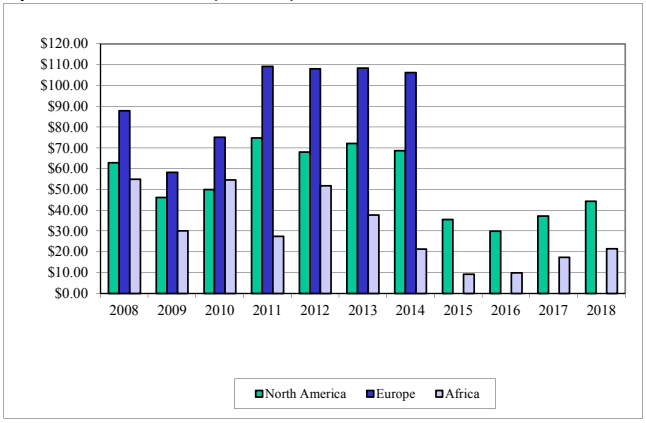
Source: BMO Capital Markets, Company Reports

Marathon Oil Corporation (MRO - NYSE)

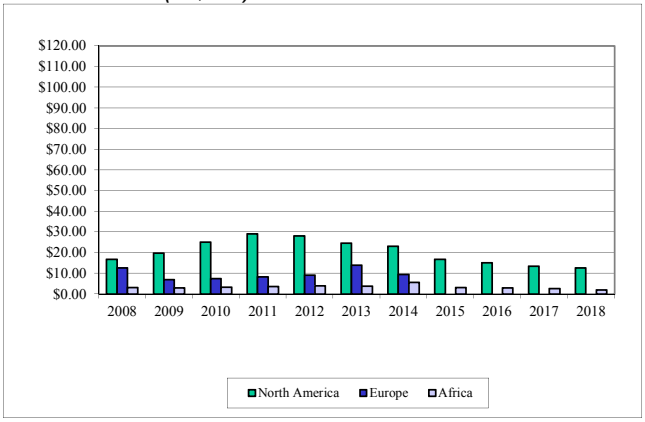
US$/boe, net

International Segments

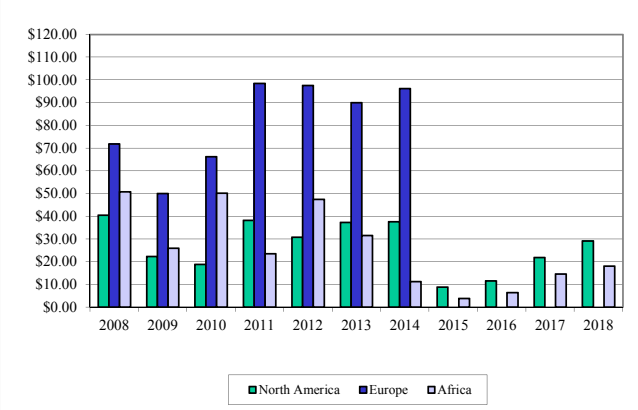
Upstream Net Revenue (US$/boe)



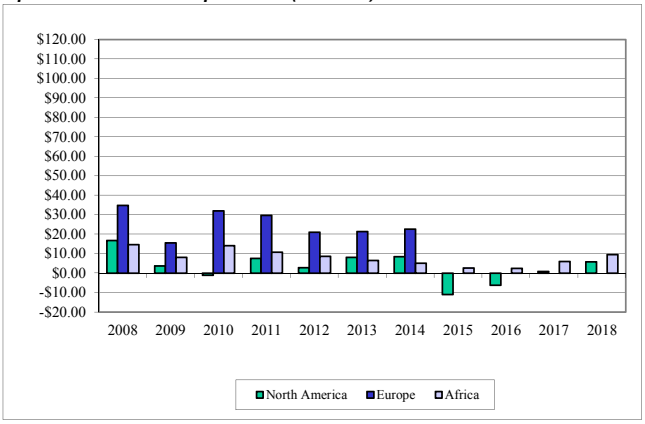
Production Costs (US$/boe)



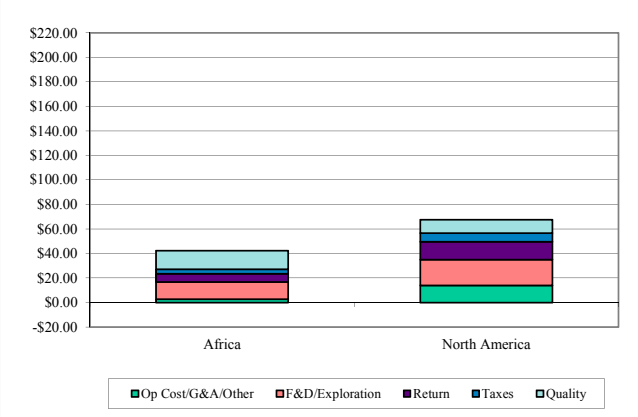
Upstream Operating Earnings (US$/boe)



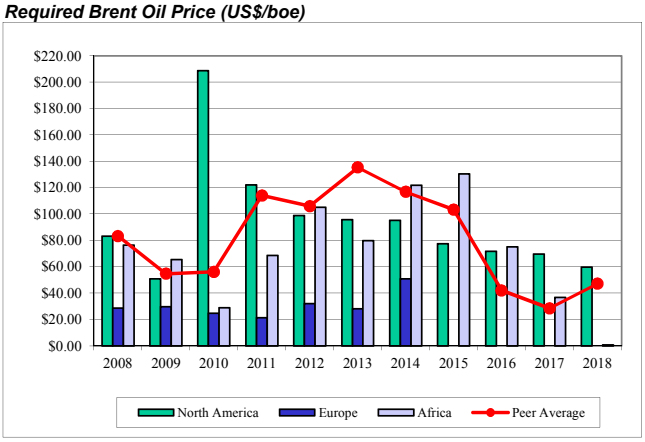
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Marathon Oil Corporation (MRO - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	12,486	7,921	9,723	10,750	12,963	12,419	8,736	4,951	3,753	4,211	5,888
Midstream / Downstream Revenue	62,828	45,452	62,481	3,919	2,729	2,082	2,110	571	278	162	-
Other	3,255	766	1,417	613	529	458	412	339	619	392	694
Total Revenue and Other Income	78,569	54,139	73,621	15,282	16,221	14,959	11,258	5,861	4,650	4,765	6,582
Crude Oil and Product Purchases	59,817	40,560	56,734	6,225	2,744	2,072	2,105	569	282	168	-
Production and Transportation Expenses	715	485	624	250	2,875	3,122	3,114	2,366	1,992	1,320	1,716
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	490	307	498	644	706	988	793	1,318	330	409	289
General and Administrative	1,387	1,263	1,363	544	699	687	654	590	484	400	394
Depreciation, Depletion and Amortization	2,178	2,623	2,965	2,266	2,477	2,790	2,861	2,957	2,395	2,372	2,441
Interest, net	50	149	195	386	219	274	238	267	335	270	226
Other	6,959	5,311	6,120	540	371	96	132	752	67	280	89
Earnings Before Income Tax	6,973	3,441	5,122	4,427	6,130	4,930	1,361	(2,958)	(1,235)	(454)	1,427
Current Income Taxes	3,352	1,185	3,154	2,902	4,727	3,397	304	52	94	437	279
Future Income Taxes	93	1,072	(600)	(182)	(210)	(60)	88	(806)	811	(61)	52
Total Income Taxes	3,445	2,257	2,554	2,720	4,517	3,337	392	(754)	905	376	331
Minority Interest	-	-	-	-						-	-
Earnings From Continuing Operations	3,528	1,184	2,568	1,707	1,613	1,593	969	(2,204)	(2,140)	(830)	1,096
Discontinued Operations/Extraordinary Items	-	279	-	1,239	(31)	160	2,077	-	-	(4,893)	
Cumulative Change in Accounting Principle	-	-	-	-	-	-				-	-
Net Earnings	3,528	1,463	2,568	2,946	1,582	1,753	3,046	(2,204)	(2,140)	(5,723)	1,096
Preferred Stock Dividends	-	-	-	-	-	-				-	-
Net Earnings to Common Shareholders	3,528	1,463	2,568	2,946	1,582	1,753	3,046	(2,204)	(2,140)	(5,723)	1,096

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	3,528	1,184	2,568	1,707	1,613	1,593	969	(2,204)	(2,140)	(830)	1,096
Charges and Credits Not Impacting Cash	2,441	3,776	2,590	2,441	2,724	3,528	3,704	4,117	3,500	2,863	2,823
Other	962	(322)	(140)	1,687	194	182	83	(86)	(203)	99	(553)
Cash Flow From Operations	6,931	4,638	5,018	5,835	4,531	5,303	4,756	1,827	1,157	2,132	3,366
Change in Working Capital / Other	(149)	630	855	689	(514)	(33)	731	(262)	(84)	(144)	(132)
Net Cash From Operating Activities	6,782	5,268	5,873	6,524	4,017	5,270	5,487	1,565	1,073	1,988	3,234
Upstream Spending	(4,151)	(3,277)	(3,348)	(3,346)	(4,835)	(4,766)	(5,160)	(3,476)	(1,245)	(1,974)	(2,753)
Midstream / Downstream Spending	(2,995)	(2,954)	(1,414)	51	(105)	-	-	-	-	-	
Acquisitions, net	999	865	2,131	(4,470)	(1,033)	376	3,739	225	1,219	(104)	1,239
Other	712	128	10	98	534	(131)	(325)	49	(848)	34	44
Net Cash From Investing Activities	(5,435)	(5,238)	(2,621)	(7,667)	(5,439)	(4,521)	(1,746)	(3,202)	(874)	(2,044)	(1,470)
Net Change in Debt	(126)	1,410	(665)	(2,877)	2,031	(247)	(203)	908	(1)	(1,822)	-
Net Change in Common Stock	(393)	4	-	(300)	-	(500)	(1,000)	-	1,236	(11)	(713)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-			
Cash Dividends Paid	(681)	(679)	(704)	(567)	(480)	(508)	(543)	(460)	(162)	(170)	(169)
Other	7	(11)	11	1,449	49	93	153	14	1	-	23
Net Cash From Financing Activities	(1,193)	724	(1,358)	(2,295)	1,600	(1,162)	(1,593)	462	1,074	(2,003)	(859)
Effect of Exchange Rate on Cash	(68)	18	-	(20)	13	(7)	(14)	(2)	(4)	4	(2)
Net Increase/(Decrease) in Cash	86	772	1,894	(3,458)	191	(420)	2,134	(1,177)	1,269	(1,925)	899
Cash and Equivalents, Beginning of Year	1,199	1,285	2,057	3,951	493	684	264	2,398	1,221	2,488	563
Cash and Equivalents, End of Year	1,285	2,057	3,951	493	684	264	2,398	1,221	2,490	563	1,462

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Marathon Oil Corporation (MRO - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	8,403	10,637	13,829	3,224	3,762	2,975	4,593	2,590	3,665	2,566	2,921
Net Property, Plant and Equipment	29,414	32,121	32,222	25,324	28,272	28,145	29,040	27,061	25,718	17,665	16,804
Other Assets	4,869	4,294	3,963	2,823	3,272	4,500	2,378	2,660	1,711	1,781	1,596
Total Assets	42,686	47,052	50,014	31,371	35,306	35,620	36,011	32,311	31,094	22,012	21,321
Total Current Liabilities	7,753	9,057	11,113	4,394	5,081	4,333	4,379	1,729	2,240	1,968	1,832
Long-term Debt	7,087	8,436	7,601	4,674	6,512	6,394	5,323	7,276	6,589	5,494	5,499
Deferred Income Taxes	3,330	4,104	3,569	2,544	2,432	2,492	2,486	2,441	2,438	833	(194)
Other Liabilities and Deferred Credits	3,107	3,545	3,960	2,600	2,998	3,057	2,803	2,312	2,286	2,009	2,056
Total Liabilities	21,277	25,142	26,243	14,212	17,023	16,276	14,991	13,758	13,553	10,304	9,193
Minority Interests	-	-	-	7	-	-	-	-	-	-	-
Common Shares	767	769	770	770	770	770	770	770	937	937	937
Contributed Surplus (Paid-in Capital)	6,696	6,738	6,756	6,680	6,616	6,592	6,531	6,498	7,446	7,379	7,238
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	17,259	18,043	19,907	12,788	13,890	15,135	17,638	14,974	12,672	6,779	7,706
Other / Comprehensive Income (Loss)	(3,313)	(3,640)	(3,662)	(3,086)	(2,993)	(3,153)	(3,919)	(3,689)	(3,514)	(3,387)	(3,753)
Total Shareholders' Equity	21,409	21,910	23,771	17,152	18,283	19,344	21,020	18,553	17,541	11,708	12,128
Total Liabilities and Shareholders' Equity	42,686	47,052	50,014	31,371	35,306	35,620	36,011	32,311	31,094	22,012	21,321
Return on Capital Employed (ROCE)	**13.2%**	**5.3%**	**9.3%**	**12.0%**	**6.9%**	**7.1%**	**12.1%**	**-7.8%**	**-7.9%**	**-28.1%**	**7.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	8,901	6,793	8,757	10,290	12,400	12,140	10,343	4,740	3,597	4,575	6,078	14,250	29,333
Production Costs	1,404	1,593	1,886	2,268	2,719	2,869	3,014	2,211	1,753	1,537	1,631	4,921	10,146
Exploration	490	307	498	644	729	988	798	1,318	330	236	289	855	2,971
DD&A	1,328	1,860	1,982	2,467	2,759	2,763	2,870	2,949	2,326	2,344	2,399	7,069	12,888
G&A/Other	106	101	90	114	126	305	281	60	31	54	60	145	486
Pre-tax Results Of Operations	5,573	2,932	4,301	4,797	6,067	5,215	3,380	-1,798	-843	404	1,699	1,260	2,842
Income Taxes	2,948	1,639	2,413	2,756	4,587	3,469	1,891	-570	-354	265	495	406	1,727
Results Of Operations	2,625	1,293	1,888	2,041	1,480	1,746	1,489	-1,228	-489	139	1,204	854	1,115

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	3,166	2,647	2,808	4,555	5,132	6,429	6,988	4,074	2,973	3,473	4,842	11,288	22,350
Production Costs	845	1,134	1,411	1,768	2,126	2,185	2,347	1,919	1,496	1,257	1,371	4,124	8,390
Exploration	238	169	280	388	595	725	608	1,098	313	153	245	711	2,417
DD&A	671	972	1,149	1,667	2,010	2,198	2,548	2,689	2,073	1,916	2,172	6,161	11,398
G&A/Other	49	62	61	77	83	206	208	49	22	28	49	99	356
Pre-tax Results Of Operations	1,363	310	-93	655	318	1,115	1,277	-1,681	-931	119	1,005	193	-211
Income Taxes	516	93	-33	194	106	389	420	-430	-325	29	361	66	55
Results Of Operations	847	217	-60	461	212	726	857	-1,251	-606	90	644	127	-266

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	5,735	4,146	5,949	5,735	7,268	5,711	3,355	666	624	1,102	1,236	2,962	6,983
Production Costs	559	459	475	500	593	684	667	292	257	280	260	797	1,756
Exploration	252	138	218	256	134	263	190	220	17	83	44	144	554
DD&A	657	888	833	800	749	565	322	260	253	428	227	908	1,490
G&A/Other	57	39	29	37	43	99	73	11	9	26	11	46	130
Pre-tax Results Of Operations	4,210	2,622	4,394	4,142	5,749	4,100	2,103	-117	88	285	694	1,067	3,053
Income Taxes	2,432	1,546	2,446	2,562	4,481	3,080	1,471	-140	-29	235	134	341	1,672
Results Of Operations	1,778	1,076	1,948	1,580	1,268	1,020	632	23	117	50	560	726	1,381

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Marathon Oil Corporation (MRO - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$65.05	$43.41	$58.25	$71.13	$72.23	$69.84	$61.87	$30.26	$25.10	$31.48	$39.60	$32.23	$38.29
Production Costs	$10.26	$10.18	$12.55	$15.68	$15.84	$16.50	$18.03	$14.11	$12.23	$10.58	$10.63	$11.13	$13.25
Exploration	$3.58	$1.96	$3.31	$4.45	$4.25	$5.68	$4.77	$8.41	$2.30	$1.62	$1.88	$1.93	$3.88
DD&A	$9.71	$11.88	$13.18	$17.05	$16.07	$15.89	$17.17	$18.82	$16.23	$16.13	$15.63	$15.99	$16.83
G&A/Other	$0.77	$0.65	$0.60	$0.79	$0.73	$1.75	$1.68	$0.38	$0.22	$0.37	$0.39	$0.33	$0.63
Pre-tax Results Of Operations	$40.73	$18.73	$28.61	$33.16	$35.34	$30.00	$20.22	-$11.48	-$5.88	$2.78	$11.07	$2.85	$3.71
Income Taxes	$21.54	$10.47	$16.05	$19.05	$26.72	$19.96	$11.31	-$3.64	-$2.47	$1.82	$3.23	$0.92	$2.25
Results Of Operations	$19.18	$8.26	$12.56	$14.11	$8.62	$10.04	$8.91	-$7.84	-$3.41	$0.96	$7.84	$1.93	$1.46

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$62.90	$46.17	$49.99	$74.88	$67.97	$72.24	$68.62	$35.63	$29.98	$37.28	$44.42	$37.46	$43.19
Production Costs	$16.79	$19.78	$25.12	$29.06	$28.16	$24.55	$23.05	$16.78	$15.09	$13.49	$12.58	$13.69	$16.21
Exploration	$4.73	$2.95	$4.99	$6.38	$7.88	$8.15	$5.97	$9.60	$3.16	$1.64	$2.25	$2.36	$4.67
DD&A	$13.33	$16.95	$20.46	$27.40	$26.62	$24.70	$25.02	$23.52	$20.90	$20.57	$19.93	$20.45	$22.03
G&A/Other	$0.97	$1.08	$1.09	$1.27	$1.10	$2.31	$2.04	$0.43	$0.22	$0.30	$0.45	$0.33	$0.69
Pre-tax Results Of Operations	$27.08	$5.41	-$1.66	$10.77	$4.21	$12.53	$12.54	-$14.70	-$9.39	$1.28	$9.22	$0.64	-$0.41
Income Taxes	$10.25	$1.62	-$0.59	$3.19	$1.40	$4.37	$4.12	-$3.76	-$3.27	$0.32	$3.31	$0.22	$0.11
Results Of Operations	$16.83	$3.78	-$1.07	$7.58	$2.81	$8.16	$8.42	-$10.94	-$6.11	$0.96	$5.91	$0.42	-$0.51

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$66.30	$41.81	$63.18	$68.41	$75.58	$67.32	$51.35	$15.73	$14.13	$21.12	$27.78	$21.03	$28.10
Production Costs	$6.46	$4.63	$5.04	$5.96	$6.17	$8.06	$10.21	$6.90	$5.82	$5.37	$5.84	$5.66	$7.07
Exploration	$2.91	$1.39	$2.32	$3.05	$1.39	$3.10	$2.91	$5.20	$0.38	$1.59	$0.99	$1.02	$2.23
DD&A	$7.60	$8.95	$8.85	$9.54	$7.79	$6.66	$4.93	$6.14	$5.73	$8.20	$5.10	$6.45	$6.00
G&A/Other	$0.66	$0.39	$0.31	$0.44	$0.45	$1.17	$1.12	$0.26	$0.20	$0.50	$0.25	$0.33	$0.52
Pre-tax Results Of Operations	$48.67	$26.44	$46.66	$49.41	$59.78	$48.33	$32.19	-$2.76	$1.99	$5.46	$15.60	$7.58	$12.29
Income Taxes	$28.12	$15.59	$25.98	$30.56	$46.60	$36.31	$22.52	-$3.31	-$0.66	$4.51	$3.02	$2.42	$6.73
Results Of Operations	$20.55	$10.85	$20.69	$18.85	$13.19	$12.02	$9.67	$0.54	$2.65	$0.95	$12.58	$5.16	$5.56

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$87.80	$58.29	$75.05	$109.17	$108.07	$108.36	$106.28	na	na	na	na	na	na
Production Costs	$12.60	$7.05	$7.55	$8.33	$9.13	$13.96	$9.44	na	na	na	na	na	na
Exploration	$2.93	$0.90	$0.81	$1.93	$1.02	$3.45	$0.26	na	na	na	na	na	na
DD&A	$17.07	$17.95	$17.47	$16.31	$14.91	$12.34	$5.48	na	na	na	na	na	na
G&A/Other	$0.50	$0.32	$0.51	$0.45	$0.41	$1.01	$0.37	na	na	na	na	na	na
Pre-tax Results Of Operations	$54.70	$32.07	$48.71	$82.14	$82.59	$77.61	$90.73	na	na	na	na	na	na
Income Taxes	$19.93	$16.54	$16.73	$52.45	$61.63	$56.19	$68.05	na	na	na	na	na	na
Results Of Operations	$34.77	$15.54	$31.98	$29.69	$20.96	$21.42	$22.68	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$54.88	$30.19	$54.66	$27.49	$51.84	$37.71	$21.43	$9.33	$9.97	$17.39	$21.57	$16.37	$16.14
Production Costs	$3.20	$2.92	$3.25	$3.59	$3.95	$3.78	$5.71	$3.19	$3.01	$2.71	$2.07	$2.61	$3.34
Exploration	$0.83	$1.26	$1.24	$0.26	$0.35	$1.38	$3.16	$2.14	$0.39	$0.00	$1.32	$0.53	$1.35
DD&A	$2.55	$2.61	$2.66	$2.75	$2.45	$2.54	$2.50	$2.69	$3.12	$3.29	$3.23	$3.22	$2.98
G&A/Other	$0.09	$0.07	-$0.02	$0.07	$0.13	$1.00	$1.27	$0.22	$0.18	$0.17	$0.13	$0.16	$0.40
Pre-tax Results Of Operations	$48.21	$23.33	$47.53	$20.82	$44.96	$29.00	$8.79	$1.08	$3.27	$11.22	$14.82	$9.86	$8.07
Income Taxes	$33.49	$15.16	$33.45	$10.09	$36.35	$22.41	$3.65	-$1.50	$0.72	$5.26	$5.20	$3.83	$2.84
Results Of Operations	$14.73	$8.17	$14.08	$10.73	$8.62	$6.59	$5.14	$2.58	$2.55	$5.95	$9.62	$6.03	$5.23

Source: BMO Capital Markets, Company Reports

Marathon Oil Corporation (MRO - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	983.6	961.6	860.3	849.3	882.2	852.1	808.2	783.6	761.6	827.4	863.0	817.4	808.8
Liquids Production (b/d)	210,959	268,493	268,493	254,795	323,288	334,247	323,288	298,630	265,753	260,274	276,712	267,580	284,932
Total Production (boe/d)	374,886	428,767	411,872	396,347	470,320	476,256	457,991	429,224	392,694	398,174	420,548	403,805	419,726
% Gas Production	44%	37%	35%	36%	31%	30%	29%	30%	32%	35%	34%	34%	32%
% Oil Production	56%	63%	65%	64%	69%	70%	71%	70%	68%	65%	66%	66%	68%
Proven Reserves:													
Gas Reserves (bcf)	3,351.0	2,724.0	2,617.0	2,666.0	2,779.0	2,671.0	2,580.0	2,462.0	2,446.0	2,369.0	2,275.0	2,363.3	2,426.4
Oil Reserves (mmbbls)	636.0	1,225.0	1,202.0	1,356.0	1,554.0	1,698.0	1,768.0	1,753.0	1,688.0	1,054.0	902.0	1,214.7	1,433.0
Total Proven Reserves (mmboe)	1,194.5	1,679.0	1,638.2	1,800.3	2,017.2	2,143.2	2,198.0	2,163.3	2,095.7	1,448.8	1,281.2	1,608.6	1,837.4
% Gas Reserves	47%	27%	27%	25%	23%	21%	20%	19%	19%	27%	30%	24%	22%
% Oil Reserves	53%	73%	73%	75%	77%	79%	80%	81%	81%	73%	70%	76%	78%
Proven Reserve Life Index	8.7	10.7	10.9	12.4	11.8	12.3	13.1	13.8	14.6	10.0	8.3	11.0	12.0
Proven Reserve Additions:													
Gas Additions (bcf)	260.0	-276.0	207.0	359.0	435.0	203.0	204.0	168.0	262.0	225.0	221.0	708.0	1,080.0
Oil Additions (mmbbls)	63.0	303.0	75.0	247.0	316.0	284.0	160.0	94.0	32.0	-539.0	-51.0	(558.0)	(304.0)
Total Additions (mmboe)	106.3	257.0	109.5	306.8	388.5	317.8	194.0	122.0	75.7	-501.5	-14.2	-440.0	-124.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	86.5	77.7	76.8	111.0	236.8	180.2	270.0	245.7	243.8	116.7	102.0	462.5	978.2
Acquisitions	0.0	168.0	1.2	108.8	69.5	16.7	45.8	0.2	34.2	29.0	0.0	63.2	109.2
Dispositions	(3.0)	(37.0)	(3.3)	-	-	(12.7)	(111.3)	(18.5)	(19.7)	(694.3)	(201.0)	(915.0)	(1,044.8)
Revisions of Estimates	22.8	48.3	34.8	87.0	82.2	133.7	-10.5	-105.3	-182.7	47.2	84.8	(50.7)	(166.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	81.3%	30.2%	70.2%	36.2%	61.0%	56.7%	139.2%	201.4%	322.2%	-23.3%	-720.0%	-105.1%	-788.8%
Acquisitions	0.0%	65.4%	1.1%	35.5%	17.9%	5.2%	23.6%	0.1%	45.2%	-5.8%	0.0%	-14.4%	-88.0%
Dispositions	-2.8%	-14.4%	-3.0%	0.0%	0.0%	-4.0%	-57.4%	-15.2%	-26.0%	138.5%	1418.8%	208.0%	842.6%
Revisions of Estimates	21.5%	18.8%	31.8%	28.4%	21.1%	42.1%	-5.4%	-86.3%	-241.4%	-9.4%	-598.8%	11.5%	134.3%
Additions as % of Production:													
Gas	72.4%	-78.6%	65.9%	115.8%	135.1%	65.3%	69.2%	58.7%	94.2%	74.5%	70.2%	79.1%	73.2%
Oil	81.8%	309.2%	76.5%	265.6%	267.8%	232.8%	135.6%	86.2%	33.0%	-567.4%	-50.5%	-190.4%	-58.5%
Total	77.7%	164.2%	72.8%	212.1%	226.3%	182.8%	116.1%	77.9%	52.8%	-345.1%	-9.2%	-99.5%	-16.2%
Additions as % of Reserves:													
Gas	7.8%	-10.1%	7.9%	13.5%	15.7%	7.6%	7.9%	6.8%	10.7%	9.5%	9.7%	30.0%	44.5%
Oil	9.9%	24.7%	6.2%	18.2%	20.3%	16.7%	9.0%	5.4%	1.9%	-51.1%	-5.7%	-45.9%	-21.2%
Total	8.9%	15.3%	6.7%	17.0%	19.3%	14.8%	8.8%	5.6%	3.6%	-34.6%	-1.1%	-27.4%	-6.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$1,009.0	$519.0	$671.0	$1,134.0	$1,856.0	$1,134.0	$1,423.0	$1,108.0	$539.0	$1,022.0	$922.0	$2,483.0	$5,014.0
Development	$1,898.0	$2,833.0	$2,714.0	$1,882.0	$3,527.0	$3,867.0	$4,395.0	$1,671.0	$666.0	$999.0	$1,219.0	$2,884.0	$8,950.0
Acquisitions	$473.0	$162.0	$427.0	$5,124.0	$1,264.0	$291.0	$287.0	$66.0	$908.0	$1,939.0	$367.0	$3,214.0	$3,567.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$3,380.0	$3,514.0	$3,812.0	$8,140.0	$6,647.0	$5,292.0	$6,105.0	$2,845.0	$2,113.0	$3,960.0	$2,508.0	$8,581.0	$17,531.0
Expenditures as % of Total:													
Exploration	29.9%	14.8%	17.6%	13.9%	27.9%	21.4%	23.3%	38.9%	25.5%	25.8%	36.8%	28.9%	28.6%
Development	56.2%	80.6%	71.2%	23.1%	53.1%	73.1%	72.0%	58.7%	31.5%	25.2%	48.6%	33.6%	51.1%
Acquisitions	14.0%	4.6%	11.2%	62.9%	19.0%	5.5%	4.7%	2.3%	43.0%	49.0%	14.6%	37.5%	20.3%
Cashflow (US$million)	$4,475.0	$3,016.0	$3,801.1	$4,967.6	$4,754.7	$5,434.6	$5,581.6	$2,429.7	$1,849.7	$2,676.2	$3,969.6	$8,495.5	$16,506.8
Cashflow (US$/boe)	$32.70	$19.27	$25.28	$34.34	$27.70	$31.26	$33.39	$15.51	$12.91	$18.41	$25.86	$19.21	$21.55
Recycle Ratio	1.1x	1.6x	0.7x	1.3x	1.6x	2.0x	1.7x	0.8x	0.6x	0.9x	1.9x	1.1x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$26.59	$26.60	$30.31	$15.23	$16.87	$15.94	$22.42	$19.80	$19.70	$12.34	$11.46	$13.03	$17.20
Acquisition Costs	na	$0.96	$366.00	$47.08	$18.19	$17.46	$6.26	$396.00	$26.58	$66.86	na	$50.88	$32.67
All Sources (incl. revisions)	$30.91	$11.95	$33.78	$26.53	$17.11	$16.01	$19.99	$20.25	$22.16	$20.54	$13.42	$18.07	$19.04
Exploration & Development (excl. revisions)	$33.61	$43.16	$44.06	$27.17	$22.73	$27.76	$21.55	$11.31	$4.94	$17.32	$20.99	$11.60	$14.28
Acquisition Costs	na	$0.96	$366.00	$47.08	$18.19	$17.46	$6.26	$396.00	$26.58	$66.86	na	$50.88	$32.67
All Sources (excl. revisions)	$39.08	$14.30	$48.87	$37.03	$21.70	$26.89	$19.33	$11.57	$7.60	$27.19	$24.59	$16.32	$16.12
Geographically Segmented Costs													
North America	$28.51	$10.78	$140.79	$29.56	$16.58	$16.08	$18.35	$17.74	$16.54	$23.56	$15.27	$18.65	$18.40
Europe	$113.85	$17.33	$13.60	$12.44	$17.21	$11.79	$29.31	na	na	na	na	na	$29.31
West Africa	$13.25	$14.98	$6.59	$12.70	$18.71	$12.36	$83.54	$112.29	-$2.71	$9.24	$1.63	$360.00	$117.82
Other International	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Marathon Oil Corporation (MRO - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	10.26	10.18	12.55	15.68	15.84	16.50	18.03	14.11	12.23	10.58	10.63	11.13	13.25
Exploration Expense	3.58	1.96	3.31	4.45	4.25	5.68	4.77	8.41	2.30	1.62	1.88	1.93	3.88
G&A/Other	0.77	0.65	0.60	0.79	0.73	1.75	1.68	0.38	0.22	0.37	0.39	0.33	0.63
F&D Costs	30.91	11.95	33.78	26.53	17.11	16.01	19.99	20.25	22.16	20.54	13.42	18.07	19.04
Return on Capital	16.89	8.08	23.18	21.00	12.71	12.53	17.01	17.96	20.92	12.82	6.98	12.48	14.36
Income Taxes	18.97	10.24	29.62	28.35	39.41	24.90	21.60	8.34	15.12	24.40	2.87	10.44	11.68
Breakeven Oil Price	81.40	43.06	103.04	96.79	90.05	77.38	83.08	69.45	72.96	70.33	36.18	54.38	62.84
Quality Differential	13.59	5.15	3.30	8.82	9.85	13.15	15.80	11.81	10.39	10.61	13.76	11.59	12.48
Required Brent Price	94.99	48.22	106.34	105.62	99.90	90.53	98.89	81.25	83.35	80.94	49.94	65.97	75.31

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	16.79	19.78	25.12	29.06	28.16	24.55	23.05	16.78	15.09	13.49	12.58	13.69	16.21
Exploration Expense	4.73	2.95	4.99	6.38	7.88	8.15	5.97	9.60	3.16	1.64	2.25	2.36	4.67
G&A/Other	0.97	1.08	1.09	1.27	1.10	2.31	2.04	0.43	0.22	0.30	0.45	0.33	0.69
F&D Costs	28.51	10.78	64.72	29.56	16.58	16.08	18.35	17.74	16.54	23.56	15.27	18.65	18.40
Return on Capital	13.22	11.14	66.92	33.86	19.03	17.37	19.25	16.44	17.94	16.26	9.47	14.66	16.00
Income Taxes	8.05	4.78	36.80	14.25	9.52	9.31	9.42	5.65	9.61	5.36	5.31	6.85	7.12
Breakeven Oil Price	72.27	50.51	199.63	114.37	82.26	77.77	78.08	66.65	62.55	60.61	45.32	56.53	63.10
Quality Differential	10.99	0.49	9.04	7.78	16.75	18.06	17.11	10.87	9.38	9.18	14.43	11.00	12.20
Required Brent Price	83.26	51.00	208.67	122.15	99.01	95.84	95.19	77.53	71.93	69.80	59.75	67.53	75.30

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	6.46	4.63	5.04	5.96	6.17	8.06	10.21	6.90	5.82	5.37	5.84	5.66	7.07
Exploration Expense	2.91	1.39	2.32	3.05	1.39	3.10	2.91	5.20	0.38	1.59	0.99	1.02	2.23
G&A/Other	0.66	0.39	0.31	0.44	0.45	1.17	1.12	0.26	0.20	0.50	0.25	0.33	0.52
F&D Costs	36.33	16.72	12.12	15.86	20.12	15.73	36.88	25.96	77.69	27.41	4.06	36.39	34.40
Return on Capital	22.01	8.12	6.18	8.91	9.38	7.76	19.94	20.94	52.73	14.05	1.21	17.56	18.97
Income Taxes	30.10	11.66	7.76	14.44	33.14	23.43	46.44	60.68	152.79	40.69	3.49	50.87	52.53
Breakeven Oil Price	98.47	42.92	33.73	48.67	70.65	59.24	117.49	119.93	289.63	89.60	15.84	111.82	115.72
Quality Differential	15.11	7.85	(0.13)	9.58	4.43	7.99	13.77	14.32	12.66	13.17	12.13	12.65	13.21
Required Brent Price	113.57	50.77	33.60	58.25	75.08	67.24	131.26	134.25	302.29	102.77	27.96	124.47	128.93

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	-	7.05	7.55	8.33	9.13	13.96	9.44	na	na	na	na	na	na
Exploration Expense	-	0.90	0.81	1.93	1.02	3.45	0.26	na	na	na	na	na	na
G&A/Other	-	0.32	0.51	0.45	0.41	1.01	0.37	na	na	na	na	na	na
F&D Costs	-	17.33	13.60	12.44	17.21	11.79	29.31	na	na	na	na	na	na
Return on Capital	-	3.51	2.85	2.45	3.23	2.47	6.71	na	na	na	na	na	na
Income Taxes	-	3.74	1.49	4.33	9.50	6.49	20.13	na	na	na	na	na	na
Breakeven Oil Price	-	32.85	26.81	29.94	40.51	39.17	66.23	na	na	na	na	na	na
Quality Differential	-	(3.01)	(2.03)	(8.55)	(8.27)	(10.93)	(15.24)	na	na	na	na	na	na
Required Brent Price	-	29.84	24.78	21.39	32.24	28.24	50.99	na	na	na	na	na	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	-	2.92	3.25	3.59	3.95	3.78	5.71	3.19	3.01	2.71	2.07	2.61	3.34
Exploration Expense	-	1.26	1.24	0.26	0.35	1.38	3.16	2.14	0.39	-	1.32	0.53	1.35
G&A/Other	-	0.07	(0.02)	0.07	0.13	1.00	1.27	0.22	0.18	0.17	0.13	0.16	0.40
F&D Costs	-	14.98	6.59	12.70	18.71	12.36	43.44	29.37	29.37	9.24	1.63	13.41	18.09
Return on Capital	-	10.75	4.95	12.50	13.17	9.02	36.02	25.98	20.95	4.93	0.48	6.87	11.59
Income Taxes	-	19.96	11.76	11.75	55.53	30.69	25.56	51.66	5.92	4.36	0.26	3.65	8.54
Breakeven Oil Price	-	49.93	27.76	40.86	91.82	58.23	115.16	112.56	59.82	21.41	5.89	27.23	43.30
Quality Differential	-	15.51	1.23	27.79	13.36	21.56	29.46	17.98	15.33	15.51	14.71	15.18	18.60
Required Brent Price	-	65.44	29.00	68.65	105.18	79.79	144.62	130.55	75.16	36.92	20.60	42.41	61.90

Source: BMO Capital Markets, Company Reports

Marathon Oil Corporation (MRO - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.61	14.02	17.14	22.10	21.32	21.88	23.69	18.39	16.31	14.55	14.78	15.21	17.77
Exploration Expense	5.10	2.70	4.52	6.27	5.72	7.54	6.27	10.96	3.07	2.23	2.62	2.64	5.20
G&A/Other	1.10	0.89	0.82	1.11	0.99	2.33	2.21	0.50	0.29	0.51	0.54	0.45	0.85
F&D Costs (1-Year)	43.07	11.52	45.53	31.53	20.21	18.11	23.45	25.79	19.52	25.15	19.50	21.76	22.68
Return on Capital	35.95	9.61	37.99	26.26	16.87	14.96	19.56	21.50	16.30	20.98	16.12	18.17	18.93
Income Taxes	40.37	12.18	48.55	35.45	52.29	29.73	24.84	9.98	11.78	39.93	6.63	15.20	15.40
Breakeven Oil Price	**140.21**	**50.93**	**154.55**	**122.72**	**117.41**	**94.55**	**100.02**	**87.12**	**67.27**	**103.36**	**60.19**	**73.43**	**80.84**
Quality Differential	19.35	7.10	4.50	12.44	13.26	17.43	20.77	15.38	13.86	14.61	19.14	15.87	16.75
Required Brent Price	**159.56**	**58.04**	**159.06**	**135.16**	**130.66**	**111.99**	**120.79**	**102.49**	**81.13**	**117.97**	**79.33**	**89.30**	**97.59**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.61	14.02	17.14	22.10	21.32	21.88	23.69	18.39	16.31	14.55	14.78	15.21	17.77
Exploration Expense	5.10	2.70	4.52	6.27	5.72	7.54	6.27	10.96	3.07	2.23	2.62	2.64	5.20
G&A/Other	1.10	0.89	0.82	1.11	0.99	2.33	2.21	0.50	0.29	0.51	0.54	0.45	0.85
F&D Costs (1-Year)	25.02	7.60	24.54	27.90	35.13	22.80	37.67	21.77	34.96	25.08	17.85	23.91	27.46
Return on Capital	13.25	5.70	18.40	25.09	28.56	19.79	35.35	21.74	37.97	17.02	9.81	18.26	23.16
Income Taxes	14.89	7.23	23.52	33.88	88.53	39.33	44.89	10.09	27.45	32.39	4.04	15.27	18.84
Breakeven Oil Price	**73.98**	**38.14**	**88.94**	**116.35**	**180.25**	**113.66**	**150.08**	**83.44**	**120.04**	**91.79**	**49.63**	**75.75**	**93.30**
Quality Differential	19.35	7.10	4.50	12.44	13.26	17.43	20.77	15.38	13.86	14.61	19.14	15.87	16.75
Required Brent Price	**93.33**	**45.24**	**93.44**	**128.79**	**193.51**	**131.10**	**170.85**	**98.82**	**133.90**	**106.39**	**68.77**	**91.61**	**110.05**

Source: BMO Capital Markets, Company Reports

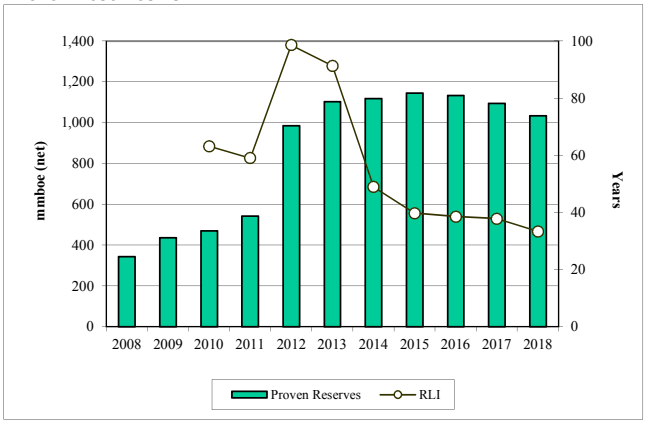
MEG Energy Corp. (MEG - TSX)

US$, net

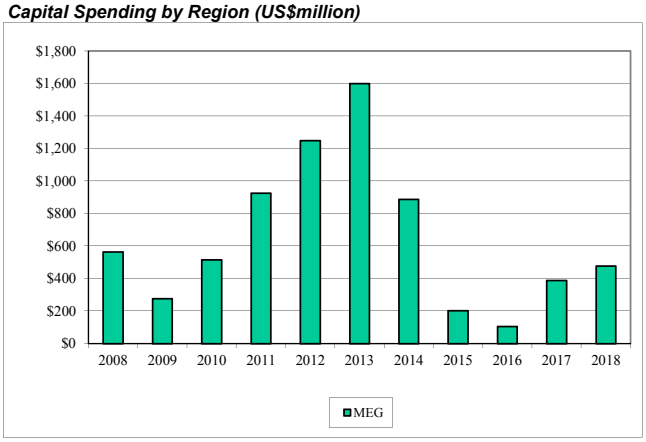
- MEG reported results of operations of $7.28/boe in 2018 versus $8.57/boe last year.
- The company's one-year costs were non-meaningful due to negative reserve. Three-year average F&D costs came in at $9.19/boe. Costs for PD reserves were recorded at $9.96/boe compared to $9.54/boe in 2017.
- MEG's 2018 costs imply a required Brent breakeven oil price of $73.31/boe on total proved reserves, while its PD costs imply a Brent breakeven of $75.98/boe.
- The company reported ROCE of 1.1% in 2018 versus 8.7% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

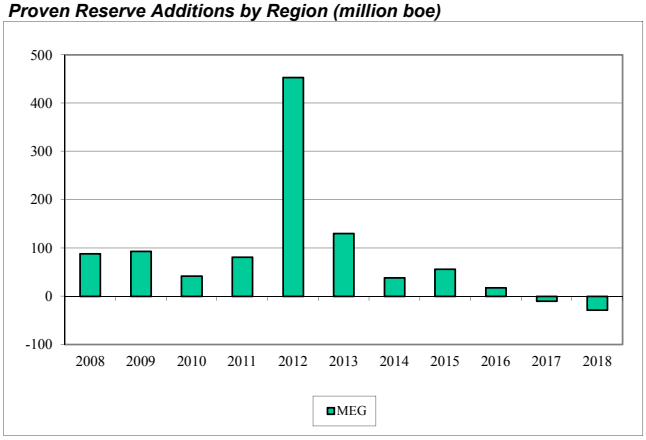
Proven Reserves vs RLI



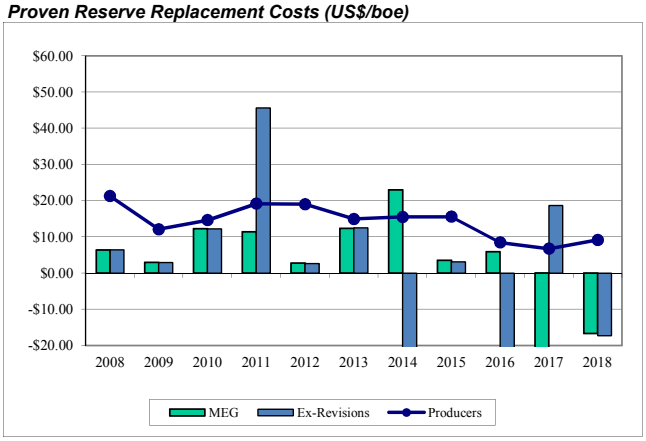
Capital Spending by Region (US$million)



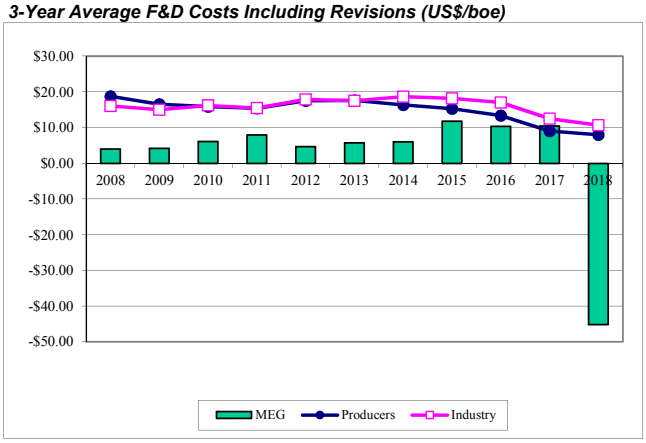
Proven Reserve Additions by Region (million boe)



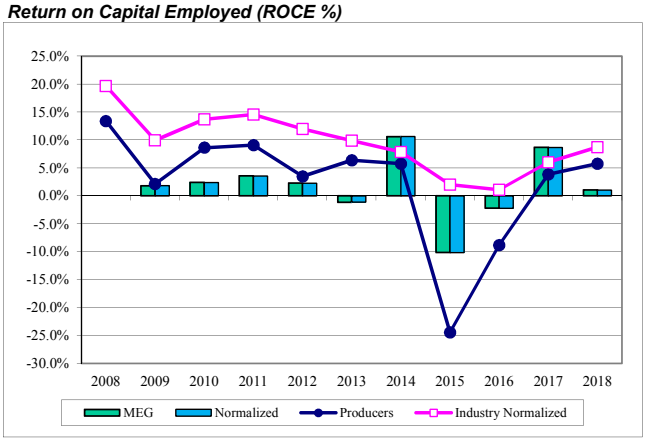
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Notes: Reserve estimates reported after royalties; *We use DD&A/bbl as a proxy for oil sands F&D costs given the large timing difference between capital spending and additions; Syncrude reserves as reported by Petro-Canada
Source: BMO Capital Markets, Company Reports

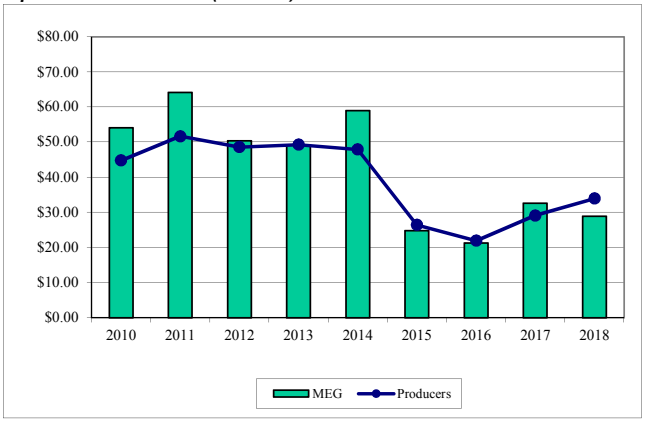
See pages F1 to F4 for analyst coverage.

MEG Energy Corp. (MEG - TSX)

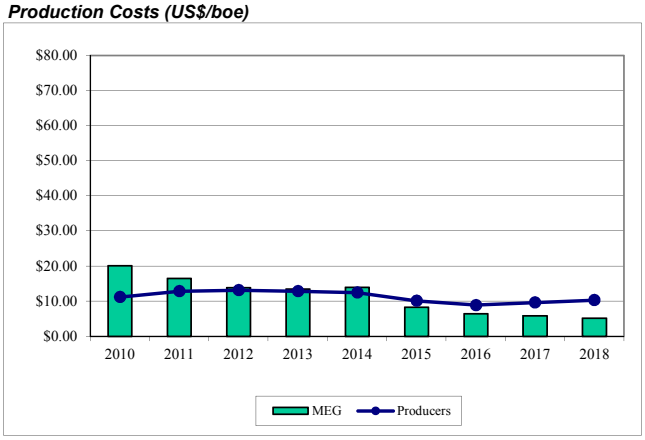
US$, net

North America

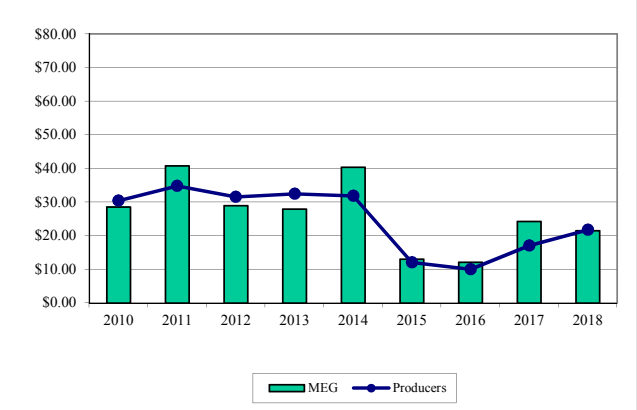
Upstream Net Revenue (US$/boe)



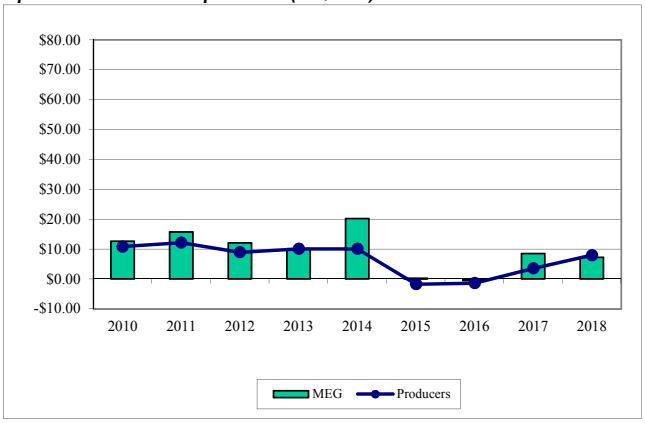
Production Costs (US$/boe)



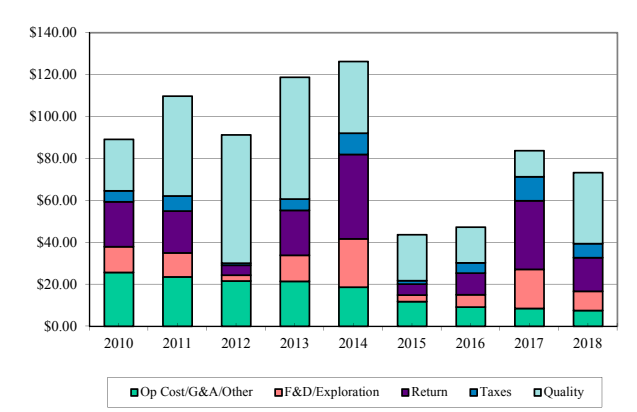
Upstream Operating Earnings (US$/boe)



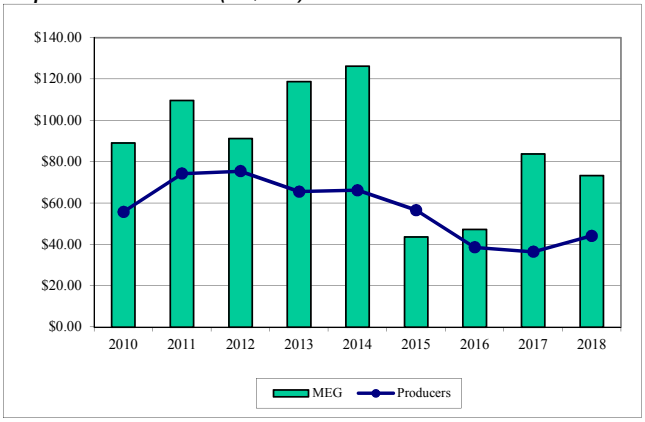
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

MEG Energy Corp. (MEG - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	21	709	1,045	1,000	1,234	2,485	1,475	1,377	1,850	2,063
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	2	8	19	20	62	78	34	33	27	46
Total Revenue and Other Income	-	23	717	1,064	1,020	1,296	2,563	1,508	1,410	1,877	2,109
Crude Oil and Product Purchases	-	8	306	456	497	707	1,260	924	922	1,087	1,409
Production and Transportation Expenses	-	14	170	165	142	163	318	240	192	171	162
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	1	-	1
General and Administrative	-	21	35	56	71	90	101	93	73	67	64
Depreciation, Depletion and Amortization	-	3	121	126	145	184	343	366	378	367	349
Interest, net	-	4	43	124	74	76	170	197	268	278	221
Other	-	(60)	(7)	26	29	217	389	676	58	(177)	34
Earnings Before Income Tax	-	33	48	111	62	(140)	(18)	(988)	(481)	85	(130)
Current Income Taxes	-	-	-	-	-	-	-	-	1	(0)	1
Future Income Taxes	-	(12)	9	46	10	22	78	(72)	(157)	(43)	(38)
Total Income Taxes	-	(12)	9	46	10	22	78	(72)	(157)	(43)	(38)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	45	39	65	53	(162)	(96)	(916)	(324)	128	(92)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	45	39	65	53	(162)	(96)	(916)	(324)	128	(92)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	45	39	65	53	(162)	(96)	(916)	(324)	128	(92)

Note: Converted to US$ from CAD
Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	45	39	65	53	(162)	(96)	(916)	(324)	128	(92)
Charges and Credits Not Impacting Cash	-	(10)	131	172	155	205	421	295	220	324	311
Other	-	(90)	(47)	63	5	202	375	648	52	(187)	(88)
Cash Flow From Operations	-	(55)	123	300	213	246	700	27	(52)	264	130
Change in Working Capital / Other	-	2	(49)	18	28	(120)	(5)	61	(19)	(19)	86
Net Cash From Operating Activities	-	(53)	74	318	241	126	695	88	(71)	245	216
Total Capital Expenditures	-	(303)	(471)	(940)	(1,599)	(2,125)	(1,190)	(241)	(93)	(391)	(479)
Acquisitions, net	-	-	-	-	7	(34)	(1)	86	2	4	1,164
Other	-	(73)	10	116	(230)	417	2	(172)	(9)	75	(28)
Net Cash From Investing Activities	-	(376)	(461)	(823)	(1,822)	(1,743)	(1,189)	(327)	(99)	(312)	657
Net Change in Debt	-	286	(10)	730	783	1,271	(13)	(13)	(13)	(10)	(992)
Net Change in Common Stock	-	-	-	40	796	31	10	-	-	383	1
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	784	653	(4)	(6)	(8)	(9)	-	-	(74)	-
Net Cash From Financing Activities	-	1,069	643	767	1,573	1,294	(12)	(13)	(13)	299	(991)
Effect of Exchange Rate on Cash	-	(4)	(1)	12	(13)	35	32	58	(7)	5	5
Net Increase/(Decrease) in Cash	-	636	254	273	(20)	(287)	(474)	(194)	(190)	237	(113)
Cash and Equivalents, Beginning of Year	-	212	935	1,239	1,496	1,432	1,068	514	308	120	358
Cash and Equivalents, End of Year	-	848	1,190	1,513	1,476	1,145	594	320	118	357	245

Note: Converted to US$ from CAD
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

MEG Energy Corp. (MEG - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	973	1,452	1,813	2,138	1,452	894	479	347	647	584
Net Property, Plant and Equipment	-	2,770	3,413	4,411	5,826	7,609	7,956	6,702	6,185	6,310	5,553
Other Assets	-	18	7	49	60	115	144	181	207	263	354
Total Assets	-	3,761	4,872	6,273	8,024	9,176	8,994	7,362	6,740	7,220	6,491
Total Current Liabilities	-	101	150	320	481	437	418	194	274	405	360
Long-term Debt	-	907	942	1,762	2,480	3,876	3,940	4,065	3,818	3,600	2,976
Deferred Income Taxes	-	13	22	69	71	91	161	69	-	-	-
Other Liabilities and Deferred Credits	-	13	19	92	118	122	156	154	165	158	156
Total Liabilities	-	1,034	1,133	2,243	3,150	4,525	4,675	4,481	4,257	4,163	3,492
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	2,764	3,711	3,922	4,697	4,615	4,345	3,788	3,686	4,167	4,189
Contributed Surplus (Paid-in Capital)	-	49	69	87	102	123	139	135	127	128	131
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	(73)	(41)	22	74	(90)	(178)	(1,070)	(1,356)	(1,256)	(1,351)
Other / Comprehensive Income (Loss)	-	(13)	-	-	0	3	12	28	26	17	30
Total Shareholders' Equity	-	2,727	3,739	4,031	4,874	4,651	4,319	2,880	2,483	3,057	2,999
Total Liabilities and Shareholders' Equity	-	3,761	4,872	6,273	8,024	9,176	8,994	7,362	6,740	7,220	6,491
Return on Equity Employed (ROCE)	**-**	**1.8%**	**2.4%**	**3.6%**	**2.3%**	**-1.1%**	**10.6%**	**-10.1%**	**-2.2%**	**8.7%**	**1.1%**

Note: Converted to US$ from CAD
Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	21	52	403	589	503	595	1,346	715	626	944	896	2,466	4,528
Production Costs	63	73	150	152	139	163	318	240	192	171	162	525	1,084
Exploration	-	-	-	-	-	-	-	-	-	-	-	-	-
DD&A	0	3	95	126	145	184	343	366	378	367	349	1,093	1,802
G&A/Other	22	26	41	63	76	96	106	99	77	71	68	216	421
Pre-tax Results Of Operations	(65)	(48)	117	248	143	153	579	11	(20)	334	317	631	1,221
Income Taxes	(16)	(10)	23	104	23	31	116	3	(7)	87	92	172	290
Results Of Operations	(49)	(39)	95	144	121	122	463	8	(14)	248	225	459	930

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	21	52	403	589	503	595	1,346	715	626	944	896	2,466	4,528
Production Costs	63	73	150	152	139	163	318	240	192	171	162	525	1,084
Exploration	-	-	-	-	-	-	-	-	-	-	-	-	-
DD&A	0	3	95	126	145	184	343	366	378	367	349	1,093	1,802
G&A/Other	22	26	41	63	76	96	106	99	77	71	68	216	421
Pre-tax Results Of Operations	(65)	(48)	117	248	143	153	579	11	(20)	334	317	631	1,221
Income Taxes	(16)	(10)	23	104	23	31	116	3	(7)	87	92	172	290
Results Of Operations	(49)	(39)	95	144	121	122	463	8	(14)	248	225	459	930

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Converted to US$ from CAD
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

MEG Energy Corp. (MEG - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	nm	nm	$54.13	$64.17	$50.40	$49.27	$58.96	$24.81	$21.27	$32.62	$28.95	$27.57	$32.11
Production Costs	nm	nm	$20.16	$16.54	$13.93	$13.49	$13.94	$8.33	$6.52	$5.92	$5.23	$5.88	$7.68
Exploration	nm	nm	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	nm	nm	$12.77	$13.70	$14.52	$15.22	$15.01	$12.69	$12.83	$12.67	$11.27	$12.24	$12.78
G&A/Other	nm	nm	$5.45	$6.89	$7.59	$7.92	$4.66	$3.42	$2.61	$2.47	$2.20	$2.42	$2.99
Pre-tax Results Of Operations	nm	nm	$15.75	$27.04	$14.36	$12.64	$25.34	$0.37	-$0.69	$11.56	$10.25	$7.03	$8.66
Income Taxes	nm	nm	$3.04	$11.30	$2.26	$2.53	$5.07	$0.09	-$0.23	$2.99	$2.98	$1.93	$2.06
Results Of Operations	nm	nm	$12.70	$15.74	$12.11	$10.11	$20.28	$0.27	-$0.47	$8.57	$7.28	$5.10	$6.60

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	nm	nm	$54.13	$64.17	$50.40	$49.27	$58.96	$24.81	$21.27	$32.62	$28.95	$35.98	$39.82
Production Costs	nm	nm	$20.16	$16.54	$13.93	$13.49	$13.94	$8.33	$6.52	$5.92	$5.23	$7.68	$11.90
Exploration	nm	nm	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	nm	nm	$12.77	$13.70	$14.52	$15.22	$15.01	$12.69	$12.83	$12.67	$11.27	$15.98	$23.57
G&A/Other	nm	nm	$5.45	$6.89	$7.59	$7.92	$4.66	$3.42	$2.61	$2.47	$2.20	$3.16	$4.90
Pre-tax Results Of Operations	nm	nm	$15.75	$27.04	$14.36	$12.64	$25.34	$0.37	-$0.69	$11.56	$10.25	$9.16	-$0.55
Income Taxes	nm	nm	$3.04	$11.30	$2.26	$2.53	$5.07	$0.09	-$0.23	$2.99	$2.98	$2.49	$2.51
Results Of Operations	nm	nm	$12.70	$15.74	$12.11	$10.11	$20.28	$0.27	-$0.47	$8.57	$7.28	$6.66	-$3.06

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Converted to US Dollars
Source: BMO Capital Markets, Company Reports

MEG Energy Corp. (MEG - TSX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	-	-	-	-	-	-	-	-
Liquids Production (b/d)	1,051	2,176	20,394	25,146	27,364	33,067	62,563	79,003	80,606	79,286	84,821	54,702	64,743
Total Production (boe/d)	1,051	2,176	20,394	25,146	27,364	33,067	62,563	79,003	80,606	79,286	84,821	54,702	64,743
% Gas Production	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Production	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Gas Reserves (bcf)	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Reserves (mmbbls)	343.9	436.0	470.5	542.1	985.3	1,102.9	1,118.6	1,146.0	1,134.2	1,094.8	1,035.2	710.0	882.0
Total Proven Reserves (mmboe)	343.9	436.0	470.5	542.1	985.3	1,102.9	1,118.6	1,146.0	1,134.2	1,094.8	1,035.2	710.0	882.0
% Gas Reserves	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	896.7	549.0	63.2	59.1	98.7	91.4	49.0	39.7	38.6	37.8	33.4	23.8	29.9
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	-	-	-	-	-	-	-	-	-
Oil Additions (mmbbls)	87.7	92.9	41.9	80.8	453.2	129.7	38.5	56.2	17.6	-10.5	-28.6	(39.1)	34.8
Total Additions (mmboe)	87.7	92.9	41.9	80.8	453.2	129.7	38.5	56.2	17.6	-10.5	-28.6	(39.1)	34.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	87.7	92.9	41.9	20.3	464.0	128.1	-12.5	54.0	-0.9	20.8	-27.6	(6.9)	46.3
Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Dispositions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Revisions of Estimates	0.0	0.0	0.0	60.5	-10.8	1.5	51.0	2.2	18.5	-31.2	-1.0	(32.2)	(11.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	100.0%	100.0%	100.0%	25.1%	102.4%	98.8%	-32.4%	96.1%	-4.9%	-198.4%	96.5%	17.6%	133.1%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Dispositions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	0.0%	0.0%	0.0%	74.9%	-2.4%	1.2%	132.4%	3.9%	104.9%	298.4%	3.5%	82.4%	-33.1%
Additions as % of Production:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	22879.3%	11700.0%	563.5%	880.1%	4537.4%	1074.3%	168.8%	195.0%	59.9%	-36.1%	-92.5%	-65.3%	29.4%
Total	22879.3%	11700.0%	563.5%	880.1%	4537.4%	1074.3%	168.8%	195.0%	59.9%	-36.1%	-92.5%	-65.3%	29.4%
Additions as % of Reserves:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	25.5%	21.3%	8.9%	14.9%	46.0%	11.8%	3.4%	4.9%	1.6%	-1.0%	-2.8%	-5.5%	3.9%
Total	25.5%	21.3%	8.9%	14.9%	46.0%	11.8%	3.4%	4.9%	1.6%	-1.0%	-2.8%	-5.5%	3.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$24.5	$5.6	$25.1	$94.9	$128.0	$90.3	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Development	$534.2	$270.5	$391.6	$830.8	$1,121.1	$1,509.7	$887.7	$201.4	$103.7	$387.7	$477.6	$865.3	$1,170.4
Acquisitions	$4.2	$0.1	$98.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$562.9	$276.2	$514.7	$925.7	$1,249.2	$1,600.0	$887.7	$201.4	$103.7	$387.7	$477.6	$865.3	$1,170.4
Expenditures as % of Total:													
Exploration	4.3%	2.0%	4.9%	10.3%	10.2%	5.6%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Development	94.9%	97.9%	76.1%	89.7%	89.8%	94.4%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Acquisitions	0.7%	0.0%	19.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-$64.5	-$54.8	$122.6	$299.7	$212.6	$246.1	$700.2	$26.8	-$52.1	$264.1	$130.2	$394.3	$368.9
Cashflow (US$/boe)	nm	nm	$16.47	$32.65	$21.29	$20.39	$30.66	$0.93	-$1.77	$9.12	$4.21	$6.58	$3.12
Recycle Ratio	nm	nm	1.3x	2.8x	7.7x	1.7x	1.3x	0.3x	-0.3x	-0.2x	-0.3x	-0.3x	0.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$6.37	$2.97	$9.93	$11.46	$2.76	$12.34	$23.04	$3.58	$5.88	-$37.06	-$16.68	-$22.13	$33.67
Acquisition Costs	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	$6.42	$2.97	$12.27	$11.46	$2.76	$12.34	$23.04	$3.58	$5.88	-$37.06	-$16.68	-$22.13	$33.67
Exploration & Development (excl. revisions)	$6.37	$2.97	$9.93	$45.57	$2.69	$12.49	-$71.10	$3.73	-$120.44	$18.68	-$17.28	-$125.59	$25.29
Acquisition Costs	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	$6.42	$2.97	$12.27	$45.57	$2.69	$12.49	-$71.10	$3.73	-$120.44	$18.68	-$17.28	-$125.59	$25.29

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

MEG Energy Corp. (MEG - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	-	-	20.16	16.54	13.93	13.49	13.94	8.33	6.52	5.92	5.23	5.88	7.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	5.45	6.89	7.59	7.92	4.66	3.42	2.61	2.47	2.20	2.42	2.99
F&D Costs	-	-	12.27	11.46	2.76	12.34	23.04	3.00	5.88	18.68	9.19	11.25	11.96
Return on Capital	-	-	21.47	20.07	4.83	21.59	40.33	5.25	10.30	32.75	16.11	19.70	20.93
Income Taxes	-	-	5.15	7.23	0.90	5.40	10.08	1.75	4.98	11.43	6.59	8.12	7.55
Breakeven Oil Price	-	-	64.51	62.19	30.00	60.73	92.05	21.75	30.30	71.24	39.31	47.36	51.10
Quality Differential	-	-	24.60	47.52	61.32	58.00	34.29	21.87	16.97	12.49	34.00	21.15	23.92
Required Brent Price	-	-	89.11	109.71	91.32	118.73	126.34	43.62	47.27	83.74	73.31	68.52	75.03

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	-	-	20.16	16.54	13.93	13.49	13.94	8.33	6.52	5.92	5.23	5.88	7.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	5.45	6.89	7.59	7.92	4.66	3.42	2.61	2.47	2.20	2.42	2.99
F&D Costs	-	-	12.27	11.46	2.76	12.34	23.04	3.00	5.88	18.68	9.19	11.25	11.96
Return on Capital	-	-	21.47	20.07	4.83	21.59	40.33	5.25	10.30	32.75	16.11	19.70	20.93
Income Taxes	-	-	5.15	7.23	0.90	5.40	10.08	1.75	4.98	11.43	6.59	8.12	7.55
Breakeven Oil Price	-	-	64.51	62.19	30.00	60.73	92.05	21.75	30.30	71.24	39.31	47.36	51.10
Quality Differential	-	-	24.60	47.52	61.32	58.00	34.29	21.87	16.97	12.49	34.00	21.15	23.92
Required Brent Price	-	-	89.11	109.71	91.32	118.73	126.34	43.62	47.27	83.74	73.31	68.52	75.03

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	-	-	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	-	-	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	-	-	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	-	-	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	-	-	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	-	-	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	-	-	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	-	-	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	-	-	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

MEG Energy Corp. (MEG - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	20.16	16.54	13.93	13.49	13.94	8.33	6.52	5.92	5.23	5.88	7.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	5.45	6.89	7.59	7.92	4.66	3.42	2.61	2.47	2.20	2.42	2.99
F&D Costs (1-Year)	-	-	12.27	11.46	2.76	12.34	23.04	3.00	5.88	18.68	9.19	11.25	11.96
Return on Capital	-	-	21.47	20.07	4.83	21.59	40.33	5.25	10.30	32.75	16.11	19.70	20.93
Income Taxes	-	-	5.15	7.23	0.90	5.40	10.08	1.75	4.98	11.43	6.59	8.12	7.55
Breakeven Oil Price	**-**	**-**	**64.51**	**62.19**	**30.00**	**60.73**	**92.05**	**21.75**	**30.30**	**71.24**	**39.31**	**47.36**	**51.10**
Quality Differential	-	-	24.60	47.52	61.32	58.00	34.29	21.87	16.97	12.49	34.00	21.15	23.92
Required Brent Price	**-**	**-**	**89.11**	**109.71**	**91.32**	**118.73**	**126.34**	**43.62**	**47.27**	**83.74**	**73.31**	**68.52**	**75.03**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	20.16	16.54	13.93	13.49	13.94	8.33	6.52	5.92	5.23	5.88	7.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	5.45	6.89	7.59	7.92	4.66	3.42	2.61	2.47	2.20	2.42	2.99
F&D Costs (1-Year)	-	-	24.08	109.19	57.87	10.37	21.88	2.98	6.51	9.54	9.96	9.27	10.17
Return on Capital	-	-	42.15	190.85	101.07	18.17	38.33	5.22	11.39	16.72	17.45	16.25	17.83
Income Taxes	-	-	10.10	68.81	18.85	4.54	9.58	1.74	5.51	5.84	7.14	6.70	6.43
Breakeven Oil Price	**-**	**-**	**101.94**	**392.28**	**199.30**	**54.49**	**88.38**	**21.69**	**32.54**	**40.49**	**41.98**	**40.52**	**45.11**
Quality Differential	-	-	24.60	47.52	61.32	58.00	34.29	21.87	16.97	12.49	34.00	21.15	23.92
Required Brent Price	**-**	**-**	**126.55**	**439.80**	**260.62**	**112.50**	**122.67**	**43.57**	**49.51**	**52.98**	**75.98**	**61.67**	**69.03**

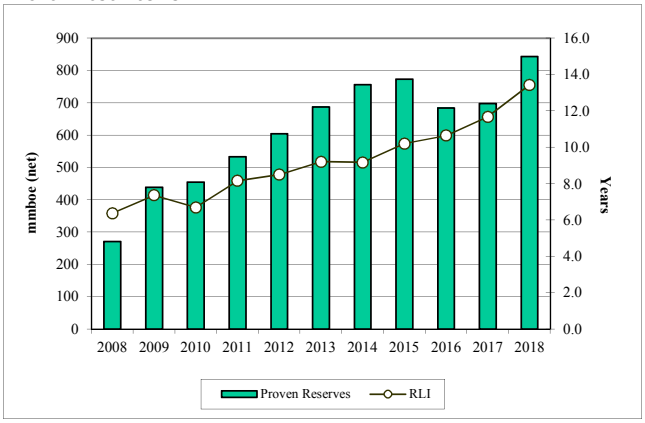
Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE) US$, net

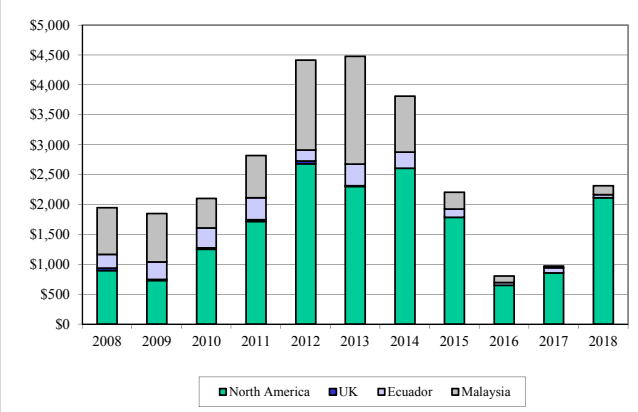
- Murphy Oil reported results of operations of $9.07/boe in 2018 versus $5.17/boe in 2017.
- The company's F&D costs decreased to $11.09/boe from $13.20/boe last year. On a realized oil:gas price ratio basis, F&D costs came in lower at $14.52/boe versus $19.04/boe in 2017, while costs for PD reserves improved to $20.60/boe from $21.02/boe.
- Murphy's 2018 costs imply a required Brent breakeven oil price of $64.20/boe on a realized oil:gas price ratio on total proved reserves, while its PD costs imply a Brent breakeven of $77.35/boe.
- Murphy reported ROCE of 6.8% in 2018 versus a loss of 3.0% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

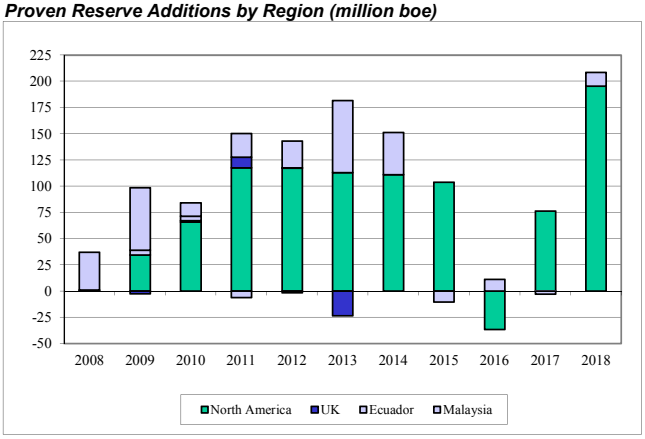
Proven Reserves vs RLI



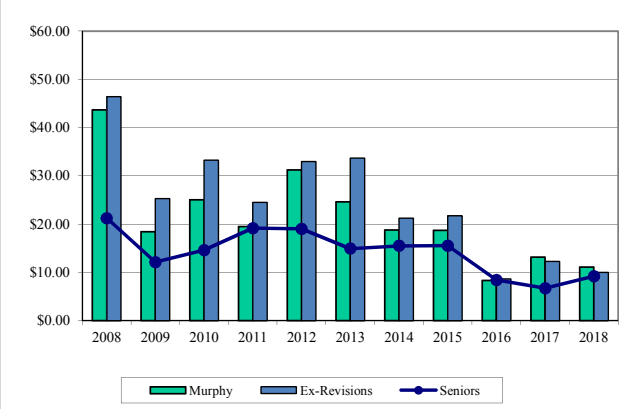
Capital Spending by Region (US$million)



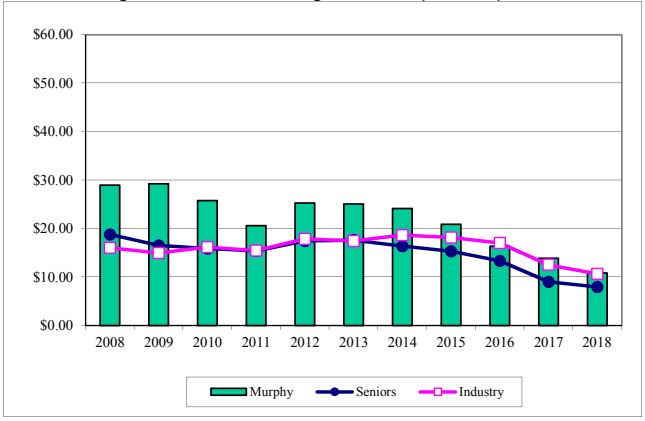
Proven Reserve Additions by Region (million boe)



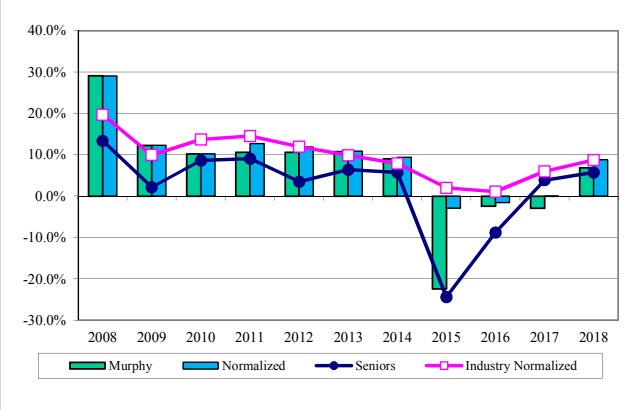
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

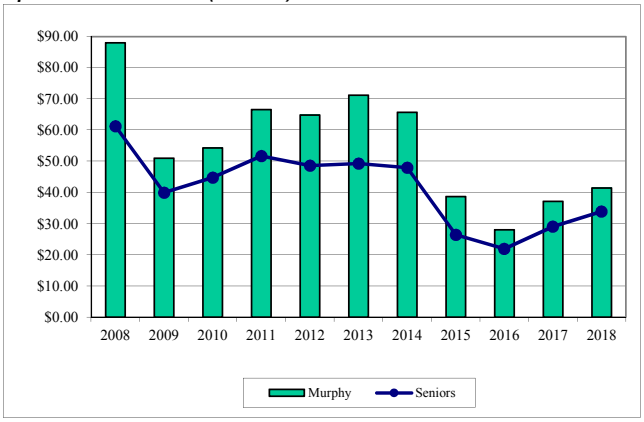
See pages F1 to F4 for analyst coverage.

Murphy Oil Corporation (MUR - NYSE)

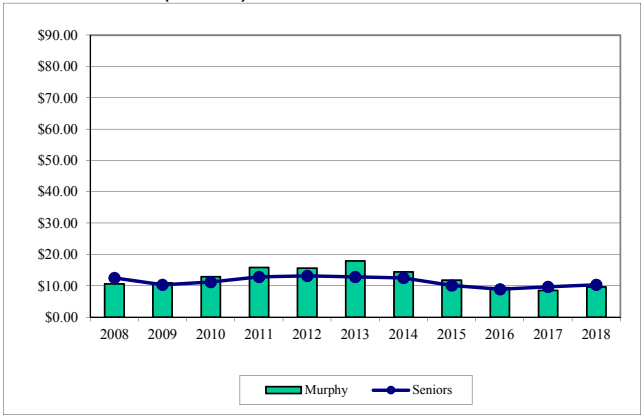
US$/boe, net

Worldwide

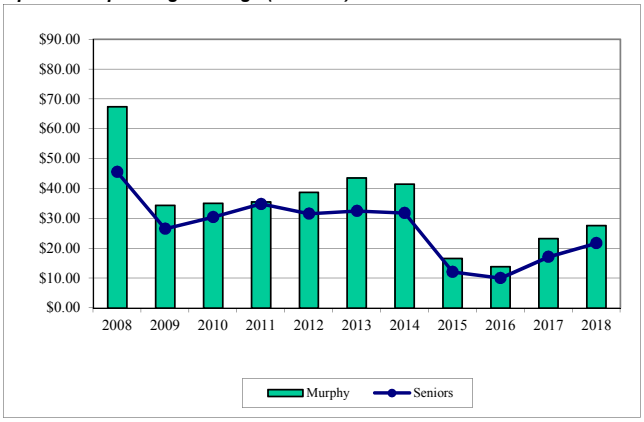
Upstream Net Revenue (US$/boe)



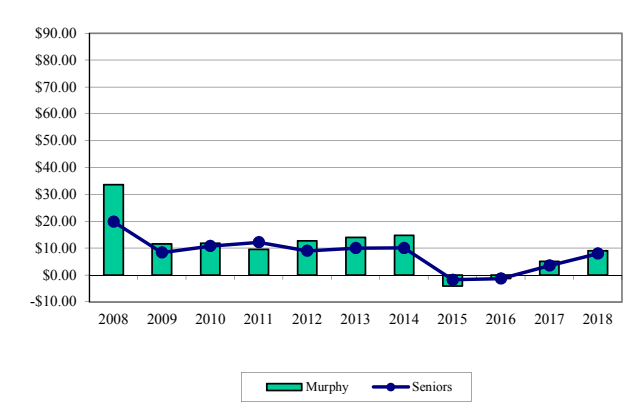
Production Costs (US$/boe)



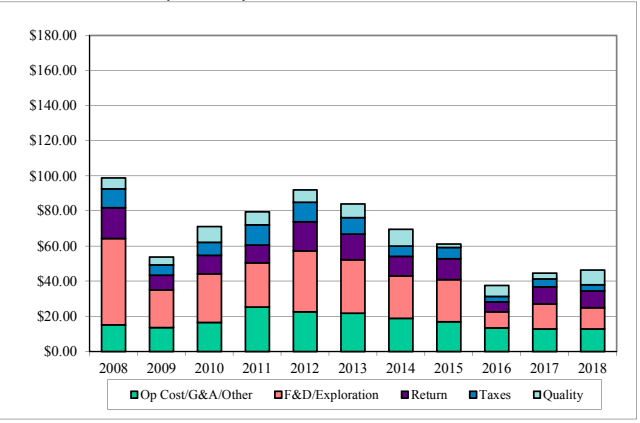
Upstream Operating Earnings (US$/boe)



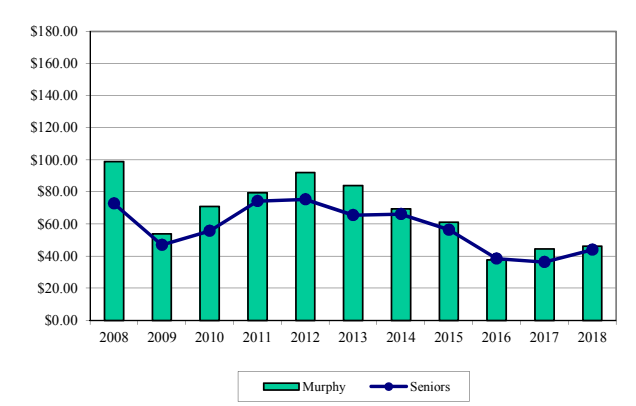
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



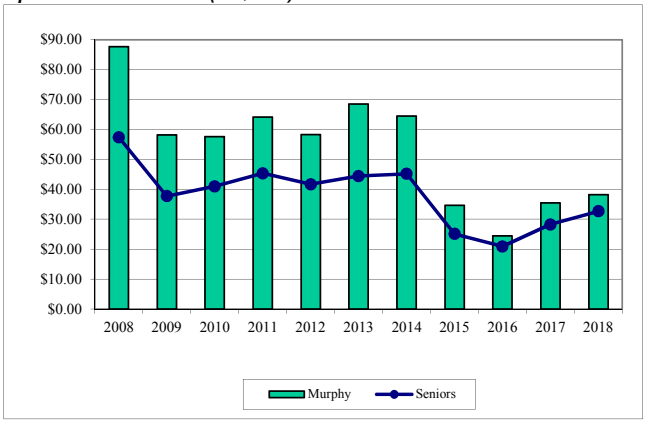
Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

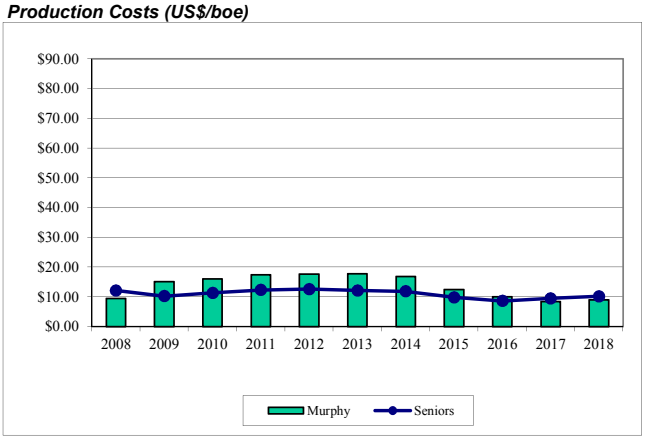
US$/boe, net

North America

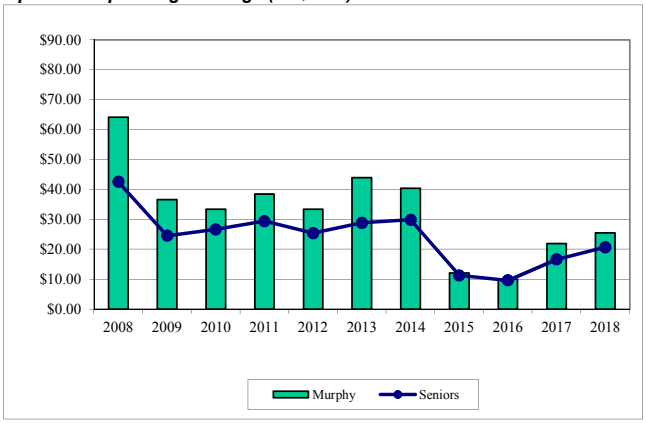
Upstream Net Revenue (US$/boe)



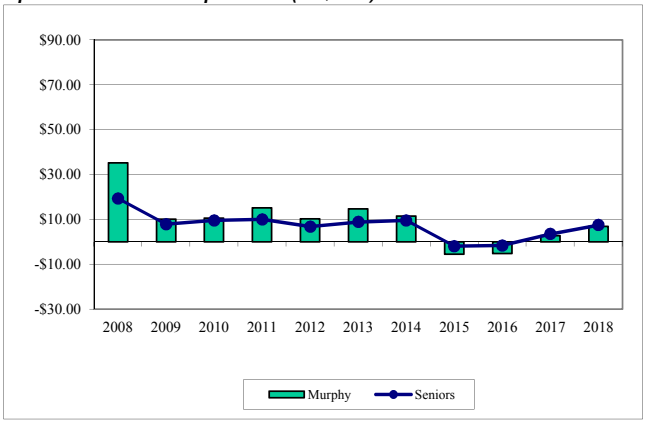
Production Costs (US$/boe)



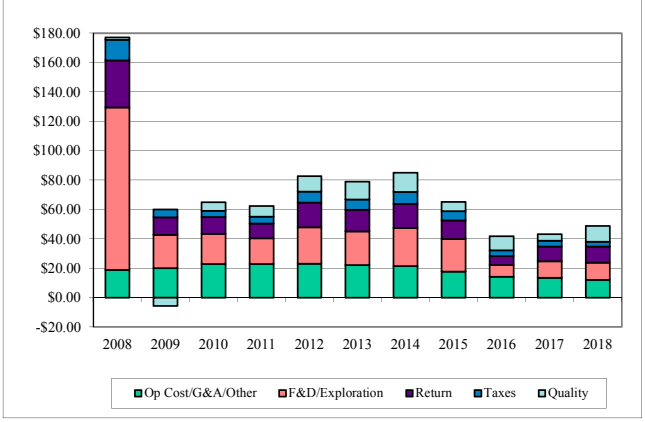
Upstream Operating Earnings (US$/boe)



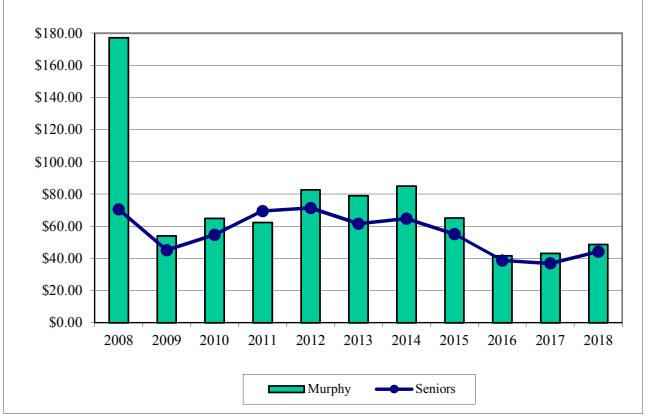
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



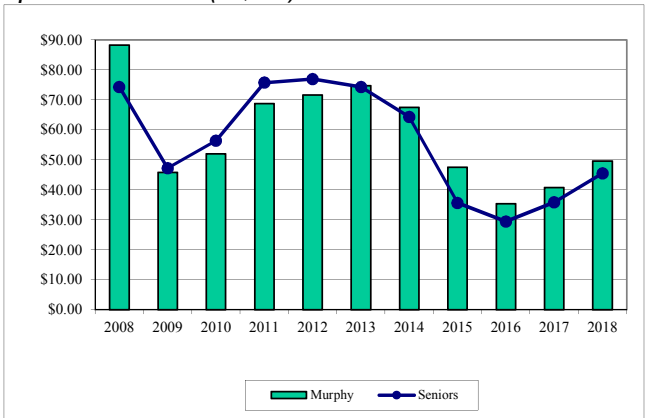
Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

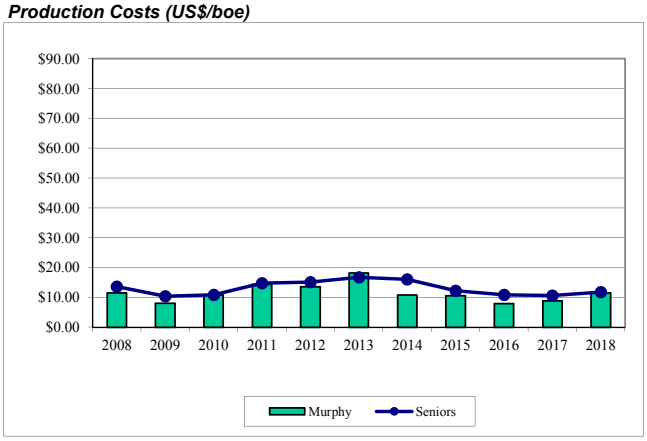
US$/boe, net

Total International

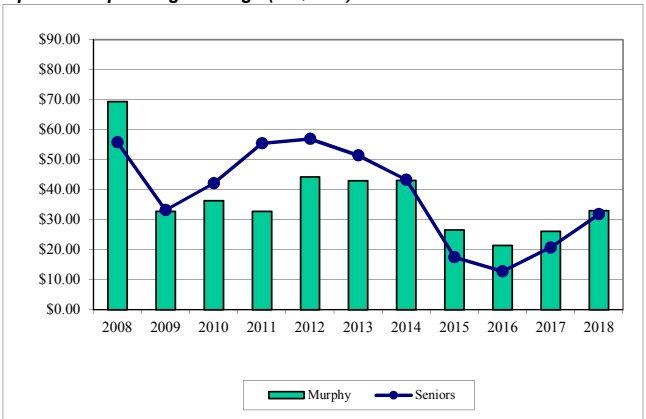
Upstream Net Revenue (US$/boe)



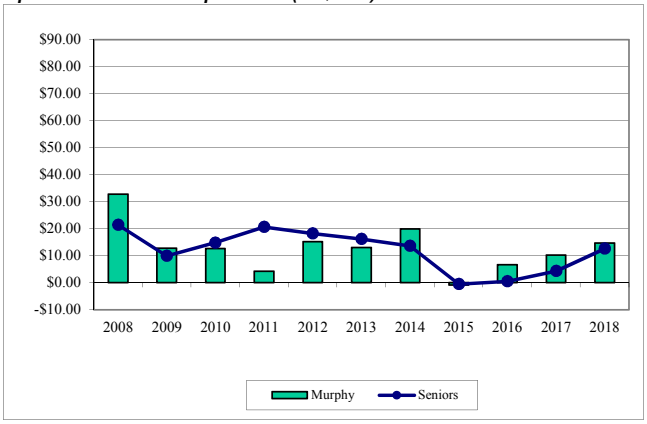
Production Costs (US$/boe)



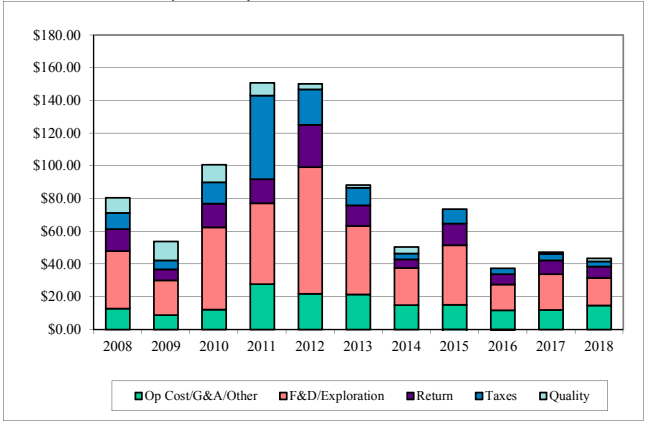
Upstream Operating Earnings (US$/boe)



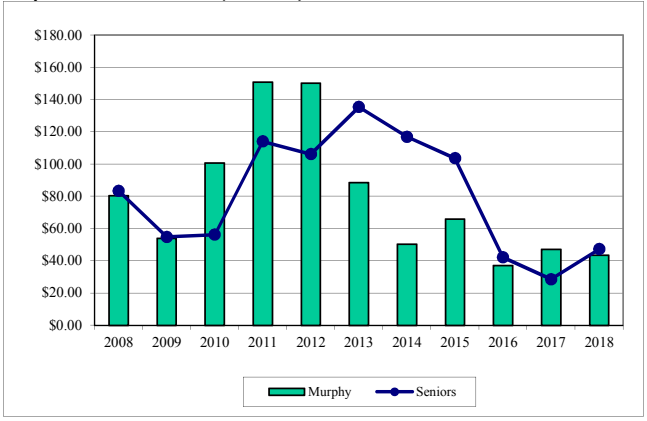
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



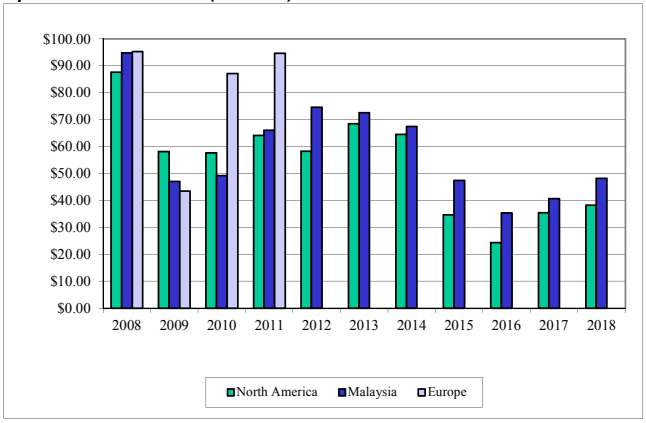
Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

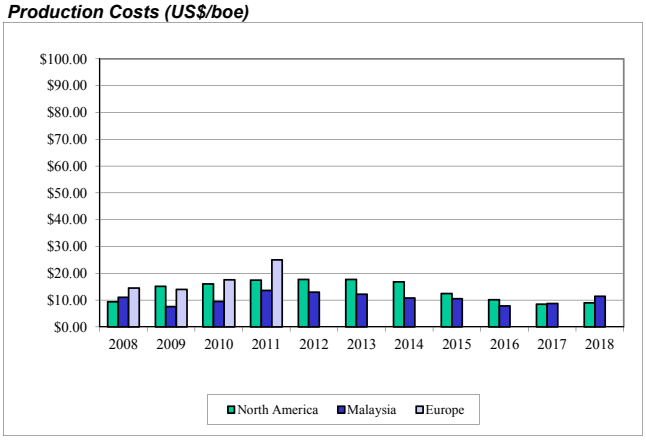
US$/boe, net

International Segments

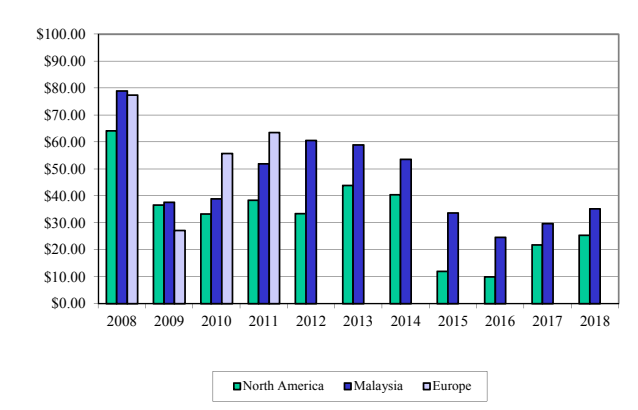
Upstream Net Revenue (US$/boe)



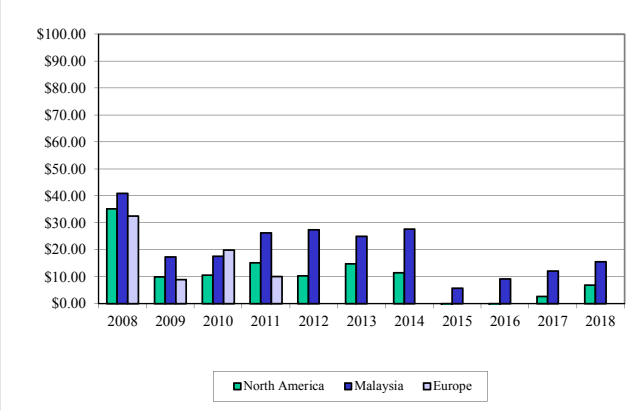
Production Costs (US$/boe)



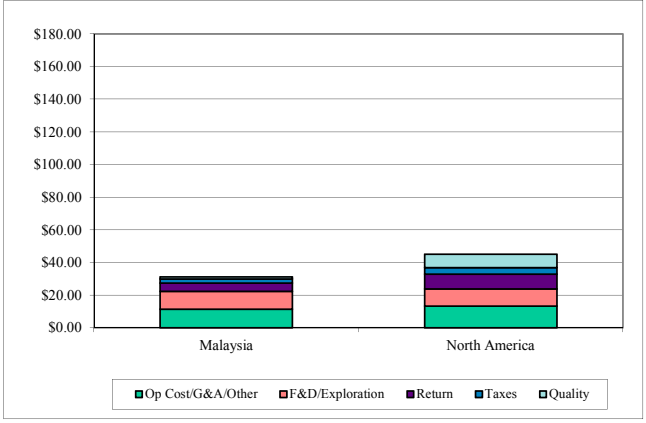
Upstream Operating Earnings (US$/boe)



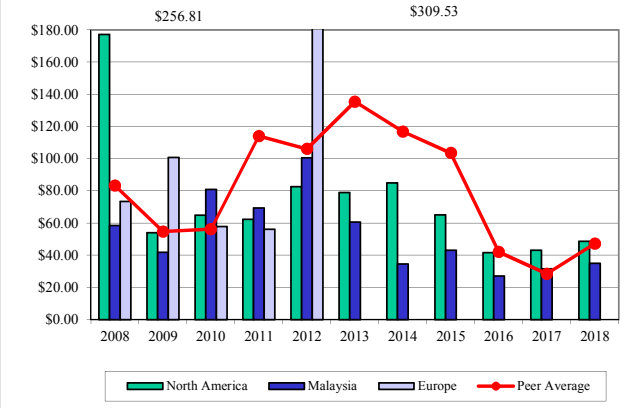
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	4,038	3,036	3,690	4,353	4,608	5,313	5,289	2,787	1,810	2,098	2,587
Midstream / Downstream Revenue	23,403	15,882	19,711	23,337	24,008	-	-	-	-	-	-
Other	72	94	(56)	56	10	77	187	246	65	59	(16)
Total Revenue and Other Income	27,513	19,012	23,345	27,746	28,626	5,390	5,476	3,033	1,874	2,157	2,571
Crude Oil and Product Purchases	21,650	14,548	18,142	21,875	22,449	-	-	-	-	-	
Production and Transportation Expenses	1,689	1,622	1,967	1,993	2,128	1,340	1,197	898	603	512	608
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	
Exploration / Dry Hole Costs	344	266	292	490	381	502	514	471	102	123	104
General and Administrative	230	242	279	301	354	379	364	307	265	223	216
Depreciation, Depletion and Amortization	713	919	1,165	1,093	1,376	1,553	1,906	1,620	1,054	958	972
Interest, net	44	24	35	56	54	72	116	117	148	182	182
Other	-	89	19	348	222	22	76	2,854	148	46	12
Earnings Before Income Tax	2,819	1,277	1,414	1,551	1,623	1,473	1,252	(3,282)	(493)	72	432
Current Income Taxes	845	439	473	638	502	426	393	(256)	161	127	193
Future Income Taxes	233	97	143	172	157	158	(166)	(771)	(380)	256	(184)
Total Income Taxes	1,079	537	616	810	659	585	227	(1,026)	(219)	383	9
Minority Interest	-	-	-	-	-	-	-	-	-	-	(8)
Earnings From Continuing Operations	1,740	740	798	741	964	888	1,025	(2,256)	(274)	(311)	415
Discontinued Operations/Extraordinary Items	-	97	-	132	7	235	(119)	(15)	(2)	(1)	(4)
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	1,740	837	798	873	971	1,123	906	(2,271)	(276)	(312)	411
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	1,740	837	798	873	971	1,123	906	(2,271)	(276)	(312)	411

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	1,740	740	798	741	964	888	1,025	(2,256)	(274)	(311)	415
Adjustments:											
Depreciation, Depletion and Amortization	713	919	1,165	1,093	1,376	1,553	1,906	1,620	1,054	958	972
Exploration / Dry Hole Costs	129	125	90	251	182	263	270	297	15	(4)	21
Deferred Income Taxes	233	97	143	172	317	158	(171)	(978)	(388)	260	(184)
Asset Impairments	-	5	-	369	261	22	51	2,493	95	-	-
Charges and Credits Not Impacting Cash	1,076	1,147	1,398	1,885	2,135	1,996	2,057	3,432	776	1,214	809
Other	56	173	142	132	153	60	(5)	(23)	92	(23)	113
Cash Flow From Operations	2,872	2,060	2,338	2,757	3,252	2,944	3,076	1,153	595	880	1,337
Change in Working Capital	168	(195)	640	(825)	(401)	266	(4)	35	(39)	136	(170)
Other	-	(1)	151	213	206	428	(24)	(5)	45	112	53
Change in Working Capital / Other	168	(196)	791	(612)	(196)	694	(28)	30	6	248	(117)
Net Cash From Operating Activities	3,040	1,864	3,129	2,145	3,056	3,638	3,049	1,183	601	1,128	1,219
Total Capital Expenditures	(2,186)	(1,979)	(2,316)	(2,623)	(3,675)	(3,598)	(3,679)	(2,550)	(927)	(1,010)	(1,103)
Acquisitions, net	362	71	(38)	28	1	(640)	481	(488)	459	70	(793)
Other	(499)	(424)	25	981	357	507	881	1,115	754	108	-
Net Cash From Investing Activities	(2,323)	(2,332)	(2,329)	(1,614)	(3,317)	(3,731)	(2,318)	(1,922)	286	(832)	(1,896)
Net Change in Debt	(493)	241	(414)	(340)	1,645	350	75	140	(59)	(26)	309
Net Change in Common Stock	-	-		-	(250)	(500)	(375)	(250)	-	-	-
Net Change in Preferred Stock	-	-		-	-	-	-	-	-		
Cash Dividends Paid	(167)	(191)	(201)	(213)	(714)	(235)	(236)	(245)	(207)	(173)	(173)
Other	50	17	49	4	5	277	(8)	(9)	(26)	(7)	(8)
Net Cash From Financing Activities	(609)	67	(566)	(548)	686	(108)	(545)	(365)	(291)	(205)	128
Effect of Exchange Rate on Cash	(115)	35	1	(5)	9	3	(4)	10	(6)	1	(29)
Net Increase/(Decrease) in Cash	(7)	(366)	235	(22)	434	(197)	443	(910)	590	92	(578)
Cash and Equivalents, Beginning of Year	674	666	301	536	514	947	750	1,193	283	873	965
Cash and Equivalents, End of Year	666	301	536	514	947	750	1,193	283	873	965	387

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Murphy Oil Corporation (MUR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	2,847	3,376	3,551	3,448	4,109	3,509	3,279	1,448	1,559	1,372	880
Net Property, Plant and Equipment	7,728	9,065	10,368	10,475	13,012	13,481	13,331	9,818	8,316	8,220	9,758
Other Assets	574	316	315	215	402	520	132	227	420	269	415
Total Assets	11,149	12,756	14,233	14,138	17,523	17,509	16,742	11,494	10,296	9,861	11,053
Total Current Liabilities	1,888	2,182	2,931	2,825	3,409	3,224	3,148	1,675	1,502	834	846
Long-term Debt	1,026	1,353	939	250	2,245	2,937	2,536	3,041	2,423	2,907	3,227
Deferred Income Taxes	878	1,019	1,212	1,230	1,544	1,466	1,194	240	69	159	130
Other Liabilities and Deferred Credits	1,078	857	951	1,055	1,382	1,287	1,291	1,232	1,385	1,341	1,652
Total Liabilities	4,870	5,410	6,034	5,360	8,581	8,914	8,169	6,187	5,379	5,241	5,855
Minority Interests	-		-	-	-	-	-	-	-	-	368
Common Shares	191	192	193	194	195	195	195	195	195	195	195
Contributed Surplus (Paid-in Capital)	632	681	768	818	874	903	907	910	917	918	980
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	5,557	6,204	6,801	7,461	7,717	8,059	8,728	6,212	5,730	5,245	5,514
Other / Comprehensive Income (Loss)	(102)	269	438	306	156	(561)	(1,256)	(2,011)	(1,925)	(1,738)	(1,859)
Total Shareholders' Equity	6,279	7,346	8,200	8,778	8,942	8,596	8,573	5,307	4,917	4,620	4,829
Total Liabilities and Shareholders' Equity	11,149	12,756	14,233	14,138	17,523	17,509	16,742	11,494	10,296	9,861	11,053
Return on Capital Employed (ROCE)	**29.1%**	**12.3%**	**10.2%**	**10.6%**	**10.6%**	**10.7%**	**9.0%**	**-22.4%**	**-2.4%**	**-3.0%**	**6.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

												Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	3,742	3,036	3,690	4,353	4,608	5,314	5,423	2,935	1,805	2,221	2,605	6,630	14,987
Production Costs	454	655	880	1,039	1,115	1,340	1,197	898	603	512	608	1,723	3,819
Exploration	232	182	184	372	251	435	439	396	59	61	64	183	1,018
DD&A	545	876	1,005	970	1,244	1,543	1,898	1,608	1,037	940	954	2,931	6,437
G&A/Other	190	150	238	619	488	286	362	380	256	259	200	715	1,457
Pre-tax Results Of Operations	2,321	1,173	1,384	1,353	1,510	1,709	1,527	-347	-150	449	779	1,077	2,258
Income Taxes	886	478	577	728	605	661	302	-39	-68	140	209	281	543
Results Of Operations	1,435	695	807	626	905	1,048	1,225	-308	-82	309	570	797	1,714

												Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	1,444	1,429	1,559	2,026	2,122	2,950	3,241	1,803	1,051	1,439	1,728	4,219	9,262
Production Costs	155	371	436	552	644	765	847	646	435	343	405	1,183	2,676
Exploration	77	38	38	97	62	108	132	259	10	8	30	48	438
DD&A	221	541	507	509	676	951	1,157	1,057	804	732	752	2,287	4,501
G&A/Other	155	123	184	165	199	187	231	272	176	200	145	520	1,022
Pre-tax Results Of Operations	835	357	396	703	541	940	874	-430	-373	157	397	181	624
Income Taxes	255	111	109	222	165	305	295	-143	-148	44	87	-17	135
Results Of Operations	580	246	287	481	376	635	579	-288	-224	112	310	198	489

												Cumulative	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	2,299	1,607	2,131	2,326	2,486	2,364	2,182	1,131	754	781	876	2,411	5,725
Production Costs	299	284	444	487	471	575	350	252	168	169	203	540	1,142
Exploration	155	145	147	274	189	327	308	137	49	53	34	135	580
DD&A	324	335	498	461	568	593	740	551	234	208	202	644	1,935
G&A/Other	35	28	54	454	289	99	131	108	80	59	56	195	434
Pre-tax Results Of Operations	1,485	816	988	651	969	770	653	84	223	292	382	897	1,633
Income Taxes	631	367	468	506	440	357	7	103	80	96	122	298	408
Results Of Operations	855	449	520	145	529	413	646	-20	142	196	260	599	1,225

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$87.98	$50.94	$54.27	$66.53	$64.81	$71.16	$65.70	$38.71	$28.08	$37.16	$41.46	$35.48	$43.42
Production Costs	$10.67	$10.98	$12.93	$15.88	$15.68	$17.95	$14.50	$11.85	$9.39	$8.57	$9.68	$9.22	$11.06
Exploration	$5.46	$3.05	$2.71	$5.68	$3.53	$5.83	$5.32	$5.22	$0.91	$1.02	$1.02	$0.98	$2.95
DD&A	$12.82	$14.70	$14.78	$14.82	$17.50	$20.67	$22.99	$21.21	$16.14	$15.73	$15.19	$15.69	$18.65
G&A/Other	$4.46	$2.52	$3.49	$9.47	$6.86	$3.83	$4.39	$5.01	$3.98	$4.33	$3.18	$3.82	$4.22
Pre-tax Results Of Operations	$54.56	$19.68	$20.35	$20.69	$21.23	$22.89	$18.50	-$4.57	-$2.34	$7.51	$12.40	$5.77	$6.54
Income Taxes	$20.82	$8.02	$8.48	$11.12	$8.51	$8.86	$3.65	-$0.52	-$1.06	$2.34	$3.33	$1.50	$1.57
Results Of Operations	$33.74	$11.67	$11.87	$9.56	$12.72	$14.03	$14.85	-$4.06	-$1.27	$5.17	$9.07	$4.26	$4.97

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$87.66	$58.25	$57.67	$64.23	$58.32	$68.58	$64.55	$34.69	$24.46	$35.47	$38.31	$32.79	$40.12
Production Costs	$9.43	$15.12	$16.11	$17.50	$17.69	$17.78	$16.87	$12.43	$10.12	$8.46	$8.98	$9.20	$11.59
Exploration	$4.68	$1.53	$1.39	$3.08	$1.72	$2.51	$2.62	$4.98	$0.23	$0.20	$0.66	$0.37	$1.90
DD&A	$13.43	$22.04	$18.74	$16.13	$18.58	$22.10	$23.06	$20.33	$18.71	$18.02	$16.67	$17.78	$19.50
G&A/Other	$9.39	$5.00	$6.79	$5.24	$5.48	$4.34	$4.60	$5.23	$4.08	$4.92	$3.20	$4.04	$4.43
Pre-tax Results Of Operations	$50.73	$14.57	$14.63	$22.27	$14.86	$21.85	$17.41	-$8.28	-$8.67	$3.86	$8.79	$1.40	$2.70
Income Taxes	$15.48	$4.53	$4.04	$7.04	$4.53	$7.08	$5.87	-$2.74	-$3.45	$1.09	$1.93	-$0.13	$0.59
Results Of Operations	$35.25	$10.04	$10.60	$15.24	$10.33	$14.77	$11.53	-$5.54	-$5.22	$2.77	$6.86	$1.54	$2.12

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$88.18	$45.82	$52.02	$68.69	$71.60	$74.66	$67.49	$47.47	$35.38	$40.75	$49.51	$41.45	$50.07
Production Costs	$11.46	$8.08	$10.84	$14.36	$13.57	$18.17	$10.83	$10.57	$7.91	$8.81	$11.46	$9.28	$9.99
Exploration	$5.96	$4.12	$3.58	$8.10	$5.44	$10.34	$9.52	$5.73	$2.29	$2.75	$1.91	$2.33	$5.07
DD&A	$12.43	$9.56	$12.17	$13.60	$16.37	$18.72	$22.89	$23.12	$10.97	$10.87	$11.42	$11.07	$16.93
G&A/Other	$1.35	$0.79	$1.32	$13.41	$8.31	$3.13	$4.06	$4.54	$3.77	$3.09	$3.14	$3.35	$3.80
Pre-tax Results Of Operations	$56.98	$23.26	$24.12	$19.21	$27.91	$24.30	$20.19	$3.51	$10.45	$15.23	$21.59	$15.42	$14.28
Income Taxes	$24.20	$10.46	$11.42	$14.93	$12.68	$11.27	$0.21	$4.34	$3.76	$4.99	$6.89	$5.12	$3.57
Results Of Operations	$32.79	$12.80	$12.70	$4.28	$15.23	$13.03	$19.99	-$0.83	$6.69	$10.24	$14.70	$10.30	$10.72

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Malaysia													
Net Revenue	$94.82	$47.04	$49.23	$66.13	$74.67	$72.59	$67.53	$47.47	$35.37	$40.75	$48.26	$41.07	$49.89
Production Costs	$11.11	$7.65	$9.51	$13.60	$13.00	$12.24	$10.83	$10.57	$7.91	$8.81	$11.42	$9.27	$9.98
Exploration	$4.49	$1.72	$0.53	$0.36	$0.84	$0.81	$1.51	$1.58	$0.24	$0.13	$0.12	$0.17	$0.84
DD&A	$11.77	$9.37	$10.15	$11.55	$16.36	$18.72	$22.73	$22.86	$10.69	$10.67	$11.22	$10.85	$16.71
G&A/Other	$0.23	$0.07	$0.28	$0.29	$0.22	$0.59	$1.57	$1.57	$2.63	$2.07	$1.54	$2.11	$1.85
Pre-tax Results Of Operations	$67.21	$28.23	$28.75	$40.33	$44.25	$40.24	$30.89	$10.89	$13.90	$19.07	$23.96	$18.67	$20.50
Income Taxes	$26.20	$10.91	$11.09	$14.06	$16.75	$15.21	$3.17	$5.06	$4.65	$6.88	$8.32	$6.50	$5.26
Results Of Operations	$41.01	$17.32	$17.66	$26.27	$27.50	$25.03	$27.72	$5.82	$9.25	$12.20	$15.64	$12.17	$15.24

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
UK													
Net Revenue	$95.29	$43.48	$87.13	$94.68	na	na	na	na	na	na	na	na	na
Production Costs	$14.51	$14.05	$17.54	$24.97	na	na	na	na	na	na	na	na	na
Exploration	$0.22	$0.14	$10.57	$0.44	na	na	na	na	na	na	na	na	na
DD&A	$12.75	$9.88	$14.61	$12.09	na	na	na	na	na	na	na	na	na
G&A/Other	$3.09	$2.12	$3.26	$5.74	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	$64.72	$17.29	$41.15	$51.44	na	na	na	na	na	na	na	na	na
Income Taxes	$32.16	$8.40	$21.26	$41.29	na	na	na	na	na	na	na	na	na
Results Of Operations	$32.56	$8.89	$19.89	$10.15	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	63.0	187.4	356.7	457.3	491.5	423.8	446.0	427.7	379.2	383.8	422.7	395.3	411.9
Liquids Production (b/d)	106,027	132,055	126,849	103,014	112,877	133,973	151,781	136,438	112,877	99,726	101,644	104,749	120,493
Total Production (boe/d)	116,530	163,288	186,301	179,228	194,795	204,612	226,119	207,717	176,073	163,699	172,100	170,624	189,142
% Gas Production	9%	19%	32%	43%	42%	35%	33%	34%	36%	39%	41%	39%	36%
% Oil Production	91%	81%	68%	57%	58%	65%	67%	66%	64%	61%	59%	61%	64%
Proven Reserves:													
Gas Reserves (bcf)	585.6	754.6	883.1	1,106.1	1,137.0	1,153.6	1,704.7	1,688.8	1,878.0	1,927.1	2,143.6	1,982.9	1,868.4
Oil Reserves (mmbbls)	173.6	313.4	308.0	349.7	414.8	495.6	472.4	492.6	371.5	377.0	486.7	411.7	440.0
Total Proven Reserves (mmboe)	271.2	439.2	455.2	534.0	604.3	687.9	756.5	774.1	684.5	698.2	844.0	742.2	751.4
% Gas Reserves	36%	29%	32%	35%	31%	28%	38%	36%	46%	46%	42%	45%	41%
% Oil Reserves	64%	71%	68%	65%	69%	72%	62%	64%	54%	54%	58%	55%	59%
Proven Reserve Life Index	6.4	7.4	6.7	8.2	8.5	9.2	9.2	10.2	10.7	11.7	13.4	11.9	11.0
Proven Reserve Additions:													
Gas Additions (bcf)	17.8	237.4	258.7	389.9	210.3	171.3	713.9	140.2	327.6	189.2	370.8	887.6	1,741.7
Oil Additions (mmbbls)	34.1	56.4	40.9	79.3	106.3	129.7	32.2	70.0	-79.9	41.9	146.8	108.8	211.0
Total Additions (mmboe)	37.1	96.0	84.0	144.3	141.4	158.3	151.2	93.4	-25.3	73.4	208.6	256.7	501.3
`													
Extensions, Discoveries and Additions	42.0	73.0	59.3	115.0	119.7	133.1	172.1	101.3	41.3	73.2	123.5	238.0	511.3
Acquisitions	0.0	0.0	4.0	0.0	14.1	0.0	7.0	0.0	51.8	5.9	106.9	164.5	171.6
Dispositions	(7.6)	(4.3)	0.0	0.0	0.0	-23.6	-51.6	-24.1	-121.4	0.0	0.0	(121.4)	(197.1)
Revisions of Estimates	2.7	27.3	20.7	29.3	7.6	48.7	23.7	16.2	3.0	-5.6	-21.8	(24.4)	15.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	113.3%	76.1%	70.6%	79.7%	84.7%	84.1%	113.8%	108.4%	-163.1%	99.6%	59.2%	92.7%	102.0%
Acquisitions	0.0%	0.0%	4.8%	0.0%	10.0%	0.0%	4.6%	0.0%	-204.7%	8.0%	51.2%	64.1%	34.2%
Dispositions	-20.5%	-4.5%	0.0%	0.0%	0.0%	-14.9%	-34.1%	-25.8%	479.7%	0.0%	0.0%	-47.3%	-39.3%
Revisions of Estimates	7.1%	28.4%	24.7%	20.3%	5.4%	30.8%	15.7%	17.4%	-11.9%	-7.6%	-10.5%	-9.5%	3.1%
Additions as % of Production:													
Gas	77.4%	347.1%	198.7%	233.6%	117.2%	110.7%	438.5%	89.8%	236.7%	135.0%	240.3%	205.1%	231.7%
Oil	88.1%	117.0%	88.3%	210.9%	258.0%	265.2%	58.1%	140.6%	-193.9%	115.1%	395.7%	94.9%	96.0%
Total	87.1%	161.0%	123.6%	220.6%	198.8%	211.9%	183.2%	123.1%	-39.4%	122.9%	332.1%	137.4%	145.2%
Additions as % of Reserves:													
Gas	3.0%	31.5%	29.3%	35.3%	18.5%	14.8%	41.9%	8.3%	17.4%	9.8%	17.3%	44.8%	93.2%
Oil	19.6%	18.0%	13.3%	22.7%	25.6%	26.2%	6.8%	14.2%	-21.5%	11.1%	30.2%	26.4%	48.0%
Total	13.7%	21.9%	18.5%	27.0%	23.4%	23.0%	20.0%	12.1%	-3.7%	10.5%	24.7%	34.6%	66.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$329.7	$312.6	$473.4	$562.5	$448.0	$493.7	$430.1	$371.9	$70.1	$79.2	$126.0	$275.3	$1,077.3
Development	$1,465.0	$1,419.1	$1,365.8	$1,954.3	$3,521.7	$3,939.6	$3,282.7	$1,819.4	$508.0	$819.0	$1,390.0	$2,717.0	$7,819.1
Acquisitions	$156.0	$118.1	$264.8	$302.8	$444.0	$48.8	$100.3	$12.6	$225.3	$71.1	$797.3	$1,093.7	$1,206.6
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$1,950.7	$1,849.8	$2,104.0	$2,819.6	$4,413.7	$4,482.1	$3,813.1	$2,203.9	$803.4	$969.3	$2,313.3	$4,086.0	$10,103.0
Expenditures as % of Total:													
Exploration	16.9%	16.9%	22.5%	19.9%	10.2%	11.0%	11.3%	16.9%	8.7%	8.2%	5.4%	6.7%	10.7%
Development	75.1%	76.7%	64.9%	69.3%	79.8%	87.9%	86.1%	82.6%	63.2%	84.5%	60.1%	66.5%	77.4%
Acquisitions	8.0%	6.4%	12.6%	10.7%	10.1%	1.1%	2.6%	0.6%	28.0%	7.3%	34.5%	26.8%	11.9%
Cashflow (US$million)	$2,212.6	$1,753.3	$1,996.2	$1,967.1	$2,400.2	$3,026.6	$3,561.9	$1,695.8	$1,014.0	$1,309.6	$1,587.7	$3,911.3	$9,169.1
Cashflow (US$/boe)	$52.02	$29.42	$29.36	$30.07	$33.76	$40.53	$43.16	$22.37	$15.78	$21.92	$25.28	$20.93	$26.56
Recycle Ratio	1.2x	1.6x	1.2x	1.5x	1.1x	1.6x	2.3x	1.2x	1.9x	1.7x	2.3x	1.9x	1.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$40.19	$17.27	$22.99	$17.44	$31.19	$24.38	$18.97	$18.65	$13.05	$13.29	$14.90	$14.01	$16.89
Acquisition Costs	na	na	$66.20	na	$31.56	na	$14.29	na	$4.35	$12.12	$7.46	$6.65	$7.03
All Sources (incl. revisions)	$43.69	$18.44	$25.04	$19.54	$31.23	$24.65	$18.80	$18.76	$8.36	$13.20	$11.09	$10.81	$14.47
Exploration & Development (excl. revisions)	$42.73	$23.71	$31.02	$21.89	$33.16	$33.31	$21.57	$21.64	$14.01	$12.28	$12.27	$12.58	$17.40
Acquisition Costs	na	na	$66.20	na	$31.56	na	$14.29	na	$4.35	$12.12	$7.46	$6.65	$7.03
All Sources (excl. revisions)	$46.45	$25.33	$33.25	$24.52	$32.99	$33.67	$21.29	$21.77	$8.63	$12.26	$10.04	$10.15	$14.80
Geographically Segmented Costs													
North America	$105.87	$21.12	$19.06	$14.60	$22.87	$20.40	$23.23	$17.21	$7.68	$11.20	$10.82	$10.15	$14.00
UK	nm	-$5.96	$19.03	$3.07	$210.46	nm	nm	nm	nm	nm	nm	nm	nm
Ecuador Africa & Other	nm	$34.03	$76.72	-$60.85	-$114.44	nm	nm	nm	nm	nm	nm	nm	nm
Malaysia	$21.77	$13.59	$39.18	$31.29	$59.04	$26.18	$10.32	$20.46	$9.80	-$9.29	$11.11	$13.16	$11.91

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Murphy Oil Corporation (MUR - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	10.67	10.98	12.93	15.88	15.68	17.95	14.50	11.85	9.39	8.57	9.68	9.22	11.06
Exploration Expense	5.46	3.05	2.71	5.68	3.53	5.83	5.32	5.22	0.91	1.02	1.02	0.98	2.95
G&A/Other	4.46	2.52	3.49	9.47	6.86	3.83	4.39	5.01	3.98	4.33	3.18	3.82	4.22
F&D Costs	43.69	18.44	25.04	19.54	31.23	24.65	18.80	18.76	8.36	13.20	11.09	10.81	14.47
Return on Capital	17.55	8.52	10.53	9.97	16.62	14.66	11.11	12.02	5.61	9.77	9.54	8.17	10.09
Income Taxes	10.83	5.85	7.53	11.60	11.11	9.26	5.98	6.47	3.02	4.43	3.50	3.67	4.88
Breakeven Oil Price	92.68	49.37	62.24	72.13	85.03	76.17	60.11	59.33	31.26	41.32	38.01	36.68	47.67
Quality Differential	6.25	4.49	8.85	7.51	7.05	7.77	9.42	1.88	6.35	3.30	8.32	5.99	5.85
Required Brent Price	98.93	53.86	71.09	79.64	92.08	83.94	69.53	61.22	37.61	44.62	46.32	42.66	53.52

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	9.43	15.12	16.11	17.50	17.69	17.78	16.87	12.43	10.12	8.46	8.98	9.20	11.59
Exploration Expense	4.68	1.53	1.39	3.08	1.72	2.51	2.62	4.98	0.23	0.20	0.66	0.37	1.90
G&A/Other	9.39	5.00	6.79	5.24	5.48	4.34	4.60	5.23	4.08	4.92	3.20	4.04	4.43
F&D Costs	105.87	21.12	19.06	14.60	22.87	20.40	23.23	17.21	7.68	11.20	10.82	10.15	14.00
Return on Capital	32.08	11.80	11.41	10.04	16.93	14.74	16.37	12.72	5.99	9.99	11.15	9.15	11.56
Income Taxes	14.09	5.32	4.35	4.64	7.43	7.07	8.34	6.30	3.97	3.94	3.13	3.92	5.29
Breakeven Oil Price	175.54	59.90	59.11	55.09	72.12	66.84	72.03	58.87	32.07	38.71	37.96	36.83	48.76
Quality Differential	1.71	(5.80)	5.83	7.25	10.46	12.22	12.93	6.30	9.59	4.43	10.83	8.28	8.82
Required Brent Price	177.25	54.10	64.94	62.34	82.58	79.05	84.95	65.17	41.65	43.15	48.79	45.12	57.58

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	11.46	8.08	10.84	14.36	13.57	18.17	10.83	10.57	7.91	8.81	11.46	9.28	9.99
Exploration Expense	5.96	4.12	3.58	8.10	5.44	10.34	9.52	5.73	2.29	2.75	1.91	2.33	5.07
G&A/Other	1.35	0.79	1.32	13.41	8.31	3.13	4.06	4.54	3.77	3.09	3.14	3.35	3.80
F&D Costs	29.10	17.03	46.79	41.34	71.93	31.63	13.30	30.60	13.60	19.17	15.00	15.92	18.33
Return on Capital	13.51	6.71	14.43	14.66	25.95	12.56	5.20	13.34	6.24	8.39	6.87	7.17	7.92
Income Taxes	9.97	5.48	12.97	51.12	21.59	10.86	3.47	8.89	3.51	4.09	3.22	3.62	4.48
Breakeven Oil Price	71.35	42.22	89.93	142.99	146.80	86.69	46.38	73.67	37.32	46.29	41.59	41.67	49.60
Quality Differential	9.12	11.69	10.84	7.75	3.49	1.72	3.97	(7.76)	(0.19)	0.90	1.90	0.87	(0.24)
Required Brent Price	80.47	53.91	100.76	150.74	150.28	88.41	50.35	65.91	37.13	47.19	43.49	42.54	49.36

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	-	7.65	9.51	13.60	13.00	12.24	10.83	10.57	7.91	8.81	11.42	9.27	9.98
Exploration Expense	-	1.72	0.53	0.36	0.84	0.81	1.51	1.58	0.24	0.13	0.12	0.17	0.84
G&A/Other	-	0.07	0.28	0.29	0.22	0.59	1.57	1.57	2.63	2.07	1.54	2.11	1.85
F&D Costs	-	13.59	39.18	31.29	59.04	26.18	10.32	20.46	9.80	11.74	11.11	10.88	12.68
Return on Capital	-	5.20	11.64	10.48	18.00	10.69	4.00	8.93	4.50	5.13	5.10	4.92	5.53
Income Taxes	-	3.28	7.31	5.61	10.96	6.49	2.43	7.77	2.26	2.89	2.71	2.62	3.34
Breakeven Oil Price	-	31.50	68.45	61.64	102.06	57.00	30.65	50.89	27.33	30.77	32.00	29.97	34.23
Quality Differential	-	10.31	12.41	7.69	(1.48)	3.67	3.93	(7.76)	(0.18)	0.90	3.16	1.29	0.01
Required Brent Price	-	41.82	80.86	69.33	100.58	60.67	34.58	43.13	27.15	31.67	35.16	31.26	34.24

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	-	14.05	17.54	24.97	na	na	na	na	na	na	na	na	na
Exploration Expense	-	0.14	10.57	0.44	na	na	na	na	na	na	na	na	na
G&A/Other	-	2.12	3.26	5.74	na	na	na	na	na	na	na	na	na
F&D Costs	-	29.22	19.03	3.07	na	na	na	na	na	na	na	na	na
Return on Capital	-	21.54	12.60	4.63	na	na	na	na	na	na	na	na	na
Income Taxes	-	20.35	13.47	18.85	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	-	87.41	76.46	57.70	na	na	na	na	na	na	na	na	na
Quality Differential	-	13.39	(18.52)	(1.59)	na	na	na	na	na	na	na	na	na
Required Brent Price	-	100.80	57.94	56.10	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Murphy Oil Corporation (MUR - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.07	12.40	15.73	21.91	22.20	23.56	18.64	15.27	12.67	11.89	14.37	12.96	14.92
Exploration Expense	5.67	3.45	3.30	7.84	5.00	7.65	6.84	6.73	1.23	1.42	1.51	1.38	3.98
G&A/Other	4.63	2.85	4.25	13.07	9.71	5.03	5.64	6.46	5.37	6.01	4.73	5.37	5.69
F&D Costs (1-Year)	46.45	24.15	35.07	27.59	37.76	28.03	36.61	23.52	14.26	19.04	14.52	15.33	21.75
Return on Capital	16.59	10.43	14.64	14.99	22.24	17.17	20.14	14.77	8.61	13.04	12.25	10.88	14.31
Income Taxes	10.24	7.17	10.47	17.43	14.87	10.84	10.84	7.95	4.64	5.91	4.49	4.89	6.92
Breakeven Oil Price	**94.64**	**60.46**	**83.45**	**102.84**	**111.77**	**92.27**	**98.71**	**74.70**	**46.79**	**57.31**	**51.86**	**50.80**	**67.57**
Quality Differential	6.48	5.07	10.76	10.36	9.99	10.20	12.10	2.43	8.57	4.58	12.35	8.50	8.00
Required Brent Price	**101.12**	**65.53**	**94.21**	**113.20**	**121.76**	**102.47**	**110.81**	**77.13**	**55.35**	**61.89**	**64.20**	**59.30**	**75.57**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.07	12.40	15.73	21.91	22.20	23.56	18.64	15.27	12.67	11.89	14.37	12.96	14.92
Exploration Expense	5.67	3.45	3.30	7.84	5.00	7.65	6.84	6.73	1.23	1.42	1.51	1.38	3.98
G&A/Other	4.63	2.85	4.25	13.07	9.71	5.03	5.64	6.46	5.37	6.01	4.73	5.37	5.69
F&D Costs (1-Year)	37.30	8.55	44.00	62.70	55.77	43.51	31.15	30.32	31.50	21.02	20.60	22.22	26.92
Return on Capital	13.42	3.67	18.46	34.33	32.87	26.60	17.14	19.08	19.03	14.32	17.41	15.78	17.81
Income Taxes	8.28	2.52	13.20	39.92	21.98	16.79	9.23	10.27	10.24	6.49	6.38	7.09	8.62
Breakeven Oil Price	**80.35**	**33.44**	**98.93**	**179.77**	**147.52**	**123.15**	**88.64**	**88.13**	**80.04**	**61.15**	**65.00**	**64.81**	**77.93**
Quality Differential	6.48	5.07	10.76	10.36	9.99	10.20	12.10	2.43	8.57	4.58	12.35	8.50	8.00
Required Brent Price	**86.83**	**38.51**	**109.69**	**190.14**	**157.50**	**133.35**	**100.75**	**90.56**	**88.61**	**65.73**	**77.35**	**73.30**	**85.94**

Source: BMO Capital Markets, Company Reports

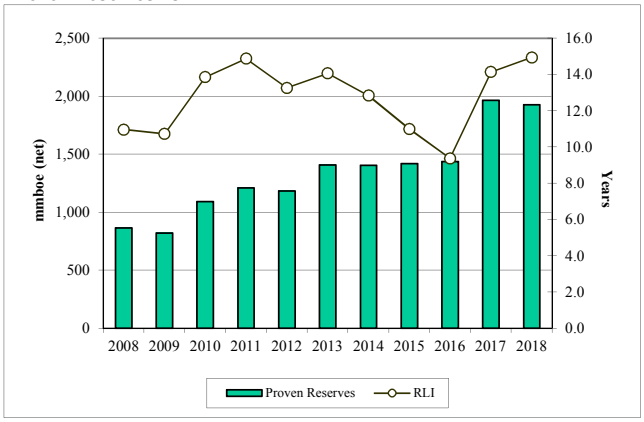
Noble Energy (NBL - NYSE)

US$, net

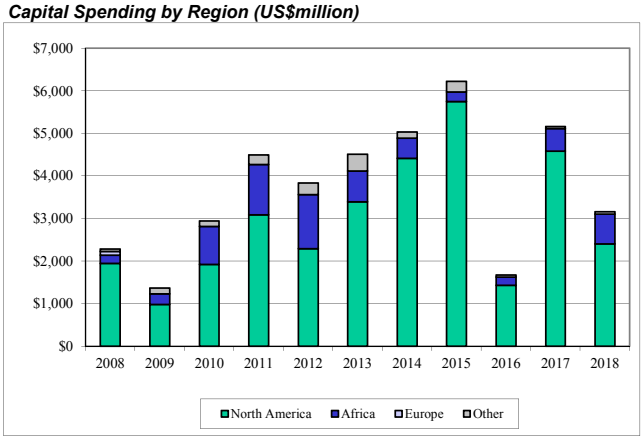
- Noble reported results of operations of $7.95/boe in 2018 versus $2.77/boe in 2017.
- The company's one-year F&D costs came in at $14.38/boe compared to $5.56/boe last year. On a realized oil:gas price ratio basis, F&D costs came in at $18.87/boe, while costs for PD reserves came in at $31.79/boe.
- Noble's 2018 results imply a required Brent breakeven oil price of $71.69/boe on a realized ratio basis, while its PD reserve costs imply a Brent breakeven oil price of $97.67/boe.
- The company reported ROCE of 0.2% in 2018 versus a normalized loss on capital of 3.0% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

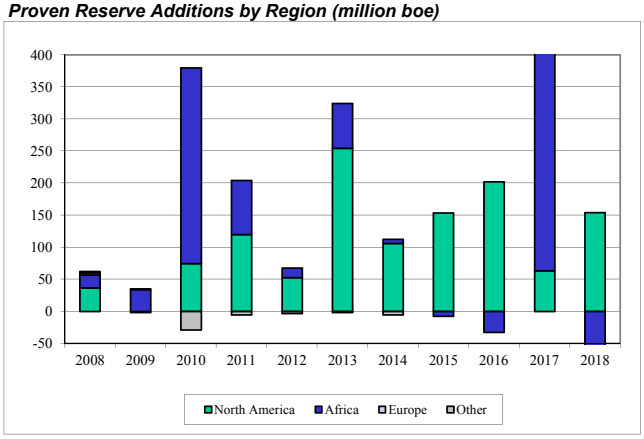
Proven Reserves vs RLI



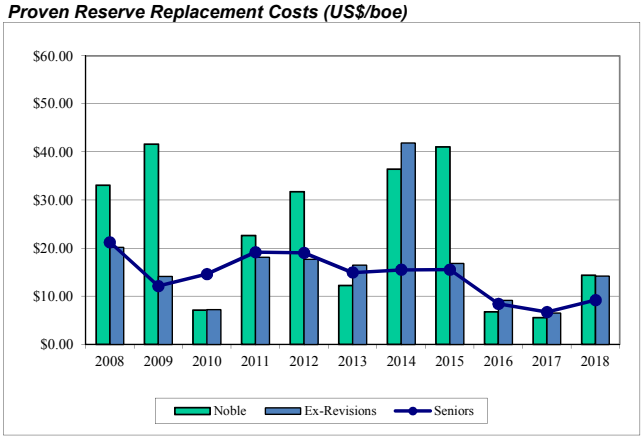
Capital Spending by Region (US$million)



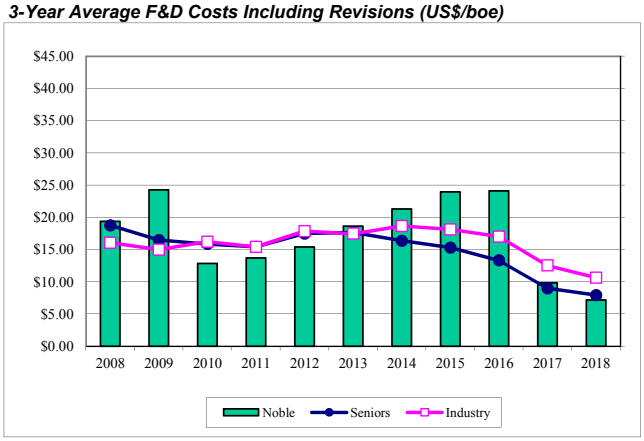
Proven Reserve Additions by Region (million boe)



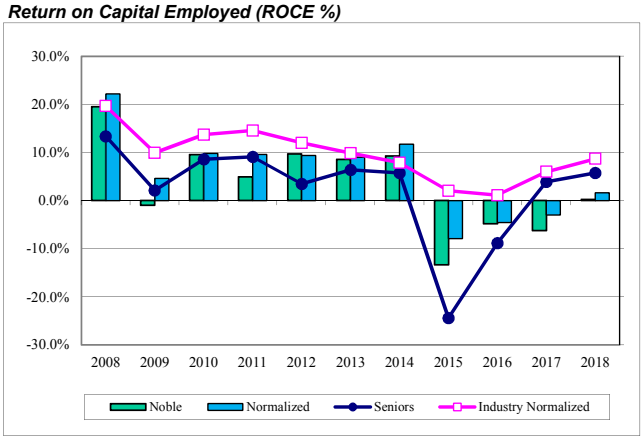
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

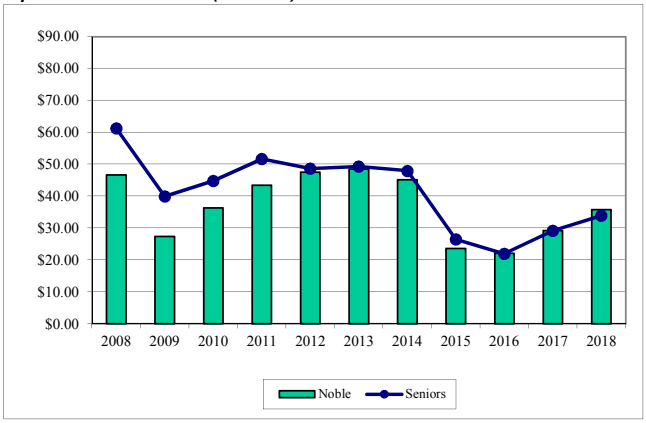
See pages F1 to F4 for analyst coverage.

Noble Energy (NBL - NYSE)

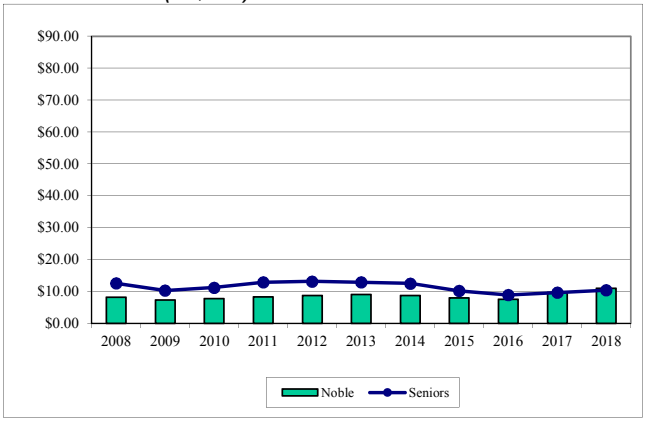
US$/boe, net

Worldwide

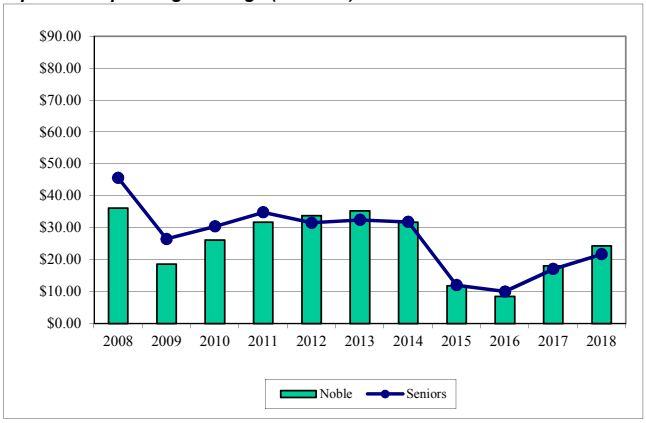
Upstream Net Revenue (US$/boe)



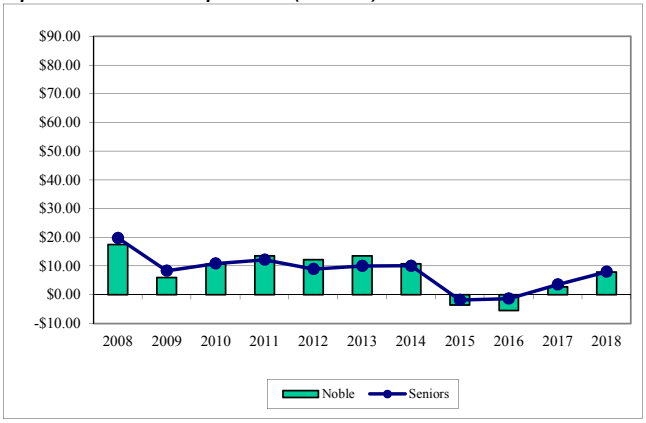
Production Costs (US$/boe)



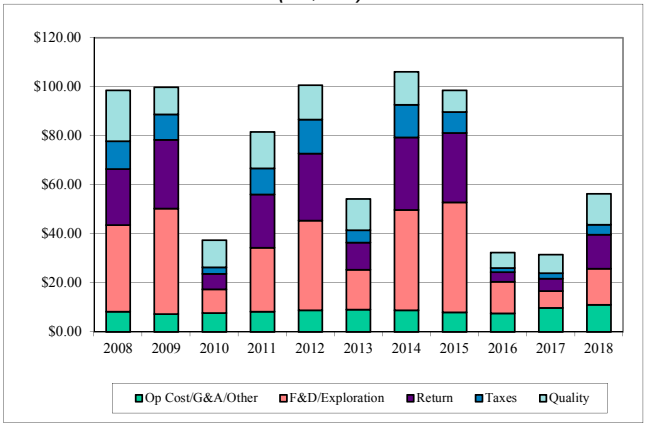
Upstream Operating Earnings (US$/boe)



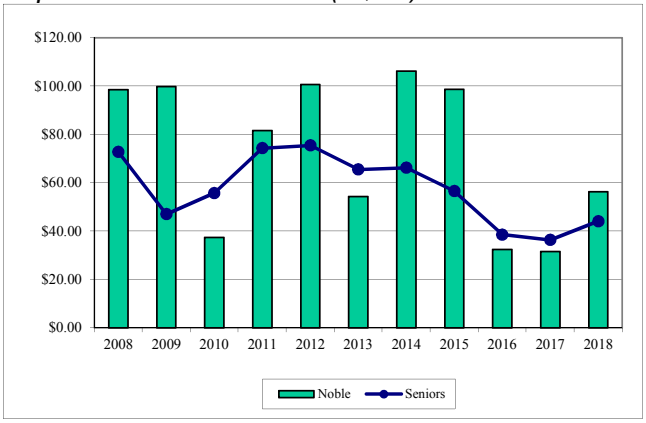
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



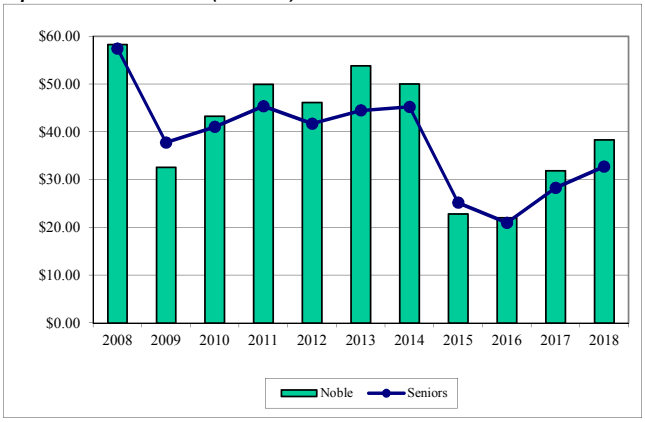
Source: BMO Capital Markets, Company Reports

Noble Energy (NBL - NYSE)

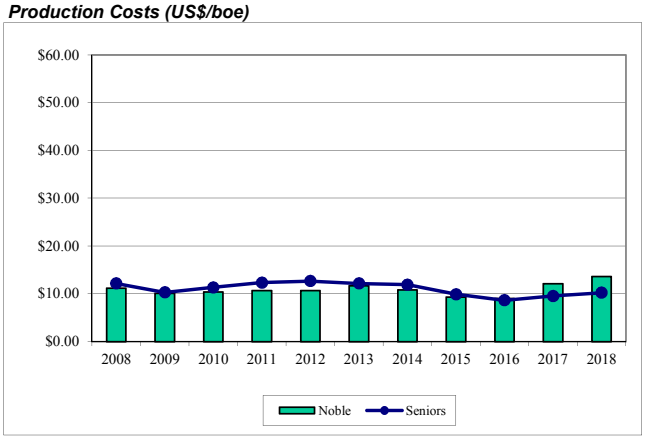
US$/boe, net

North America

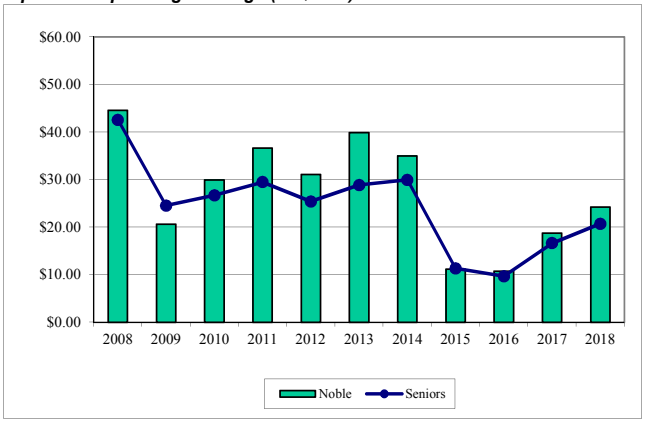
Upstream Net Revenue (US$/boe)



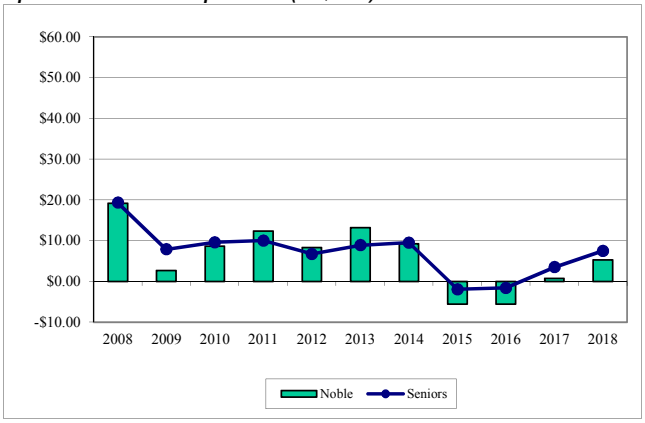
Production Costs (US$/boe)



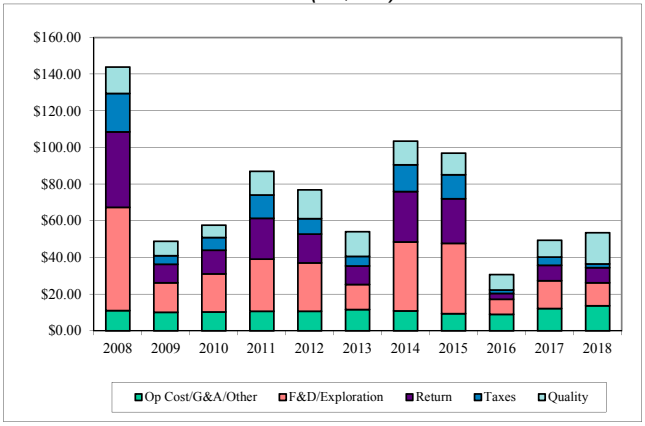
Upstream Operating Earnings (US$/boe)



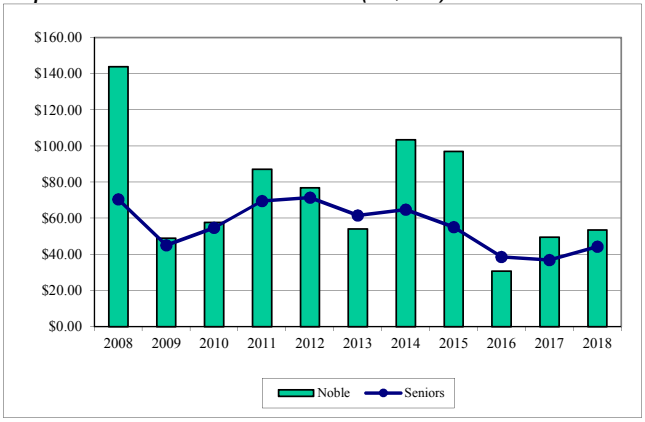
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



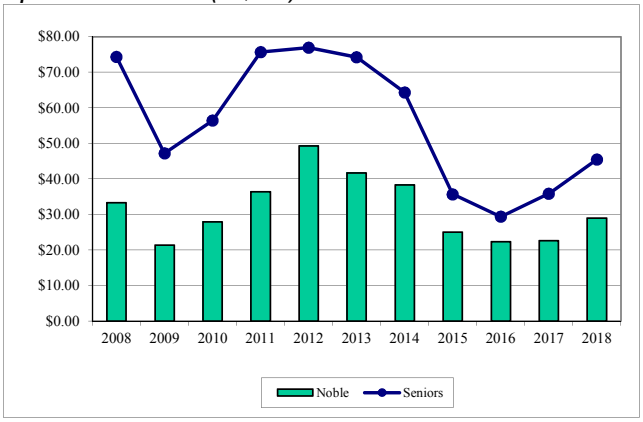
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Noble Energy (NBL - NYSE)

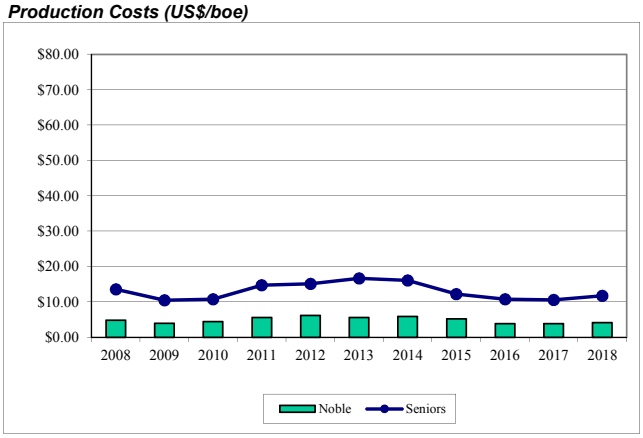
US$/boe, net

Total International

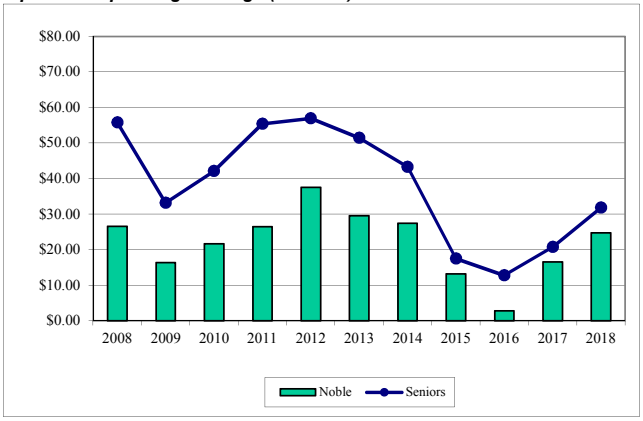
Upstream Net Revenue (US$/boe)



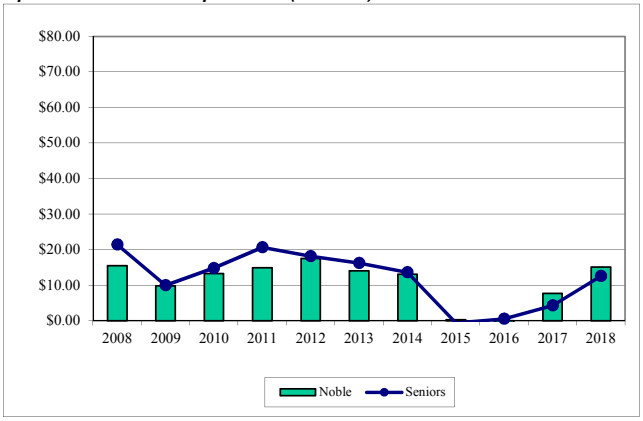
Production Costs (US$/boe)



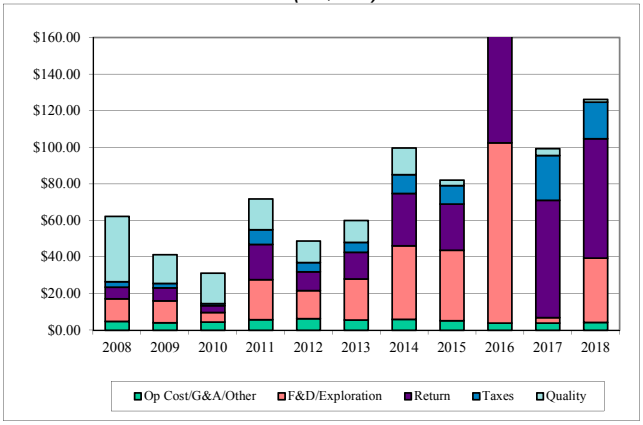
Upstream Operating Earnings (US$/boe)



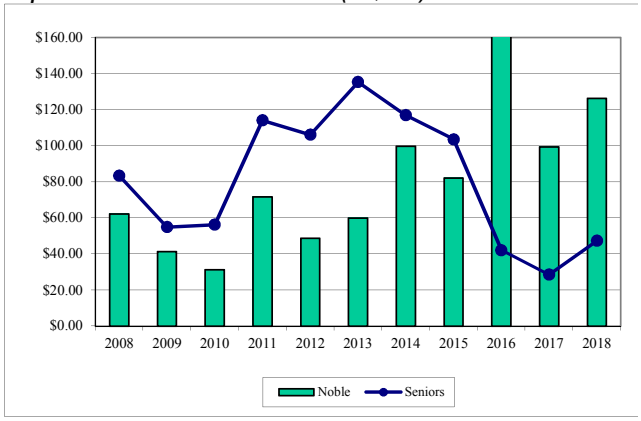
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



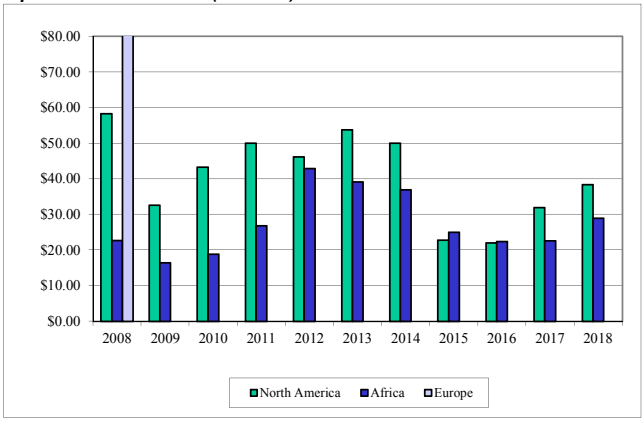
Source: BMO Capital Markets, Company Reports

Noble Energy (NBL - NYSE)

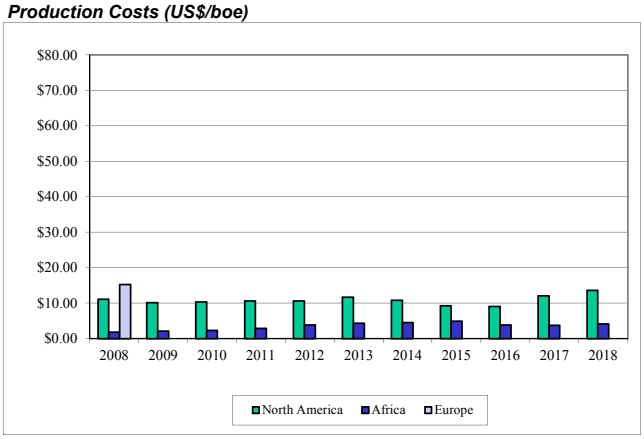
US$/boe, net

International Segments

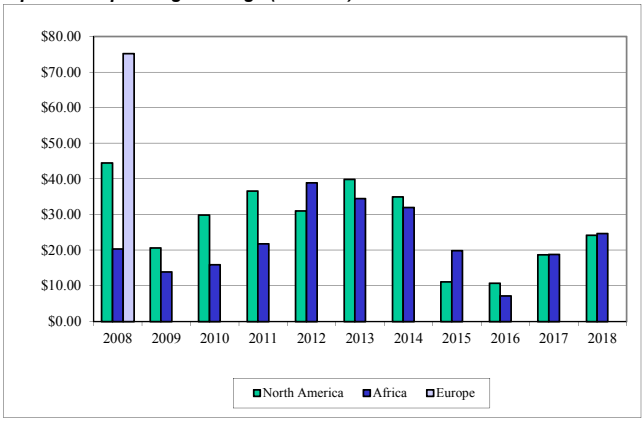
Upstream Net Revenue (US$/boe)



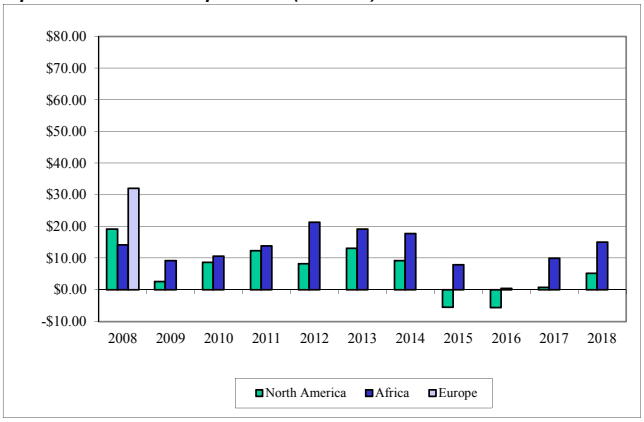
Production Costs (US$/boe)



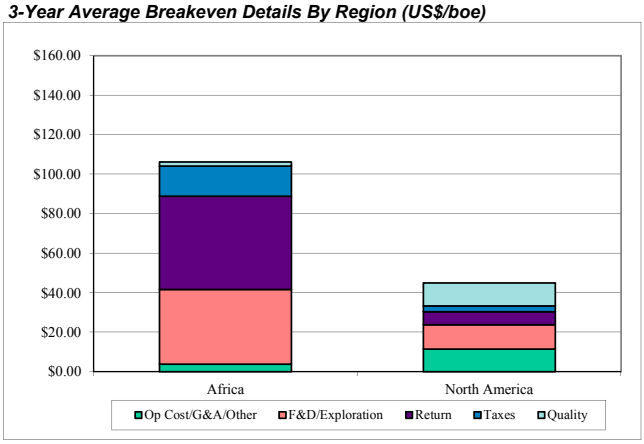
Upstream Operating Earnings (US$/boe)



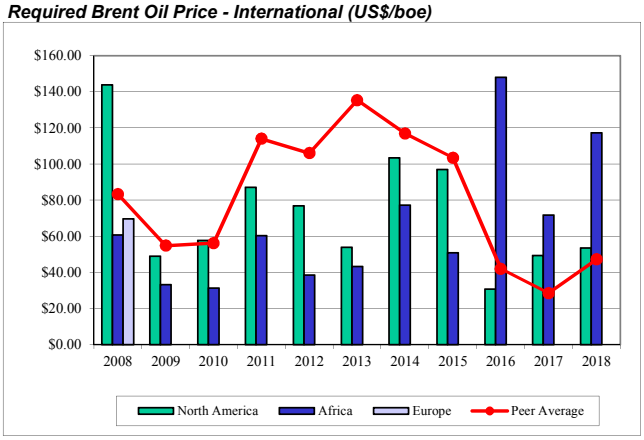
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details By Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

Noble Energy (NBL - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	3,825	2,144	2,950	3,731	4,037	4,809	4,931	3,043	3,389	4,060	4,461
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	76	169	72	32	186	206	170	90	102	196	525
Total Revenue and Other Income	3,901	2,313	3,022	3,763	4,223	5,015	5,101	3,133	3,491	4,256	4,986
Crude Oil and Product Purchases	-	-	-	-							
Production and Transportation Expenses	594	570	570	618	673	844	947	962	1,083	1,141	1,197
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	217	144	245	279	409	415	498	488	925	188	129
General and Administrative	236	237	277	341	384	433	503	396	399	415	385
Depreciation, Depletion and Amortization	791	816	883	965	1,370	1,568	1,759	2,131	2,454	2,053	1,934
Interest, net	69	84	72	65	125	158	210	263	328	354	282
Other	(67)	726	(56)	780	(94)	253	(526)	1,112	74	2,296	919
Earnings Before Income Tax	2,061	(264)	1,031	715	1,356	1,344	1,710	(2,219)	(1,772)	(2,191)	140
Current Income Taxes	352	163	235	343	282	168	228	106	197	86	196
Future Income Taxes	359	(296)	71	(81)	109	269	268	116	(984)	(1,227)	(70)
Total Income Taxes	711	(133)	306	262	391	437	496	222	(787)	(1,141)	126
Minority Interest	-	-	-	-	-	-	-	-	(13)	(68)	(80)
Earnings From Continuing Operations	1,350	(131)	725	453	965	907	1,214	(2,441)	(998)	(1,118)	(66)
Discontinued Operations	-	-	-	-	62	71	-	-	-		
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	1,350	(131)	725	453	1,027	978	1,214	(2,441)	(998)	(1,118)	(66)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	1,350	(131)	725	453	1,027	978	1,214	(2,441)	(998)	(1,118)	(66)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	1,350	(131)	725	453	1,027	978	1,214	(2,441)	(998)	(1,118)	(66)
Charges and Credits Not Impacting Cash	1,528	1,135	1,156	1,748	1,798	2,074	2,753	3,046	2,141	905	3,352
Other	(590)	651	(93)	125	(26)	176	(873)	1,586	668	2,314	(903)
Cash Flow From Operations	2,288	1,655	1,788	2,326	2,799	3,228	3,094	2,191	1,811	2,101	2,383
Change in Working Capital / Other	(3)	(147)	158	(156)	134	(291)	412	(129)	(460)	(150)	(47)
Net Cash From Operating Activities	2,285	1,508	1,946	2,170	2,933	2,937	3,506	2,062	1,351	1,951	2,336
Total Capital Expenditures	(1,971)	(1,268)	(1,885)	(2,594)	(3,650)	(3,947)	(4,871)	(2,979)	(1,541)	(2,649)	(3,279)
Acquisitions, net	(161)	3	106	(527)	1,119	279	321	212	1,028	1,130	1,346
Other	-	-	-	8	4	(7)	85	(104)	82	(87)	2
Net Cash From Investing Activities	(2,132)	(1,265)	(1,779)	(3,113)	(2,527)	(3,675)	(4,465)	(2,871)	(431)	(1,606)	(1,931)
Net Change in Debt	394	(264)	(32)	1,478	-	985	1,223	(153)	(833)	(858)	(139)
Net Change in Common Stock	(3)	(1)	(13)	(17)	(13)	(14)	(16)	1,112	299	(295)	(295)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(115)	(126)	(127)	(143)	(164)	(198)	(249)	(291)	(172)	(190)	(208)
Other	51	22	72	(1)	(297)	(305)	67	(14)	(62)	493	243
Net Cash From Financing Activities	327	(369)	(100)	1,317	(474)	468	1,025	654	(768)	(850)	(399)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	480	(126)	67	374	(68)	(270)	66	(155)	152	(505)	6
Cash and Equivalents, Beginning of Year	660	1,140	1,014	1,081	1,455	1,387	1,117	1,183	1,028	1,180	713
Cash and Equivalents, End of Year	1,140	1,014	1,081	1,455	1,387	1,117	1,183	1,028	1,180	675	719

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Noble Energy (NBL - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	2,158	1,678	1,838	2,418	2,771	2,611	3,075	2,276	1,955	2,203	1,750
Net Property, Plant and Equipment	9,004	8,916	10,264	12,782	13,551	15,725	18,143	21,300	18,548	17,502	18,419
Other Assets	1,222	1,213	1,180	1,244	1,232	1,306	1,335	620	508	1,771	841
Total Assets	12,384	11,807	13,282	16,444	17,554	19,642	22,553	24,196	21,011	21,476	21,010
Total Current Liabilities	1,174	990	1,422	2,268	2,532	2,342	2,522	1,805	1,478	1,739	1,726
Long-term Debt	2,241	2,037	2,272	4,100	3,736	4,566	6,103	7,976	7,011	6,746	6,574
Deferred Income Taxes	2,174	2,076	2,110	2,059	2,218	2,441	2,516	2,826	1,819	1,127	
Other Liabilities and Deferred Credits	486	547	630	752	810	1,109	1,087	1,219	1,103	1,245	2,226
Total Liabilities	6,075	5,650	6,434	9,179	9,296	10,458	12,228	13,826	11,411	10,857	10,526
Minority Interests	-	-	-	-	-	-	-	-	312	683	1,058
Common Shares	641	645	651	656	2	4	4	5	5	5	5
Contributed Surplus (Paid-in Capital)	2,193	2,260	2,385	2,497	3,304	3,463	3,624	6,360	6,450	8,438	8,203
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	4,199	3,942	4,540	4,850	5,713	6,493	7,458	4,726	3,556	2,248	1,980
Other / Comprehensive Income (Loss)	(724)	(690)	(728)	(738)	(761)	(776)	(761)	(721)	(723)	(755)	(762)
Total Shareholders' Equity	6,309	6,157	6,848	7,265	8,258	9,184	10,325	10,370	9,288	9,936	9,426
Total Liabilities and Shareholders' Equity	12,384	11,807	13,282	16,444	17,554	19,642	22,553	24,196	21,011	21,476	21,010
Return on Capital Employed (ROCE)	**19.5%**	**-1.0%**	**9.6%**	**5.0%**	**9.7%**	**8.6%**	**9.3%**	**-13.4%**	**-4.8%**	**-6.2%**	**0.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	3,681	2,095	2,867	3,536	4,244	4,846	4,931	3,043	3,389	4,060	4,613	12,062	20,036
Production Costs	647	559	608	673	780	901	958	1,027	1,162	1,353	1,423	3,938	5,923
Exploration	182	110	196	279	438	415	498	488	925	188	51	1,164	2,150
DD&A	785	798	862	940	1,370	1,570	1,759	2,131	2,454	1,965	1,817	6,236	10,126
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	2,067	628	1,201	1,644	1,656	1,960	1,716	-603	-1,152	554	1,322	724	1,837
Income Taxes	687	171	353	541	557	606	531	-141	-324	169	296	141	531
Results Of Operations	1,380	457	848	1,103	1,099	1,354	1,185	-462	-828	385	1,026	583	1,306

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	2,459	1,341	1,874	2,124	2,339	3,004	3,175	1,961	2,416	3,156	3,590	9,162	14,298
Production Costs	470	417	449	453	539	653	688	800	992	1,199	1,276	3,467	4,955
Exploration	111	75	130	116	225	124	268	202	245	102	48	395	865
DD&A	653	689	719	732	929	1,117	1,318	1,692	2,122	1,739	1,642	5,503	8,513
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	1,225	160	576	823	646	1,110	901	-733	-943	116	624	-203	-35
Income Taxes	415	50	202	299	227	375	315	-257	-330	41	132	-158	-99
Results Of Operations	810	110	374	524	419	735	586	-476	-613	75	492	-45	64

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	1,222	754	993	1,412	1,905	1,842	1,756	1,082	973	904	1,023	2,900	5,738
Production Costs	177	142	159	220	241	248	270	227	170	154	147	471	968
Exploration	71	35	66	163	213	291	230	286	680	86	3	769	1,285
DD&A	132	109	143	208	441	453	441	439	332	226	175	733	1,613
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	842	468	625	821	1,010	850	815	130	-209	438	698	927	1,872
Income Taxes	272	120	152	242	331	231	216	116	6	128	165	299	630
Results Of Operations	570	348	473	579	679	619	599	14	-215	310	533	628	1,242

Source: BMO Capital Markets, Company Reports

Noble Energy (NBL - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$46.69	$27.39	$36.37	$43.48	$47.51	$48.46	$45.10	$23.56	$22.13	$29.21	$35.76	$28.64	$30.37
Production Costs	$8.21	$7.31	$7.71	$8.27	$8.73	$9.01	$8.76	$7.95	$7.59	$9.73	$11.03	$9.35	$8.98
Exploration	$2.31	$1.44	$2.49	$3.43	$4.90	$4.15	$4.55	$3.78	$6.04	$1.35	$0.40	$2.76	$3.26
DD&A	$9.96	$10.43	$10.93	$11.56	$15.34	$15.70	$16.09	$16.50	$16.02	$14.14	$14.09	$14.81	$15.35
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$26.22	$8.21	$15.23	$20.21	$18.54	$19.60	$15.70	-$4.67	-$7.52	$3.99	$10.25	$1.72	$2.78
Income Taxes	$8.71	$2.23	$4.48	$6.65	$6.24	$6.06	$4.86	-$1.09	-$2.11	$1.21	$2.30	$0.34	$0.81
Results Of Operations	$17.51	$5.98	$10.75	$13.56	$12.30	$13.54	$10.84	-$3.58	-$5.41	$2.77	$7.95	$1.38	$1.98

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$58.32	$32.57	$43.25	$49.98	$46.16	$53.80	$50.00	$22.80	$22.03	$31.88	$38.33	$30.30	$31.64
Production Costs	$11.15	$10.13	$10.36	$10.66	$10.64	$11.70	$10.83	$9.30	$9.05	$12.11	$13.62	$11.47	$10.97
Exploration	$2.63	$1.82	$3.00	$2.73	$4.44	$2.22	$4.22	$2.35	$2.23	$1.03	$0.51	$1.31	$1.91
DD&A	$15.49	$16.74	$16.59	$17.22	$18.34	$20.01	$20.76	$19.67	$19.35	$17.57	$17.53	$18.20	$18.84
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$29.05	$3.89	$13.29	$19.36	$12.75	$19.88	$14.19	-$8.52	-$8.60	$1.17	$6.66	-$0.67	-$0.08
Income Taxes	$9.84	$1.22	$4.65	$7.04	$4.47	$6.72	$4.97	-$2.98	-$3.01	$0.41	$1.41	-$0.52	-$0.22
Results Of Operations	$19.21	$2.67	$8.64	$12.32	$8.28	$13.16	$9.22	-$5.54	-$5.59	$0.76	$5.26	-$0.15	$0.14

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$33.33	$21.34	$27.97	$36.36	$49.27	$41.71	$38.31	$25.07	$22.37	$22.60	$28.95	$24.40	$27.61
Production Costs	$4.83	$4.02	$4.48	$5.67	$6.23	$5.62	$5.89	$5.26	$3.91	$3.85	$4.16	$3.96	$4.66
Exploration	$1.94	$0.99	$1.86	$4.20	$5.51	$6.59	$5.02	$6.63	$15.63	$2.15	$0.08	$6.47	$6.18
DD&A	$3.60	$3.08	$4.03	$5.36	$11.41	$10.26	$9.62	$10.17	$7.63	$5.65	$4.95	$6.17	$7.76
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$22.96	$13.25	$17.61	$21.14	$26.12	$19.25	$17.78	$3.01	-$4.80	$10.95	$19.75	$7.80	$9.01
Income Taxes	$7.42	$3.40	$4.27	$6.23	$8.56	$5.23	$4.71	$2.68	$0.15	$3.20	$4.66	$2.51	$3.03
Results Of Operations	$15.55	$9.84	$13.33	$14.91	$17.56	$14.01	$13.08	$0.33	-$4.95	$7.75	$15.10	$5.29	$5.98

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$22.66	$16.41	$18.84	$26.84	$42.85	$39.12	$36.94	$24.95	$22.37	$22.60	$28.95	$24.40	$27.23
Production Costs	$1.86	$2.14	$2.27	$2.90	$3.83	$4.29	$4.48	$4.91	$3.84	$3.80	$4.16	$3.92	$4.25
Exploration	$0.45	$0.37	$0.63	$2.18	$0.08	$0.36	$0.49	$0.16	$11.38	$0.03	$0.08	$4.20	$2.55
DD&A	$1.97	$2.00	$2.13	$2.84	$10.31	$8.52	$8.07	$9.17	$6.57	$5.55	$4.95	$5.75	$6.97
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$18.38	$11.90	$13.81	$18.93	$28.62	$25.95	$23.89	$10.70	$0.57	$13.23	$19.75	$10.54	$13.46
Income Taxes	$4.17	$2.68	$3.13	$5.01	$7.23	$6.76	$6.07	$2.79	$0.15	$3.20	$4.66	$2.51	$3.34
Results Of Operations	$14.21	$9.22	$10.69	$13.91	$21.38	$19.19	$17.82	$7.91	$0.43	$10.03	$15.10	$8.02	$10.12

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Net Revenue	$94.62	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	$15.23	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	$4.15	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	$12.69	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	$0.00	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	$62.54	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	$30.46	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	$32.08	na	na	na	na	na	na	na	na	na	na	na	na

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Noble Energy (NBL - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	769.9	780.8	786.3	811.0	778.1	904.1	991.8	1,186.3	1,400.0	1,117.8	920.5	1,146.1	1,123.3
Liquids Production (b/d)	87,671	79,452	84,932	87,671	115,068	123,288	134,247	156,164	186,301	194,521	200,000	193,607	174,247
Total Production (boe/d)	215,982	209,589	215,982	222,831	244,749	273,973	299,543	353,881	419,635	380,822	353,425	384,627	361,461
% Gas Production	59%	62%	61%	61%	53%	55%	55%	56%	56%	49%	43%	50%	52%
% Oil Production	41%	38%	39%	39%	47%	45%	45%	44%	44%	51%	57%	50%	48%
Proven Reserves:													
Gas Reserves (bcf)	3,315.5	2,904.5	4,361.5	5,043.5	4,964.5	5,828.5	5,833.5	5,549.5	5,308.5	7,680.5	7,231.5	6,740.1	6,320.7
Oil Reserves (mmbbls)	311.8	336.8	365.8	369.8	357.8	435.8	432.0	496.0	552.0	686.0	723.0	653.7	577.8
Total Proven Reserves (mmboe)	864.4	820.9	1,092.7	1,210.4	1,185.2	1,407.2	1,404.2	1,420.9	1,436.7	1,966.1	1,928.2	1,777.0	1,631.2
% Gas Reserves	64%	59%	67%	69%	70%	69%	69%	65%	62%	65%	63%	63%	65%
% Oil Reserves	36%	41%	33%	31%	30%	31%	31%	35%	38%	35%	37%	37%	35%
Proven Reserve Life Index	11.0	10.7	13.9	14.9	13.3	14.1	12.8	11.0	9.4	14.1	14.9	12.8	12.5
Proven Reserve Additions:													
Gas Additions (bcf)	289.0	(126.0)	1,744.0	978.0	205.0	1,194.0	367.0	149.0	270.0	2,780.0	-113.0	2,937.0	3,453.0
Oil Additions (mmbbls)	14.0	54.0	60.0	36.0	30.0	123.0	46.0	121.0	124.0	205.0	110.0	439.0	606.0
Total Additions (mmboe)	62.2	33.0	350.7	199.0	64.2	322.0	107.2	145.8	169.0	668.3	91.2	928.5	1,181.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	98.2	95.3	360.3	180.7	216.8	249.8	120.2	99.8	179.0	737.0	222.8	1,138.8	1,358.8
Acquisitions	15.0	2.0	46.2	67.7	0.0	24.0	0.0	269.8	4.0	57.7	0.0	61.7	331.5
Dispositions	(7.0)	0.0	(60.5)	-	(56.7)	(47.2)	(31.0)	(5.7)	(77.0)	(260.8)	(128.8)	(466.7)	(503.3)
Revisions of Estimates	(44.0)	(64.3)	4.7	-49.3	-96.0	95.3	18.0	-218.2	63.0	134.5	-2.8	194.7	(5.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	157.9%	288.9%	102.8%	90.8%	337.9%	77.6%	112.1%	68.5%	105.9%	110.3%	244.4%	122.7%	115.0%
Acquisitions	24.1%	6.1%	13.2%	34.0%	0.0%	7.5%	0.0%	185.0%	2.4%	8.6%	0.0%	6.6%	28.1%
Dispositions	-11.3%	0.0%	-17.3%	0.0%	-88.3%	-14.6%	-28.9%	-3.9%	-45.6%	-39.0%	-141.3%	-50.3%	-42.6%
Revisions of Estimates	-70.8%	-194.9%	1.3%	-24.8%	-149.6%	29.6%	16.8%	-149.6%	37.3%	20.1%	-3.1%	21.0%	-0.5%
Additions as % of Production:													
Gas	102.8%	-44.2%	607.7%	330.4%	72.2%	361.8%	101.4%	34.4%	52.8%	681.4%	-33.6%	234.0%	168.4%
Oil	43.8%	186.2%	193.5%	112.5%	71.4%	273.3%	93.9%	212.3%	182.4%	288.7%	150.7%	207.1%	190.6%
Total	78.9%	43.1%	444.8%	244.7%	71.8%	322.0%	98.0%	112.9%	110.3%	480.8%	70.7%	220.5%	179.1%
Additions as % of Reserves:													
Gas	8.7%	-4.3%	40.0%	19.4%	4.1%	20.5%	6.3%	2.7%	5.1%	36.2%	-1.6%	43.6%	54.6%
Oil	4.5%	16.0%	16.4%	9.7%	8.4%	28.2%	10.6%	24.4%	22.5%	29.9%	15.2%	67.2%	104.9%
Total	7.2%	4.0%	32.1%	16.4%	5.4%	22.9%	7.6%	10.3%	11.8%	34.0%	4.7%	52.3%	72.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$517.0	$313.0	$418.0	$593.0	$689.0	$1,010.0	$670.0	$484.0	$359.0	$159.0	$153.0	$671.0	$1,825.0
Development	$1,213.0	$973.0	$1,871.0	$2,532.0	$3,048.0	$3,295.0	$4,118.0	$2,644.0	$1,079.0	$2,347.0	$2,970.0	$6,396.0	$13,158.0
Acquisitions	$558.0	$87.0	$657.0	$1,374.0	$96.0	$209.0	$249.0	$3,093.0	$234.0	$2,656.0	$41.0	$2,931.0	$6,273.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$2,288.0	$1,373.0	$2,946.0	$4,499.0	$3,833.0	$4,514.0	$5,037.0	$6,221.0	$1,672.0	$5,162.0	$3,164.0	$9,998.0	$21,256.0
Expenditures as % of Total:													
Exploration	22.6%	22.8%	14.2%	13.2%	18.0%	22.4%	13.3%	7.8%	21.5%	3.1%	4.8%	6.7%	8.6%
Development	53.0%	70.9%	63.5%	56.3%	79.5%	73.0%	81.8%	42.5%	64.5%	45.5%	93.9%	64.0%	61.9%
Acquisitions	24.4%	6.3%	22.3%	30.5%	2.5%	4.6%	4.9%	49.7%	14.0%	51.5%	1.3%	29.3%	29.5%
Cashflow (US$million)	$2,347.1	$1,365.5	$1,905.7	$2,321.7	$2,906.6	$3,338.8	$3,442.0	$2,156.9	$2,550.7	$2,538.4	$2,893.8	$7,982.8	$13,581.7
Cashflow (US$/boe)	$29.77	$17.85	$24.17	$28.55	$32.54	$33.39	$31.48	$16.70	$16.65	$18.26	$22.43	$18.95	$20.59
Recycle Ratio	0.9x	0.4x	3.4x	1.3x	1.0x	2.7x	0.9x	0.4x	2.5x	3.3x	1.6x	2.6x	1.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$31.94	$41.48	$6.27	$23.79	$30.93	$12.47	$34.65	-$26.43	$5.94	$2.88	$14.20	$5.30	$11.07
Acquisition Costs	$37.20	$43.50	$14.23	$20.31	na	$8.71	na	$11.46	$58.50	$46.06	na	$47.53	$18.92
All Sources (incl. revisions)	$33.08	$41.61	$7.16	$22.61	$31.72	$12.23	$36.46	$41.06	$6.80	$5.56	$14.38	$7.17	$12.62
Exploration & Development (excl. revisions)	$17.62	$13.49	$6.35	$17.30	$17.23	$17.23	$39.84	$31.33	$8.03	$3.40	$14.01	$6.21	$11.03
Acquisition Costs	$37.20	$43.50	$14.23	$20.31	na	$8.71	na	$11.46	$58.50	$46.06	na	$47.53	$18.92
All Sources (excl. revisions)	$20.22	$14.11	$7.25	$18.12	$17.68	$16.48	$41.92	$16.83	$9.14	$6.50	$14.20	$8.33	$12.58
Geographically Segmented Costs													
North America	$53.56	-$492.00	$17.75	$25.75	$21.91	$11.38	$33.50	$36.14	$5.91	$14.14	$12.11	$11.00	$17.59
Africa	$9.37	$7.28	$2.92	$14.01	$84.33	$10.31	$75.16	-$29.09	$67.41	$0.88	$32.54	$2.28	$3.41
Europe	$28.20	na	na	na	na	na	na	na	na	na	na	na	na
Other	$28.00	$108.00	-$4.42	-$42.94	-$81.30	-$200.00	-$27.19	na	na	na	na	na	na

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Noble Energy (NBL - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	8.21	7.31	7.71	8.27	8.73	9.01	8.76	7.95	7.59	9.73	11.03	9.35	8.98
Exploration Expense	2.31	1.44	2.49	3.43	4.90	4.15	4.55	3.78	6.04	1.35	0.40	2.76	3.26
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	33.08	41.61	7.16	22.61	31.72	12.23	36.46	41.06	6.80	5.56	14.38	7.17	12.62
Return on Capital	22.83	28.00	6.36	21.75	27.39	11.10	29.60	28.32	4.00	5.05	13.85	5.85	10.00
Income Taxes	11.36	10.44	2.65	10.67	13.90	4.97	13.26	8.64	1.56	2.21	4.00	2.16	3.71
Breakeven Oil Price	77.79	88.78	26.38	66.73	86.65	41.46	92.64	89.75	25.98	23.91	43.66	27.29	38.57
Quality Differential	20.71	11.12	10.97	14.83	14.00	12.78	13.56	8.89	6.43	7.65	12.71	8.93	9.84
Required Brent Price	98.50	99.90	37.35	81.56	100.65	54.25	106.20	98.63	32.41	31.55	56.36	36.22	48.41

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	11.15	10.13	10.36	10.66	10.64	11.70	10.83	9.30	9.05	12.11	13.62	11.47	10.97
Exploration Expense	2.63	1.82	3.00	2.73	4.44	2.22	4.22	2.35	2.23	1.03	0.51	1.31	1.91
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	53.56	14.23	17.75	25.75	21.91	11.38	33.50	36.14	5.91	14.14	12.11	11.00	17.59
Return on Capital	41.15	10.15	12.84	22.26	15.75	10.13	27.37	24.27	3.28	8.43	8.16	6.68	11.56
Income Taxes	21.07	4.65	6.92	12.72	8.51	5.17	14.74	13.07	1.77	4.54	2.18	2.91	5.49
Breakeven Oil Price	129.56	40.98	50.88	74.12	61.24	40.59	90.66	85.12	22.24	40.25	36.59	33.37	47.52
Quality Differential	14.23	7.96	6.78	12.98	15.68	13.43	12.77	11.86	8.51	9.21	16.94	11.55	11.86
Required Brent Price	143.79	48.94	57.65	87.10	76.92	54.02	103.43	96.98	30.75	49.46	53.52	44.92	59.38

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	4.83	4.02	4.48	5.67	6.23	5.62	5.89	5.26	3.91	3.85	4.16	3.96	4.66
Exploration Expense	1.94	0.99	1.86	4.20	5.51	6.59	5.02	6.63	15.63	2.15	0.08	6.47	6.18
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	10.42	11.11	3.37	17.85	9.98	15.82	35.22	31.85	82.94	35.16	35.17	39.69	37.23
Return on Capital	6.34	7.05	3.72	19.15	10.24	14.50	28.62	25.17	59.47	64.12	65.20	56.90	44.10
Income Taxes	3.02	2.44	1.19	8.00	4.99	5.42	10.30	10.18	22.54	24.43	20.10	20.21	16.13
Breakeven Oil Price	26.54	25.61	14.62	54.87	36.94	47.94	85.04	79.08	184.49	129.71	124.72	127.23	108.29
Quality Differential	35.61	15.61	16.61	16.85	11.80	11.96	14.64	2.96	1.17	3.78	1.50	2.15	4.81
Required Brent Price	62.15	41.21	31.23	71.72	48.74	59.90	99.68	82.04	185.67	133.48	126.22	129.38	113.10

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Operating Costs	1.86	2.14	2.27	2.90	3.83	4.29	4.48	4.91	3.84	3.80	4.16	3.92	4.25
Exploration Expense	0.45	0.37	0.63	2.18	0.08	0.36	0.49	0.16	11.38	0.03	0.08	4.20	2.55
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	9.37	7.28	2.92	14.01	8.25	10.31	27.02	20.74	67.41	26.75	32.54	33.61	33.61
Return on Capital	5.74	4.46	3.87	17.13	9.08	9.88	22.56	16.32	47.92	47.95	60.34	47.12	39.73
Income Taxes	1.69	1.29	1.13	6.18	3.07	3.48	7.68	5.77	16.31	15.31	18.61	15.20	13.20
Breakeven Oil Price	19.11	15.54	10.81	42.39	24.33	28.31	62.23	47.90	146.87	93.83	115.73	104.05	93.33
Quality Differential	41.69	17.81	20.52	18.05	14.15	15.00	14.99	3.08	1.17	3.78	1.50	2.15	4.90
Required Brent Price	60.80	33.35	31.34	60.44	38.48	43.31	77.22	50.98	148.04	97.60	117.23	106.20	98.23

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Europe													
Operating Costs	15.23	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	4.15	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	-	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	28.20	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	11.19	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	10.63	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	69.40	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	0.21	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	69.61	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Noble Energy (NBL - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	12.89	12.94	14.00	16.01	16.00	16.13	14.91	11.89	10.97	15.08	15.56	13.72	13.53
Exploration Expense	3.63	2.55	4.51	6.64	8.99	7.43	7.75	5.65	8.74	2.10	0.56	4.06	4.91
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	57.61	28.77	17.12	65.04	56.52	23.85	68.95	46.02	9.26	11.72	18.87	12.68	21.32
Return on Capital	40.68	20.56	13.87	53.23	34.60	17.39	49.33	29.40	5.17	8.59	14.57	8.72	14.26
Income Taxes	20.25	7.67	5.78	26.13	17.56	7.79	22.11	8.97	2.02	3.76	4.21	3.22	5.29
Breakeven Oil Price	**135.05**	**72.48**	**55.29**	**167.04**	**133.67**	**72.59**	**163.04**	**101.93**	**36.16**	**41.24**	**53.76**	**42.40**	**59.32**
Quality Differential	32.52	19.68	19.91	28.69	25.66	22.89	23.07	13.29	9.29	11.85	17.93	13.02	15.09
Required Brent Price	**167.57**	**92.17**	**75.20**	**195.73**	**159.33**	**95.47**	**186.11**	**115.22**	**45.46**	**53.09**	**71.69**	**55.42**	**74.41**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	12.89	12.94	14.00	16.01	16.00	16.13	14.91	11.89	10.97	15.08	15.56	13.72	13.53
Exploration Expense	3.63	2.55	4.51	6.64	8.99	7.43	7.75	5.65	8.74	2.10	0.56	4.06	4.91
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	84.05	87.33	74.09	73.04	80.29	24.39	54.39	46.00	11.46	28.60	31.79	23.47	34.45
Return on Capital	55.30	60.82	59.76	59.38	49.10	17.31	36.14	28.98	6.39	20.94	24.70	16.15	23.15
Income Taxes	27.52	22.67	24.91	29.15	24.91	7.75	16.19	8.84	2.50	9.16	7.13	5.97	8.59
Breakeven Oil Price	**183.39**	**186.30**	**177.27**	**184.22**	**179.29**	**73.01**	**129.38**	**101.37**	**40.05**	**75.87**	**79.74**	**63.36**	**84.63**
Quality Differential	32.52	19.68	19.91	28.69	25.66	22.89	23.07	13.29	9.29	11.85	17.93	13.02	15.09
Required Brent Price	**215.91**	**205.98**	**197.19**	**212.90**	**204.94**	**95.90**	**152.45**	**114.66**	**49.34**	**87.72**	**97.67**	**76.38**	**99.72**

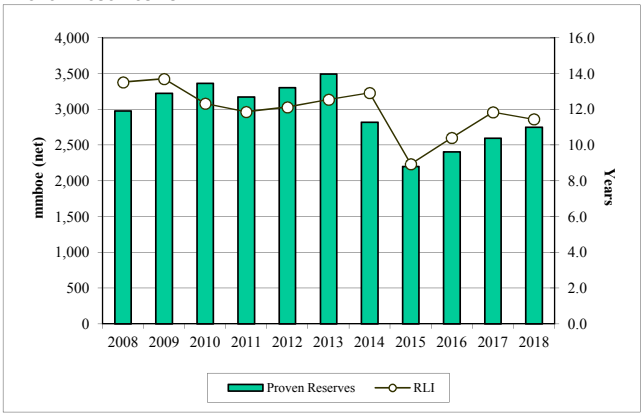
Source: BMO Capital Markets, Company Reports

Occidental Petroleum Corp. (OXY - NYSE) US$, net

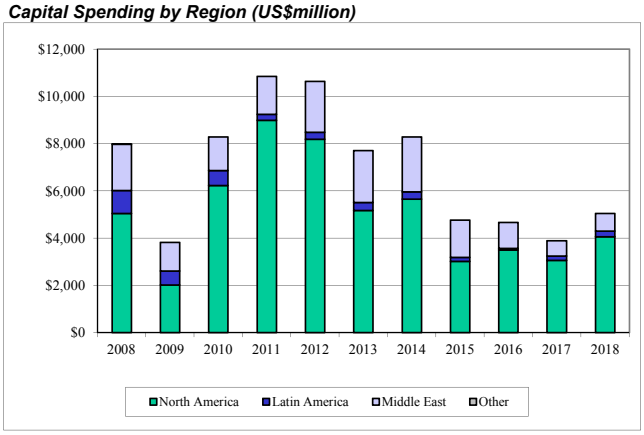
- Occidental reported results of operations of $6.83/boe in 2018 versus results of $2.37/boe in 2017.
- The company's one-year F&D costs moved to $12.30/boe in 2018 from $8.53/boe last year. On a realized oil:gas basis, F&D costs increased to $15.28/boe from $9.87/boe in 2017, while the costs for PD reserves also increased to $19.36/boe from $13.39/boe.
- Occidental's 2018 costs imply a required Brent breakeven oil price of $76.09/boe on total proved reserves, while its PD costs imply a breakeven of $85.02/boe.
- The company reported a return on capital of 15.0% in 2018 versus a normalized ROCE of 6.4% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

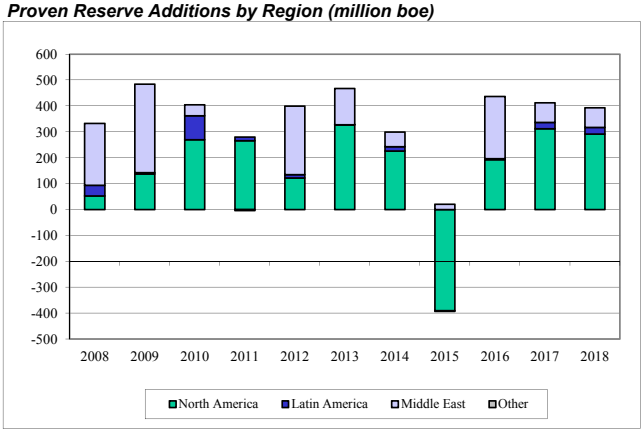
Proven Reserves vs RLI



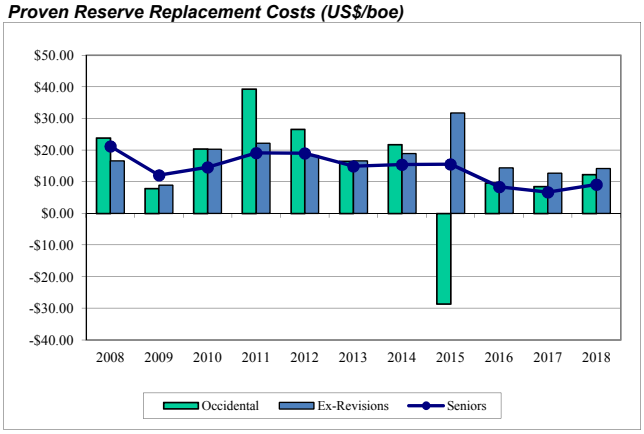
Capital Spending by Region (US$million)



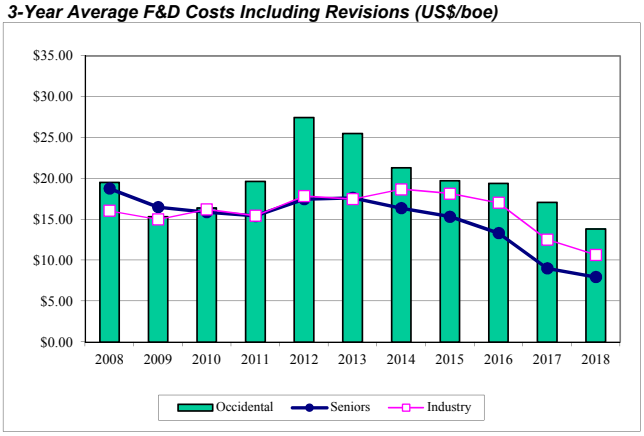
Proven Reserve Additions by Region (million boe)



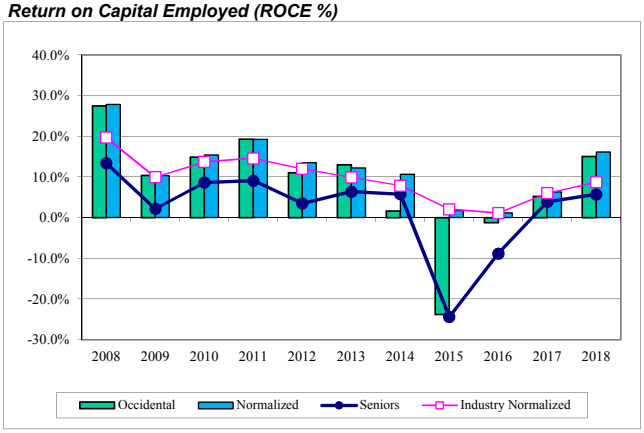
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

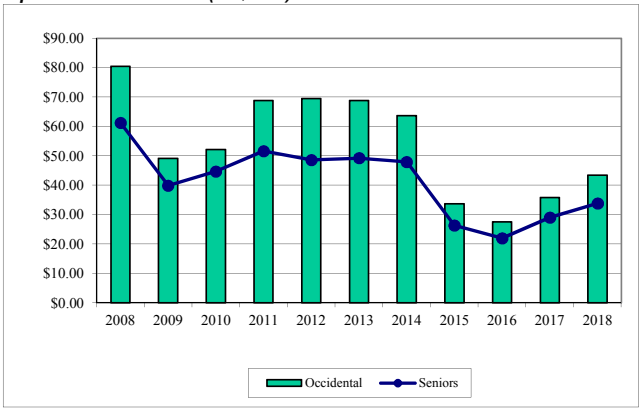
See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

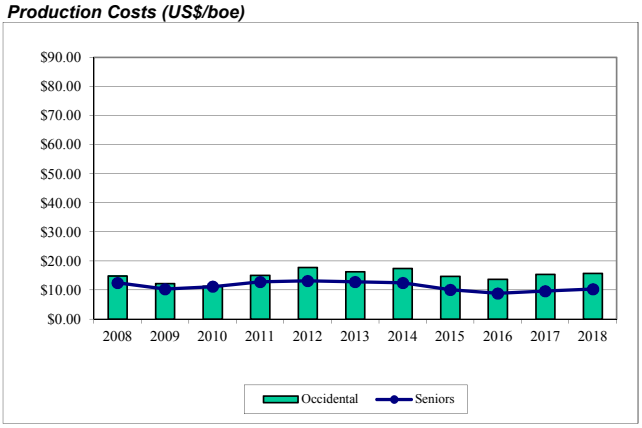
US$/boe, net

Worldwide

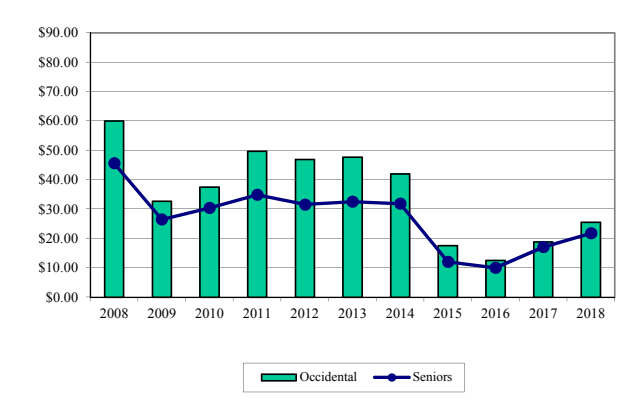
Upstream Net Revenue (US$/boe)



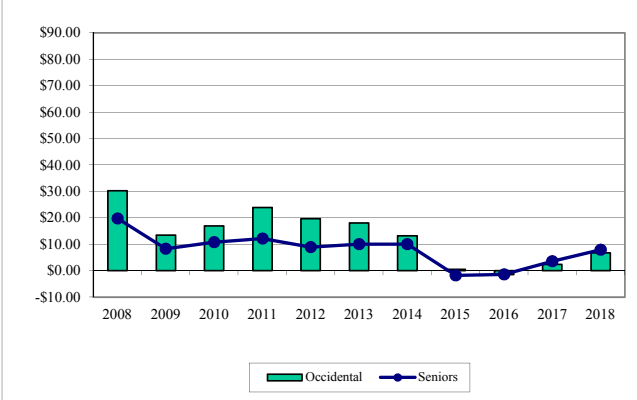
Production Costs (US$/boe)



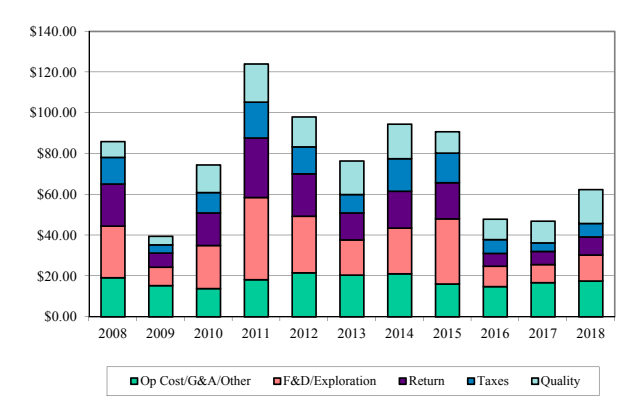
Upstream Operating Earnings (US$/boe)



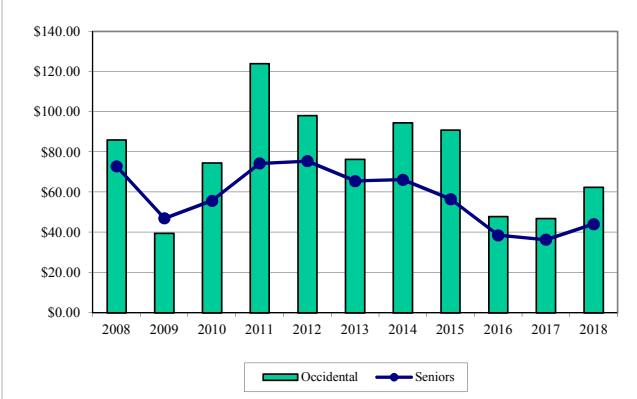
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



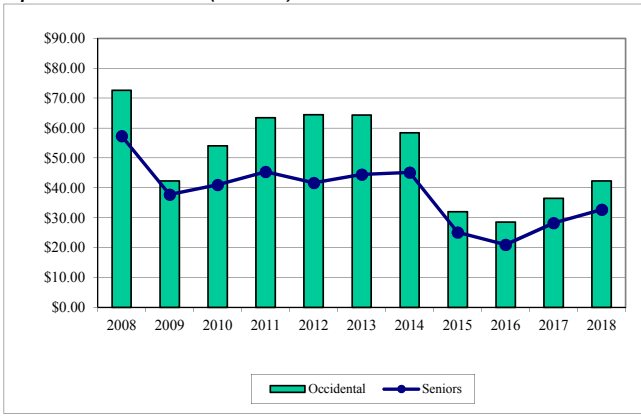
Source: BMO Capital Markets, Company Reports

Occidental Petroleum Corp. (OXY - NYSE)

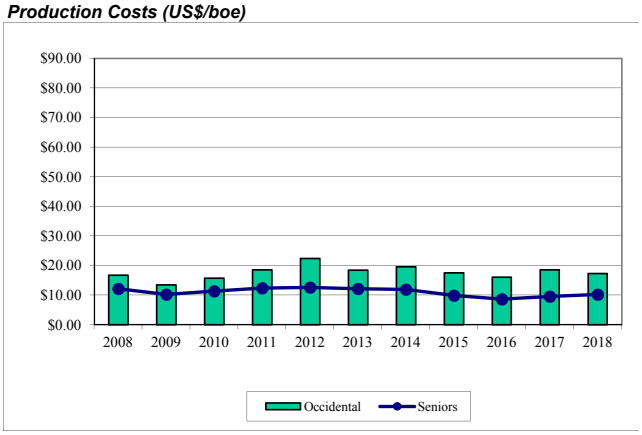
US$/boe, net

North America

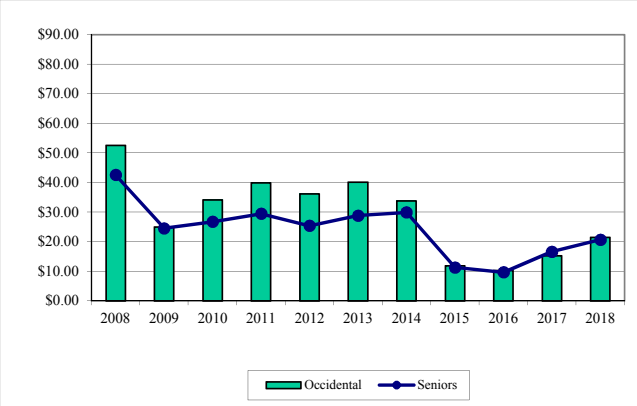
Upstream Net Revenue (US$/boe)



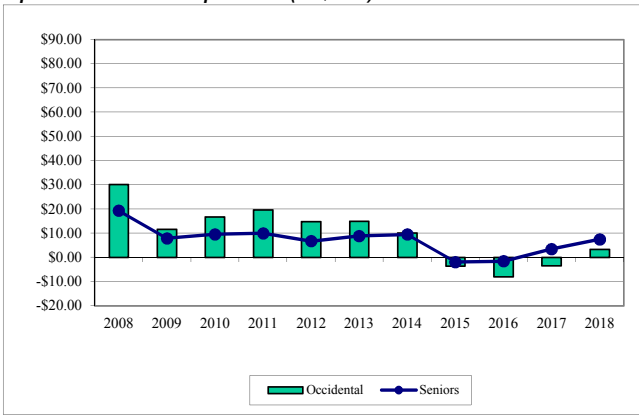
Production Costs (US$/boe)



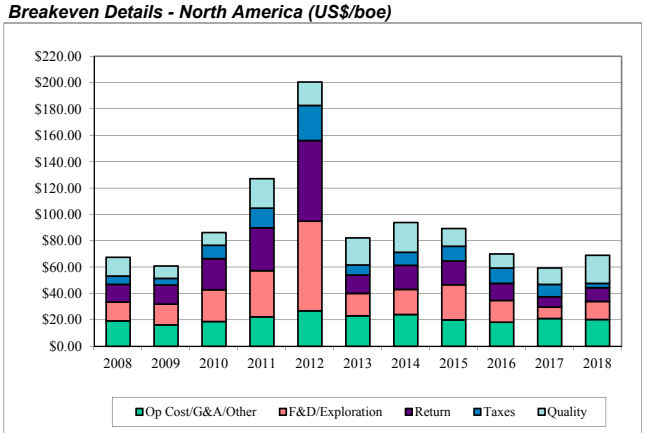
Upstream Operating Earnings (US$/boe)



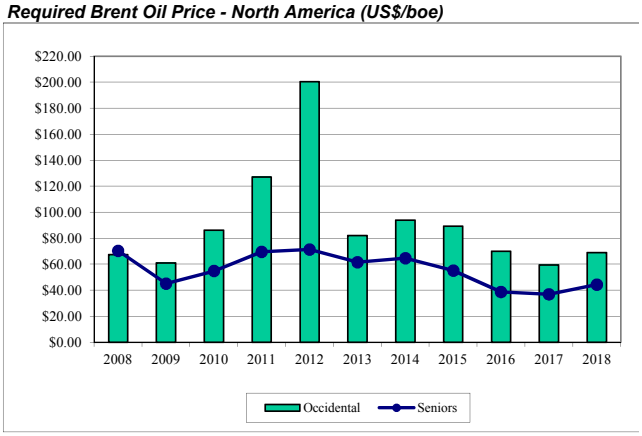
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



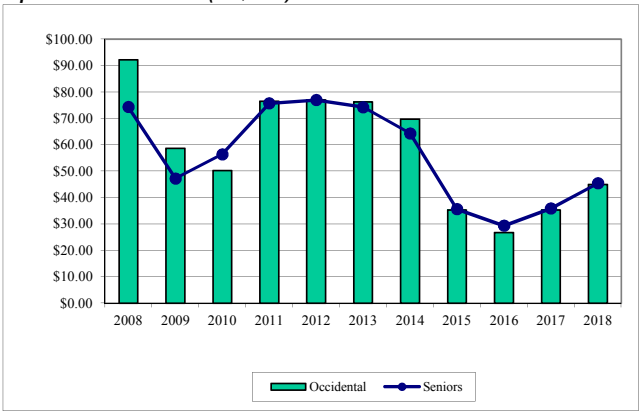
Source: BMO Capital Markets, Company Reports

Occidental Petroleum Corp. (OXY - NYSE)

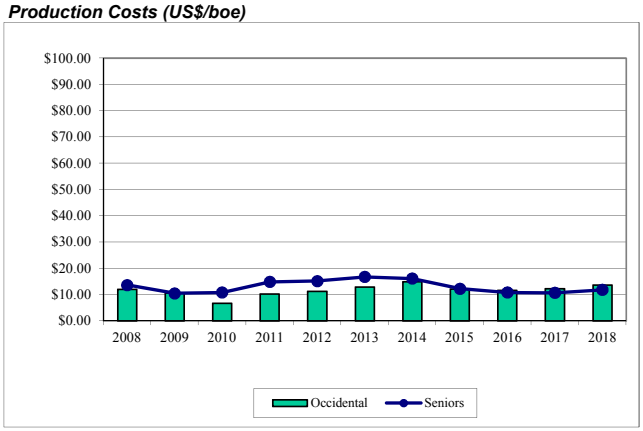
US$/boe, net

Total International

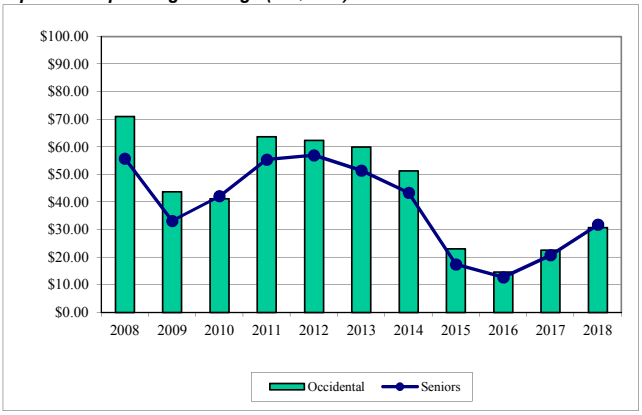
Upstream Net Revenue (US$/boe)



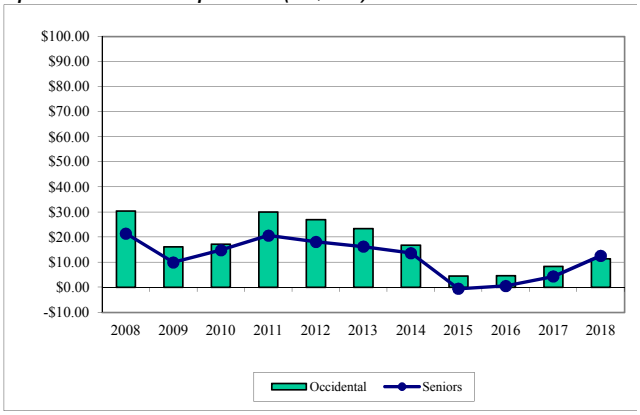
Production Costs (US$/boe)



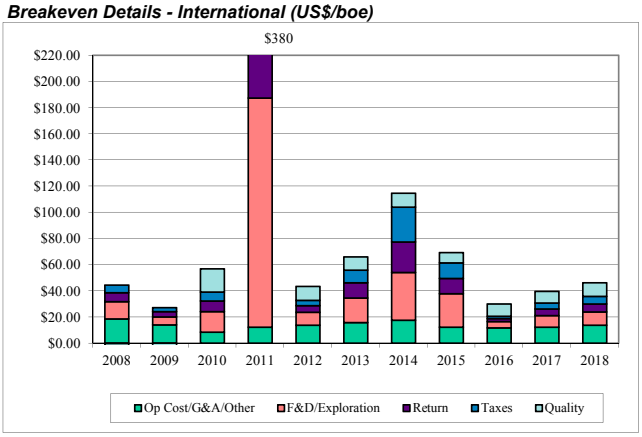
Upstream Operating Earnings (US$/boe)



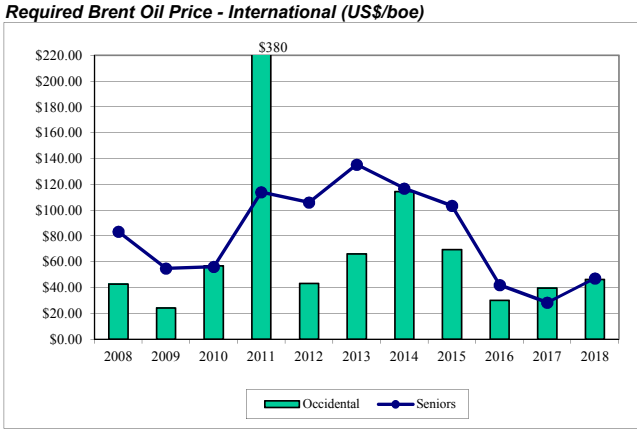
Upstream Results of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



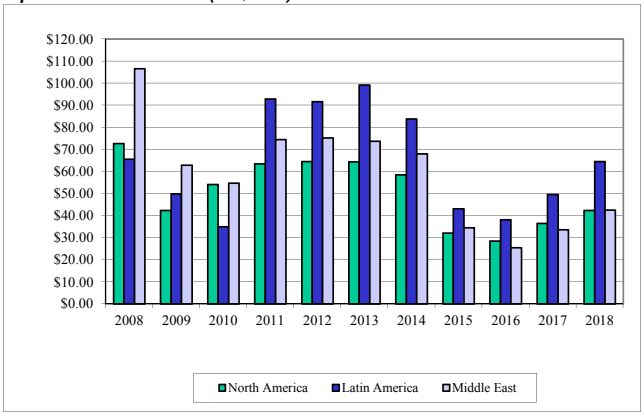
Source: BMO Capital Markets, Company Reports

Occidental Petroleum Corp. (OXY - NYSE)

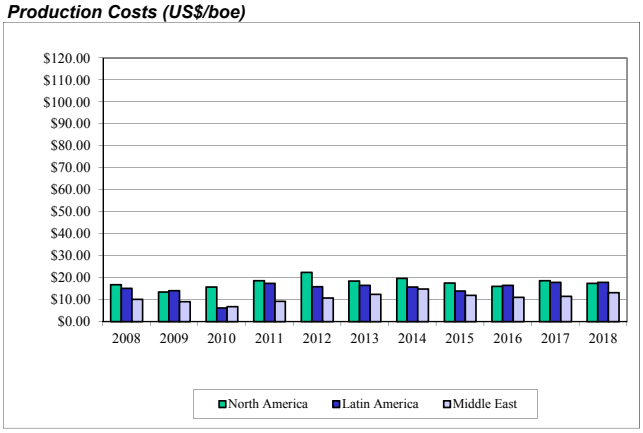
US$/boe, net

International Segments

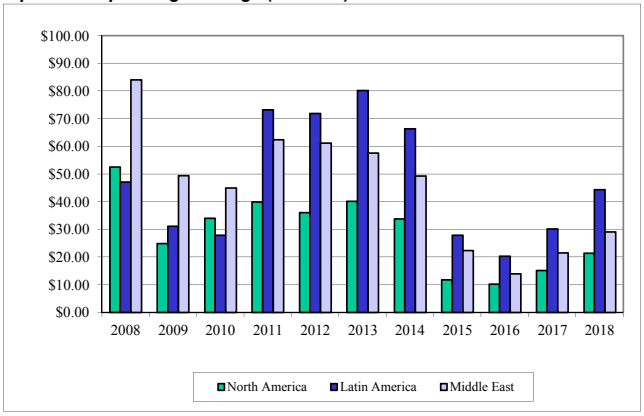
Upstream Net Revenue (US$/boe)



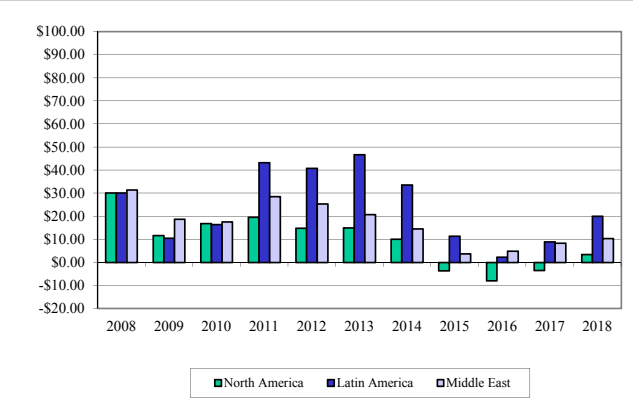
Production Costs (US$/boe)



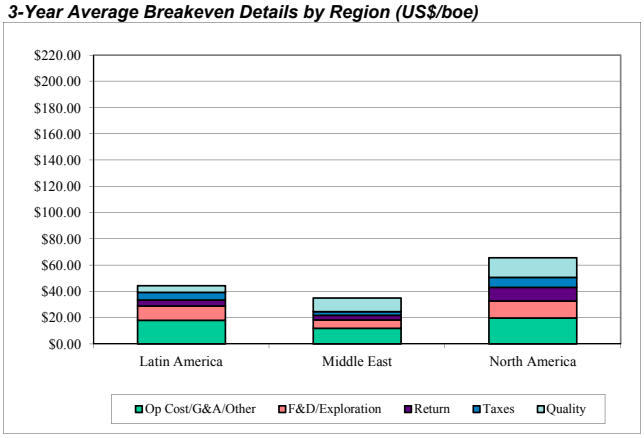
Upstream Operating Earnings (US$/boe)



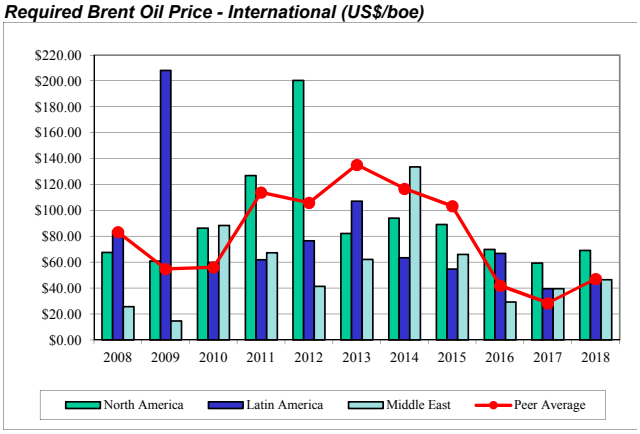
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	18,187	11,598	14,276	18,419	18,950	19,176	13,910	8,304	6,377	7,870	10,441
Midstream / Downstream Revenue	6,030	3,805	4,769	5,520	5,222	5,279	5,402	4,176	3,713	4,638	7,383
Other	263	128	112	180	81	1,281	2,635	219	308	766	1,110
Total Revenue and Other Income	24,480	15,531	19,157	24,119	24,253	25,736	21,947	12,699	10,398	13,274	18,934
Crude Oil and Product Purchases	4,740	2,898	2,835	3,119	2,665	2,610	3,007	2,182	2,022	2,213	2,784
Production and Transportation Expenses	2,683	2,462	3,277	4,266	5,179	4,952	3,796	3,622	3,167	3,381	3,784
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	974	267	262	258	345	256	150	36	62	82	110
General and Administrative	1,257	1,350	1,371	1,523	1,602	1,801	1,503	1,270	1,330	1,424	1,613
Depreciation, Depletion and Amortization	2,710	3,117	3,153	3,591	4,511	5,347	4,261	4,544	4,268	4,002	3,977
Interest, net	129	140	116	298	130	118	77	147	292	345	389
Other	375	376	482	223	2,068	975	7,598	10,374	921	499	669
Earnings Before Income Tax	11,584	4,896	7,636	10,841	7,753	9,677	1,555	(9,476)	(1,664)	1,328	5,608
Current Income Taxes	4,361	1,411	2,589	2,765	1,990	2,568	2,863	42	(145)	736	1,106
Future Income Taxes	268	507	406	1,436	1,128	1,187	(1,178)	(1,372)	(517)	(719)	371
Total Income Taxes	4,629	1,918	2,995	4,201	3,118	3,755	1,685	(1,330)	(662)	17	1,477
Minority Interest	(116)	(51)	(72)	-	-	-	(14)	-	-	-	-
Earnings From Continuing Operations	6,839	2,927	4,569	6,640	4,635	5,922	(144)	(8,146)	(1,002)	1,311	4,131
Discontinued Operations/Extraordinary Items	18	(12)	(39)	131	(37)	(19)	760	317	428	-	-
Cumulative Change in Accounting Principle	-	-	-							-	-
Net Earnings	6,857	2,915	4,530	6,771	4,598	5,903	616	(7,829)	(574)	1,311	4,131
Preferred Stock Dividends	-	-	-							-	-
Net Earnings to Common Shareholders	6,857	2,915	4,530	6,771	4,598	5,903	616	(7,829)	(574)	1,311	4,131

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	6,839	2,927	4,569	6,640	4,598	5,903	630	(7,829)	(574)	1,311	4,131
Charges and Credits Not Impacting Cash	3,222	3,836	3,698	5,187	5,918	6,676	10,561	12,866	4,449	3,879	4,965
Other	947	452	810	157	1,953	(239)	(3,112)	(253)	(506)	(513)	(983)
Cash Flow From Operations	11,008	7,215	9,077	11,984	12,469	12,340	8,079	4,784	3,369	4,677	8,113
Change in Working Capital / Other	(356)	(1,402)	272	322	(1,157)	587	2,989	(1,433)	14	319	(444)
Net Cash From Operating Activities	10,652	5,813	9,349	12,306	11,312	12,927	11,068	3,351	3,383	4,996	7,669
Total Capital Expenditures	(4,664)	(3,581)	(3,940)	(7,518)	(10,226)	(9,037)	(8,930)	(5,272)	(2,717)	(3,599)	(4,975)
Acquisitions, net	(4,674)	(1,731)	(4,904)	(4,859)	(2,486)	976	2,490	710	(1,742)	(1,064)	(928)
Other	(119)	(15)	(234)	2,474	57	(132)	(2,030)	(861)	(283)	1,449	2,697
Net Cash From Investing Activities	(9,457)	(5,327)	(9,078)	(9,903)	(12,655)	(8,193)	(8,470)	(5,423)	(4,742)	(3,214)	(3,206)
Net Change in Debt	947	41	2,273	588	1,736	(690)	(107)	1,478	1,493	-	478
Net Change in Common Stock	(1,479)	(22)	(57)	(224)	(498)	(913)	(2,467)	(556)	14	3	(1,215)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(940)	(1,063)	(1,159)	(1,436)	(2,128)	(1,553)	(2,210)	(2,264)	(2,309)	(2,346)	(2,374)
Other	90	11	26	(103)	44	223	2,582	2,826	1,193	-	9
Net Cash From Financing Activities	(1,382)	(1,033)	1,083	(1,175)	(846)	(2,933)	(2,202)	1,484	391	(2,343)	(3,102)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(187)	(547)	1,354	1,203	(2,189)	1,801	396	(588)	(968)	(561)	1,361
Cash and Equivalents, Beginning of Year	1,964	1,777	1,224	2,578	3,781	1,592	3,393	3,789	3,201	2,233	1,672
Cash and Equivalents, End of Year	1,777	1,230	2,578	3,781	1,592	3,393	3,789	3,201	2,233	1,672	3,033

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	7,172	8,086	13,059	11,542	9,492	11,323	13,873	9,402	8,428	8,270	9,932
Net Property, Plant and Equipment	32,266	33,645	36,536	45,684	52,064	55,821	39,730	31,639	32,337	31,174	31,437
Other Assets	2,099	2,498	2,837	2,818	2,654	2,299	2,656	2,396	2,344	2,582	2,485
Total Assets	41,537	44,229	52,432	60,044	64,210	69,443	56,259	43,437	43,109	42,026	43,854
Total Current Liabilities	6,134	6,092	7,825	7,947	7,290	8,434	8,244	6,842	6,362	7,400	7,412
Long-term Debt	2,049	2,557	5,111	5,871	7,023	6,939	6,838	6,883	9,819	9,328	10,201
Deferred Income Taxes	2,660	3,125	3,445	4,846	6,039	7,197	3,015	1,323	1,132	581	907
Other Liabilities and Deferred Credits	3,369	3,296	3,567	3,760	3,810	3,501	3,203	4,039	4,299	4,145	4,004
Total Liabilities	14,212	15,070	19,948	22,424	24,162	26,071	21,300	19,087	21,612	21,454	22,524
Minority Interests	25	78	-	-	-	-	-	-	-	-	-
Common Shares	176	177	177	177	178	178	178	178	178	179	179
Contributed Surplus (Paid-in Capital)	7,113	7,127	7,191	7,286	7,441	7,515	7,599	7,640	7,747	7,884	8,046
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	24,684	26,534	29,868	35,142	37,990	41,831	36,067	25,960	22,981	21,935	23,750
Other / Comprehensive Income (Loss)	(4,673)	(4,757)	(4,752)	(4,985)	(5,561)	(6,152)	(8,885)	(9,428)	(9,409)	(9,426)	(10,645)
Total Shareholders' Equity	27,300	29,081	32,484	37,620	40,048	43,372	34,959	24,350	21,497	20,572	21,330
Total Liabilities and Shareholders' Equity	41,537	44,229	52,432	60,044	64,210	69,443	56,259	43,437	43,109	42,026	43,854
Return on Capital Employed (ROCE)	**27.4%**	**10.4%**	**14.8%**	**19.2%**	**11.0%**	**12.9%**	**1.6%**	**-23.8%**	**-1.3%**	**5.2%**	**15.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	17,729	11,565	14,245	18,419	18,950	19,176	13,910	8,304	6,377	7,870	10,441	24,688	46,902
Production Costs	3,263	2,883	3,094	4,032	4,856	4,540	3,796	3,622	3,167	3,381	3,784	10,332	17,750
Exploration	323	267	262	258	345	256	150	36	62	82	110	254	440
DD&A	2,299	2,688	2,668	3,064	3,933	4,753	3,701	3,886	3,575	3,269	3,254	10,098	17,685
G&A/Other	947	713	655	824	990	1,126	800	323	250	282	413	945	2,068
Pre-tax Results Of Operations	10,897	5,014	7,566	10,241	8,826	8,501	5,463	437	-677	856	2,880	3,059	8,959
Income Taxes	4,232	1,833	2,928	3,834	3,444	3,456	2,583	300	-351	336	1,237	1,222	4,106
Results Of Operations	6,665	3,181	4,638	6,407	5,382	5,045	2,880	137	-326	520	1,643	1,837	4,853

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	9,581	5,832	7,578	9,933	10,379	11,152	6,773	3,809	3,135	4,047	5,747	12,929	23,511
Production Costs	2,210	1,851	2,211	2,905	3,607	3,189	2,271	2,082	1,761	2,059	2,358	6,178	10,531
Exploration	92	156	158	200	230	184	70	18	8	28	64	100	188
DD&A	1,094	1,237	1,412	1,754	2,412	2,967	2,114	2,109	2,793	2,549	2,321	7,663	11,886
G&A/Other	350	389	432	584	723	827	519	307	240	273	407	920	1,746
Pre-tax Results Of Operations	5,835	2,199	3,365	4,490	3,407	3,985	1,799	-707	-1,667	-862	597	-1,932	-840
Income Taxes	1,857	594	1,012	1,419	1,033	1,395	630	-273	-784	-476	138	-1,121	-765
Results Of Operations	3,978	1,605	2,353	3,071	2,374	2,590	1,169	-434	-883	-386	459	-811	-75

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	8,148	5,733	6,667	8,486	8,571	8,024	7,137	4,495	3,242	3,823	4,694	11,759	23,391
Production Costs	1,053	1,032	883	1,127	1,249	1,351	1,525	1,540	1,406	1,322	1,426	4,154	7,219
Exploration	231	111	104	58	115	72	80	18	54	54	46	154	252
DD&A	1,205	1,451	1,256	1,310	1,521	1,786	1,587	1,777	782	720	933	2,435	5,799
G&A/Other	597	324	223	240	267	299	281	16	10	9	6	25	322
Pre-tax Results Of Operations	5,062	2,815	4,201	5,751	5,419	4,516	3,664	1,144	990	1,718	2,283	4,991	9,799
Income Taxes	2,375	1,239	1,916	2,415	2,411	2,061	1,953	574	432	812	1,099	2,343	4,870
Results Of Operations	2,687	1,576	2,285	3,336	3,008	2,455	1,711	570	558	906	1,184	2,648	4,929

See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$80.53	$49.14	$52.21	$68.86	$69.58	$68.90	$63.76	$33.76	$27.59	$35.88	$43.44	$35.74	$40.61
Production Costs	$14.82	$12.25	$11.34	$15.07	$17.83	$16.31	$17.40	$14.72	$13.70	$15.41	$15.74	$14.96	$15.37
Exploration	$1.47	$1.13	$0.96	$0.96	$1.27	$0.92	$0.69	$0.15	$0.27	$0.37	$0.46	$0.37	$0.38
DD&A	$10.44	$11.42	$9.78	$11.45	$14.44	$17.08	$16.96	$15.80	$15.47	$14.90	$13.54	$14.62	$15.31
G&A/Other	$4.30	$3.03	$2.40	$3.08	$3.64	$4.05	$3.67	$1.31	$1.08	$1.29	$1.72	$1.37	$1.79
Pre-tax Results Of Operations	$49.49	$21.31	$27.73	$38.28	$32.41	$30.54	$25.04	$1.78	-$2.93	$3.90	$11.98	$4.43	$7.76
Income Taxes	$19.22	$7.79	$10.73	$14.33	$12.65	$12.42	$11.84	$1.22	-$1.52	$1.53	$5.15	$1.77	$3.55
Results Of Operations	$30.27	$13.52	$17.00	$23.95	$19.76	$18.13	$13.20	$0.55	-$1.41	$2.37	$6.83	$2.66	$4.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$72.68	$42.36	$54.06	$63.47	$64.47	$64.40	$58.47	$32.05	$28.50	$36.46	$42.31	$36.23	$39.75
Production Costs	$16.76	$13.45	$15.77	$18.56	$22.40	$18.42	$19.61	$17.52	$16.01	$18.55	$17.36	$17.31	$17.80
Exploration	$0.70	$1.13	$1.13	$1.28	$1.43	$1.06	$0.60	$0.15	$0.07	$0.25	$0.47	$0.28	$0.32
DD&A	$8.30	$8.99	$10.07	$11.21	$14.98	$17.13	$18.25	$17.75	$25.39	$22.96	$17.09	$21.48	$20.09
G&A/Other	$2.65	$2.83	$3.08	$3.73	$4.49	$4.78	$4.48	$2.58	$2.18	$2.46	$3.00	$2.58	$2.95
Pre-tax Results Of Operations	$44.26	$15.97	$24.01	$28.69	$21.16	$23.01	$15.53	-$5.95	-$15.15	-$7.77	$4.40	-$5.41	-$1.42
Income Taxes	$14.09	$4.31	$7.22	$9.07	$6.41	$8.05	$5.44	-$2.30	-$7.12	-$4.29	$1.02	-$3.14	-$1.29
Results Of Operations	$30.17	$11.66	$16.79	$19.62	$14.75	$14.96	$10.10	-$3.65	-$8.03	-$3.48	$3.38	-$2.27	-$0.13

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$92.24	$58.70	$50.25	$76.45	$76.99	$76.30	$69.74	$35.35	$26.76	$35.29	$44.92	$35.21	$41.51
Production Costs	$11.92	$10.57	$6.66	$10.15	$11.22	$12.85	$14.90	$12.11	$11.60	$12.20	$13.65	$12.44	$12.81
Exploration	$2.62	$1.14	$0.78	$0.52	$1.03	$0.68	$0.78	$0.14	$0.45	$0.50	$0.44	$0.46	$0.45
DD&A	$13.64	$14.86	$9.47	$11.80	$13.66	$16.98	$15.51	$13.97	$6.45	$6.65	$8.93	$7.29	$10.29
G&A/Other	$6.76	$3.32	$1.68	$2.16	$2.40	$2.84	$2.75	$0.13	$0.08	$0.08	$0.06	$0.07	$0.57
Pre-tax Results Of Operations	$57.31	$28.82	$31.67	$51.81	$48.67	$42.94	$35.80	$9.00	$8.17	$15.86	$21.85	$14.94	$17.39
Income Taxes	$26.89	$12.69	$14.44	$21.76	$21.66	$19.60	$19.08	$4.51	$3.57	$7.50	$10.52	$7.02	$8.64
Results Of Operations	$30.41	$16.13	$17.22	$30.05	$27.02	$23.34	$16.72	$4.48	$4.60	$8.36	$11.33	$7.93	$8.75

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Net Revenue	$65.51	$49.88	$34.87	$92.75	$91.69	$99.23	$83.74	$43.10	$38.08	$49.57	$64.50	$50.29	$55.10
Production Costs	$15.16	$13.98	$6.17	$17.42	$15.89	$16.52	$15.69	$13.83	$16.48	$17.91	$17.91	$17.41	$16.27
Exploration	$1.76	$0.91	$0.23	$0.17	$0.25	$0.55	$0.34	$0.15	$0.40	$0.61	$1.68	$0.88	$0.61
DD&A	$14.77	$20.37	$4.07	$7.50	$9.89	$9.88	$13.80	$14.34	$12.48	$10.78	$9.00	$10.81	$12.18
G&A/Other	$1.43	$3.76	$0.50	$1.92	$3.63	$1.94	$1.29	$1.17	$0.80	$0.78	$0.53	$0.71	$0.92
Pre-tax Results Of Operations	$32.38	$10.86	$23.90	$65.75	$62.03	$70.34	$52.63	$13.61	$7.92	$19.48	$35.38	$20.49	$25.12
Income Taxes	$2.32	$0.40	$7.57	$22.50	$21.30	$23.63	$19.11	$2.23	$5.72	$10.62	$15.35	$10.41	$10.24
Results Of Operations	$30.06	$10.47	$16.33	$43.25	$40.73	$46.71	$33.51	$11.38	$2.20	$8.85	$20.03	$10.08	$14.88

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Middle East													
Net Revenue	$106.57	$62.77	$54.75	$74.47	$75.24	$73.66	$67.94	$34.41	$25.45	$33.59	$42.54	$33.42	$39.87
Production Costs	$10.04	$8.99	$6.80	$9.27	$10.66	$12.42	$14.80	$11.90	$11.04	$11.52	$13.13	$11.85	$12.39
Exploration	$3.09	$1.24	$0.94	$0.57	$1.13	$0.70	$0.84	$0.14	$0.45	$0.49	$0.29	$0.41	$0.43
DD&A	$12.95	$12.31	$11.05	$12.32	$14.11	$17.80	$15.73	$13.93	$5.76	$6.15	$8.92	$6.87	$10.06
G&A/Other	$9.43	$3.11	$2.03	$2.19	$2.25	$2.95	$2.93	$0.00	$0.00	$0.00	$0.00	$0.00	$0.53
Pre-tax Results Of Operations	$71.06	$37.11	$33.94	$50.12	$47.09	$39.80	$33.64	$8.44	$8.20	$15.43	$20.20	$14.29	$16.46
Income Taxes	$39.64	$18.36	$16.45	$21.67	$21.70	$19.13	$19.08	$4.79	$3.32	$7.13	$9.93	$6.62	$8.45
Results Of Operations	$31.43	$18.75	$17.48	$28.45	$25.39	$20.66	$14.56	$3.65	$4.88	$8.30	$10.27	$7.67	$8.01

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Production:													
Gas Production (mmcf/d)	841.1	926.0	1,180.8	1,224.7	1,287.7	1,238.4	906.8	986.3	956.2	811.0	843.8	870.3	900.8
Liquids Production (b/d)	463,014	490,411	550,685	528,767	531,507	556,164	446,575	509,589	473,973	465,753	517,808	485,845	482,740
Total Production (boe/d)	603,196	644,749	747,489	732,877	746,119	762,557	597,717	673,973	633,333	600,913	658,447	630,898	632,877
% Gas Production	23%	24%	26%	28%	29%	27%	25%	24%	25%	22%	21%	23%	24%
% Oil Production	77%	76%	74%	72%	71%	73%	75%	76%	75%	78%	79%	77%	76%
Proven Reserves:													
Gas Reserves (bcf)	4,601.0	5,157.0	5,320.0	5,323.0	5,568.0	5,566.0	4,127.0	3,368.0	3,774.0	3,831.0	4,095.0	3,900.0	3,839.0
Oil Reserves (mmbbls)	2,210.0	2,366.0	2,476.0	2,288.0	2,375.0	2,565.0	2,132.0	1,639.0	1,777.0	1,960.0	2,069.0	1,935.3	1,915.4
Total Proven Reserves (mmboe)	2,976.8	3,225.5	3,362.7	3,175.2	3,303.0	3,492.7	2,819.8	2,200.3	2,406.0	2,598.5	2,751.5	2,585.3	2,555.2
% Gas Reserves	26%	27%	26%	28%	28%	27%	24%	26%	26%	25%	25%	25%	25%
% Oil Reserves	74%	73%	74%	72%	72%	73%	76%	74%	74%	75%	75%	75%	75%
Proven Reserve Life Index	13.5	13.7	12.3	11.9	12.1	12.5	12.9	8.9	10.4	11.8	11.4	11.2	11.1
Proven Reserve Additions:													
Gas Additions (bcf)	1,065.0	894.0	594.0	632.0	715.0	450.0	-265.0	-399.0	755.0	353.0	572.0	1,680.0	1,016.0
Oil Additions (mmbbls)	155.0	335.0	306.0	171.0	281.0	393.0	344.0	-307.0	311.0	353.0	298.0	962.0	999.0
Total Additions (mmboe)	332.5	484.0	405.0	276.3	400.2	468.0	299.8	-373.5	436.8	411.8	393.3	1,242.0	1,168.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	270.7	264.7	264.5	288.7	488.2	427.3	394.5	150.0	186.8	206.2	300.5	693.5	1,238.0
Acquisitions	209.7	159.8	144.0	201.3	94.3	37.7	43.7	0.0	137.3	99.3	54.5	291.2	334.8
Dispositions	(2.5)	0.0	(3.0)	-	-	(0.3)	(80.8)	(207.5)	(45.8)	(44.3)	(17.3)	(107.5)	(395.8)
Revisions of Estimates	(145.3)	59.5	(0.5)	(213.7)	(182.3)	3.3	(57.5)	(316.0)	158.5	150.7	55.7	364.8	(8.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	81.4%	54.7%	65.3%	104.5%	122.0%	91.3%	131.6%	-40.2%	42.8%	50.1%	76.4%	55.8%	106.0%
Acquisitions	63.1%	33.0%	35.6%	72.9%	23.6%	8.0%	14.6%	0.0%	31.4%	24.1%	13.9%	23.4%	28.7%
Dispositions	-0.8%	0.0%	-0.7%	0.0%	0.0%	-0.1%	-27.0%	55.6%	-10.5%	-10.8%	-4.4%	-8.7%	-33.9%
Revisions of Estimates	-43.7%	12.3%	-0.1%	-77.3%	-45.6%	0.7%	-19.2%	84.6%	36.3%	36.6%	14.2%	29.4%	-0.7%
Additions as % of Production:													
Gas	346.9%	264.5%	137.8%	141.4%	152.1%	99.6%	-80.1%	-110.8%	216.3%	119.3%	185.7%	176.3%	61.8%
Oil	91.7%	187.2%	152.2%	88.6%	144.8%	193.6%	211.0%	-165.1%	179.8%	207.6%	157.7%	180.8%	113.4%
Total	151.0%	205.7%	148.4%	103.3%	146.9%	168.1%	137.4%	-151.8%	189.0%	187.8%	163.7%	179.8%	101.2%
Additions as % of Reserves:													
Gas	23.1%	17.3%	11.2%	11.9%	12.8%	8.1%	-6.4%	-11.8%	20.0%	9.2%	14.0%	43.1%	26.5%
Oil	7.0%	14.2%	12.4%	7.5%	11.8%	15.3%	16.1%	-18.7%	17.5%	18.0%	14.4%	49.7%	52.2%
Total	11.2%	15.0%	12.0%	8.7%	12.1%	13.4%	10.6%	-17.0%	18.2%	15.8%	14.3%	48.0%	45.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$334.0	$207.0	$329.0	$520.0	$654.0	$515.0	$563.0	$142.0	$71.0	$256.0	$282.0	$609.0	$1,314.0
Development	$4,112.0	$2,779.0	$3,387.0	$5,809.0	$7,673.0	$6,649.0	$6,108.0	$4,511.0	$2,162.0	$2,720.0	$4,288.0	$9,170.0	$19,789.0
Acquisitions	$3,540.0	$830.0	$4,568.0	$4,528.0	$2,316.0	$547.0	$1,613.0	$109.0	$2,429.0	$913.0	$480.0	$3,822.0	$5,544.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$7,986.0	$3,816.0	$8,284.0	$10,857.0	$10,643.0	$7,711.0	$8,284.0	$4,762.0	$4,662.0	$3,889.0	$5,050.0	$13,601.0	$26,647.0
Expenditures as % of Total:													
Exploration	4.2%	5.4%	4.0%	4.8%	6.1%	6.7%	6.8%	3.0%	1.5%	6.6%	5.6%	4.5%	4.9%
Development	51.5%	72.8%	40.9%	53.5%	72.1%	86.2%	73.7%	94.7%	46.4%	69.9%	84.9%	67.4%	74.3%
Acquisitions	44.3%	21.8%	55.1%	41.7%	21.8%	7.1%	19.5%	2.3%	52.1%	23.5%	9.5%	28.1%	20.8%
Cashflow (US$million)	$8,801.0	$7,109.0	$9,077.0	$11,959.0	$9,660.3	$10,054.3	$6,731.4	$4,058.5	$3,311.3	$3,870.7	$5,006.6	$12,188.6	$22,978.5
Cashflow (US$/boe)	$39.97	$30.21	$33.27	$44.71	$35.47	$36.12	$30.85	$16.50	$14.32	$17.65	$20.83	$17.64	$19.89
Recycle Ratio	1.7x	3.8x	1.6x	1.1x	1.3x	2.2x	1.4x	-0.6x	1.5x	2.1x	1.7x	1.8x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$35.47	$9.21	$14.08	$84.39	$27.23	$16.63	$19.80	-$28.03	$6.47	$8.34	$12.83	$9.24	$17.17
Acquisition Costs	$16.88	$5.19	$31.72	$22.49	$24.55	$14.52	$36.94	na	$17.69	$9.19	$8.81	$13.13	$16.56
All Sources (incl. revisions)	$23.84	$7.88	$20.30	$39.29	$26.60	$16.46	$21.76	-$28.69	$9.66	$8.53	$12.30	$10.08	$17.04
Exploration & Development (excl. revisions)	$16.43	$11.28	$14.05	$21.92	$17.06	$16.76	$16.91	$31.02	$11.95	$14.43	$15.21	$14.10	$17.05
Acquisition Costs	$16.88	$5.19	$31.72	$22.49	$24.55	$14.52	$36.94	na	$17.69	$9.19	$8.81	$13.13	$16.56
All Sources (excl. revisions)	$16.63	$8.99	$20.28	$22.16	$18.27	$16.58	$18.91	$31.75	$14.38	$12.73	$14.23	$13.81	$16.94
Geographically Segmented Costs													
North America	$92.68	$14.69	$23.03	$33.86	$66.73	$15.79	$18.43	-$12.86	$16.62	$8.56	$13.12	$12.10	$20.32
Latin America	$23.42	$117.20	$6.71	$17.44	$23.77	$1,020.00	$19.11	-$64.50	$18.69	$8.34	$9.89	$9.92	$15.14
Middle East	$8.21	$3.54	$33.41	nm	$8.13	$15.67	$40.31	$22.12	$4.06	$8.42	$9.75	$5.88	$11.59
Other	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	14.82	12.25	11.34	15.07	17.83	16.31	17.40	14.72	13.70	15.41	15.74	14.96	15.37
Exploration Expense	1.47	1.13	0.96	0.96	1.27	0.92	0.69	0.15	0.27	0.37	0.46	0.37	0.38
G&A/Other	4.30	3.03	2.40	3.08	3.64	4.05	3.67	1.31	1.08	1.29	1.72	1.37	1.79
F&D Costs	23.84	7.88	20.30	39.29	26.60	16.46	21.76	31.75	9.66	8.53	12.30	13.81	16.80
Return on Capital	20.65	6.90	15.92	29.33	20.72	13.13	17.94	17.76	6.32	6.40	8.82	9.80	11.93
Income Taxes	13.11	3.98	10.05	17.55	13.26	8.99	16.09	14.53	6.81	4.14	6.65	7.93	9.88
Breakeven Oil Price	78.19	35.18	60.97	105.28	83.30	59.86	77.55	80.21	37.84	36.14	45.68	48.24	56.15
Quality Differential	7.77	4.28	13.52	18.60	14.73	16.47	16.96	10.58	10.04	10.66	16.73	12.48	13.00
Required Brent Price	85.96	39.46	74.50	123.88	98.03	76.33	94.51	90.80	47.88	46.80	62.41	60.71	69.15

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	16.76	13.45	15.77	18.56	22.40	18.42	19.61	17.52	16.01	18.55	17.36	17.31	17.80
Exploration Expense	0.70	1.13	1.13	1.28	1.43	1.06	0.60	0.15	0.07	0.25	0.47	0.28	0.32
G&A/Other	2.65	2.83	3.08	3.73	4.49	4.78	4.48	2.58	2.18	2.46	3.00	2.58	2.95
F&D Costs	13.32	14.69	23.03	33.86	66.73	15.79	18.43	26.57	16.62	8.56	13.12	12.61	16.66
Return on Capital	13.59	14.28	23.53	32.37	61.17	14.16	18.41	17.90	12.97	7.70	10.53	10.44	13.79
Income Taxes	6.35	5.28	10.12	14.96	26.60	7.62	9.91	11.29	11.50	9.48	3.18	7.49	9.12
Breakeven Oil Price	53.38	51.66	76.66	104.76	182.82	61.82	71.43	76.02	59.35	47.00	47.66	50.72	60.65
Quality Differential	14.16	9.36	9.66	22.30	17.58	20.32	22.54	13.29	10.66	12.39	21.45	14.83	16.07
Required Brent Price	67.54	61.02	86.32	127.06	200.40	82.13	93.97	89.31	70.01	59.38	69.11	65.55	76.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	11.92	10.57	6.66	10.15	11.22	12.85	14.90	12.11	11.60	12.20	13.65	12.44	12.81
Exploration Expense	2.62	1.14	0.78	0.52	1.03	0.68	0.78	0.14	0.45	0.50	0.44	0.46	0.45
G&A/Other	6.76	3.32	1.68	2.16	2.40	2.84	2.75	0.13	0.08	0.08	0.06	0.07	0.57
F&D Costs	10.46	5.18	14.96	174.47	8.86	18.05	35.66	25.49	4.29	8.40	9.78	6.33	11.98
Return on Capital	6.72	3.87	8.19	104.08	5.13	11.67	23.24	11.67	2.33	5.03	6.11	3.74	6.86
Income Taxes	5.94	3.05	6.86	75.35	4.11	9.80	26.52	11.74	1.81	4.51	5.67	3.23	6.46
Breakeven Oil Price	44.41	27.12	39.13	366.74	32.75	55.90	103.85	61.28	20.57	30.73	35.71	26.28	39.12
Quality Differential	(1.76)	(2.88)	17.61	13.39	10.60	10.13	10.65	8.06	9.47	8.90	10.59	9.65	9.53
Required Brent Price	42.65	24.24	56.74	380.13	43.35	66.03	114.50	69.33	30.04	39.63	46.30	35.94	48.65

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Latin America													
Operating Costs	15.16	13.98	6.17	17.42	15.89	16.52	15.69	13.83	16.48	17.91	17.91	17.41	16.27
Exploration Expense	1.76	0.91	0.23	0.17	0.25	0.55	0.34	0.15	0.40	0.61	1.68	0.88	0.61
G&A/Other	1.43	3.76	0.50	1.92	3.63	1.94	1.29	1.17	0.80	0.78	0.53	0.71	0.92
F&D Costs	23.42	117.20	6.71	17.44	23.77	47.44	19.11	21.50	18.69	8.34	9.89	9.92	15.51
Return on Capital	12.39	60.72	4.15	9.23	12.87	25.20	9.89	7.91	6.81	3.82	5.29	4.49	6.96
Income Taxes	0.95	2.29	1.92	4.80	6.73	12.75	5.64	1.55	17.70	4.58	4.06	5.88	5.59
Breakeven Oil Price	55.12	198.86	19.69	50.97	63.14	104.40	51.96	46.10	60.88	36.04	39.36	39.28	45.86
Quality Differential	28.86	9.29	40.08	10.97	13.33	2.86	11.42	8.62	5.85	3.63	5.45	4.98	6.99
Required Brent Price	83.98	208.15	59.77	61.94	76.48	107.26	63.38	54.72	66.73	39.67	44.81	44.26	52.86

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Middle East													
Operating Costs	10.04	8.99	6.80	9.27	10.66	12.42	14.80	11.90	11.04	11.52	13.13	11.85	12.39
Exploration Expense	3.09	1.24	0.94	0.57	1.13	0.70	0.84	0.14	0.45	0.49	0.29	0.41	0.43
G&A/Other	9.43	3.11	2.03	2.19	2.25	2.95	2.93	-	-	-	-	-	0.53
F&D Costs	8.21	3.54	33.41	22.57	8.13	15.67	40.31	22.12	4.06	8.42	9.75	5.88	11.59
Return on Capital	5.70	3.13	17.61	10.87	4.75	10.16	27.77	10.37	2.30	5.18	6.19	3.57	6.82
Income Taxes	7.19	3.07	16.57	8.28	4.06	9.41	36.39	13.59	1.57	4.45	5.99	2.96	6.78
Breakeven Oil Price	43.64	23.09	77.36	53.75	30.98	51.30	123.05	58.12	19.42	30.06	35.34	24.67	38.54
Quality Differential	(17.99)	(8.49)	11.04	13.68	10.28	10.97	10.55	7.99	9.89	9.52	11.22	10.21	9.83
Required Brent Price	25.66	14.59	88.40	67.43	41.26	62.27	133.60	66.11	29.31	39.58	46.56	34.88	48.37

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Occidental Petroleum Corp. (OXY - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.20	14.73	14.14	19.47	23.81	21.05	21.92	18.24	16.81	18.54	19.09	18.16	18.87
Exploration Expense	1.70	1.36	1.20	1.25	1.69	1.19	0.87	0.18	0.33	0.45	0.55	0.45	0.47
G&A/Other	4.99	3.64	2.99	3.98	4.85	5.22	4.62	1.63	1.33	1.55	2.08	1.66	2.20
F&D Costs (1-Year)	34.88	10.06	24.83	56.89	35.94	19.01	22.62	38.67	12.29	9.87	15.28	12.32	19.75
Return on Capital	30.03	8.63	19.45	42.72	28.35	15.12	18.90	21.39	7.98	7.26	10.72	8.48	13.64
Income Taxes	19.07	4.98	12.28	25.56	18.14	10.36	16.94	17.50	8.60	4.70	8.08	6.86	11.29
Breakeven Oil Price	**107.88**	**43.41**	**74.89**	**149.87**	**112.78**	**71.95**	**85.86**	**97.60**	**47.33**	**42.37**	**55.81**	**47.93**	**66.21**
Quality Differential	9.02	5.15	16.86	24.04	19.66	21.25	21.37	13.11	12.31	12.82	20.28	15.14	15.98
Required Brent Price	**116.90**	**48.56**	**91.75**	**173.91**	**132.44**	**93.20**	**107.23**	**110.71**	**59.64**	**55.19**	**76.09**	**63.06**	**82.19**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.20	14.73	14.14	19.47	23.81	21.05	21.92	18.24	16.81	18.54	19.09	18.16	18.87
Exploration Expense	1.70	1.36	1.20	1.25	1.69	1.19	0.87	0.18	0.33	0.45	0.55	0.45	0.47
G&A/Other	4.99	3.64	2.99	3.98	4.85	5.22	4.62	1.63	1.33	1.55	2.08	1.66	2.20
F&D Costs (1-Year)	90.67	9.32	34.42	124.97	49.41	31.71	82.91	28.36	15.58	13.39	19.36	15.99	31.92
Return on Capital	77.06	8.00	26.90	93.80	38.36	25.44	69.05	15.54	10.11	9.86	13.49	11.08	22.07
Income Taxes	48.93	4.61	16.98	56.13	24.54	17.43	61.91	12.72	10.90	6.38	10.16	8.97	18.27
Breakeven Oil Price	**240.56**	**41.67**	**96.62**	**299.61**	**142.67**	**102.04**	**241.27**	**76.66**	**55.05**	**50.16**	**64.74**	**56.31**	**93.79**
Quality Differential	9.02	5.15	16.86	24.04	19.66	21.25	21.37	13.11	12.31	12.82	20.28	15.14	15.98
Required Brent Price	**249.58**	**46.82**	**113.48**	**323.64**	**162.34**	**123.29**	**262.64**	**89.77**	**67.37**	**62.98**	**85.02**	**71.44**	**109.77**

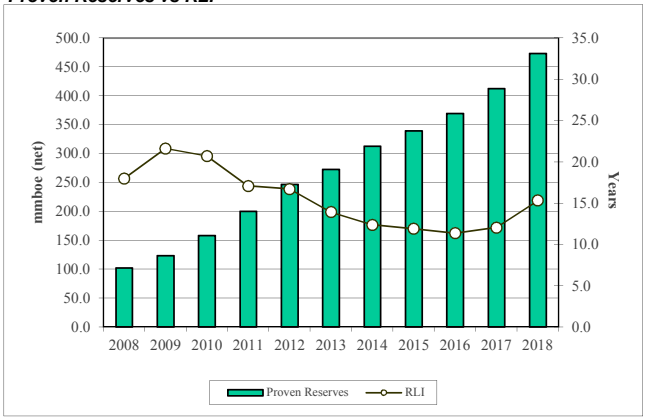
Source: BMO Capital Markets, Company Reports

Peyto Exploration & Development Corp. (PEY - TSX) C$, net

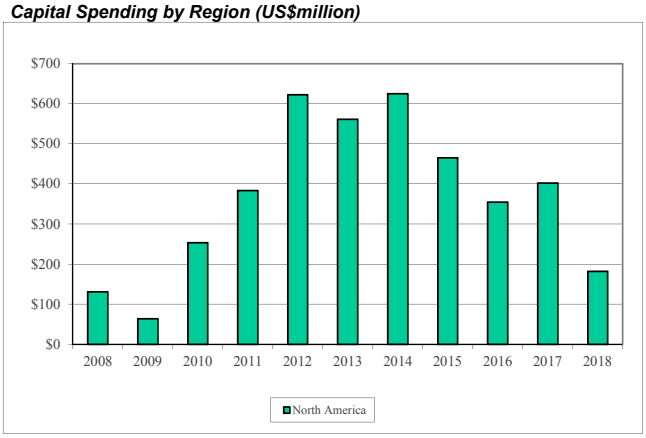
- Peyto reported results of operations of $4.43/boe in 2018 compared to $5.01/boe in 2017.
- The company's one-year F&D costs came in at $2.04/boe in 2018 versus $5.21/boe last year. On a realized oil:gas price ratio basis, F&D costs dropped to $5.24/boe from $13.85/boe, while the costs for PD reserves were flat at $16.97/boe from $17.05/boe the previous year.
- Supported by a low-cost structure, Peyto's 2018 costs imply a required Brent breakeven oil price of $48.34/boe on total proved reserves, while its PD costs imply a breakeven of $77.44/boe.
- The company's return on capital was 5.8% in 2018 versus 7.4% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

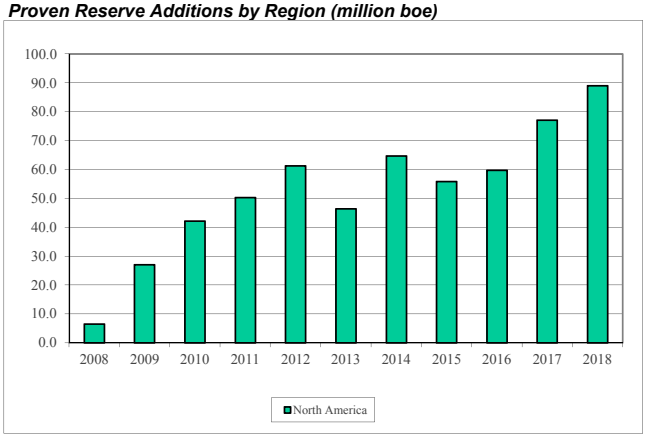
Proven Reserves vs RLI



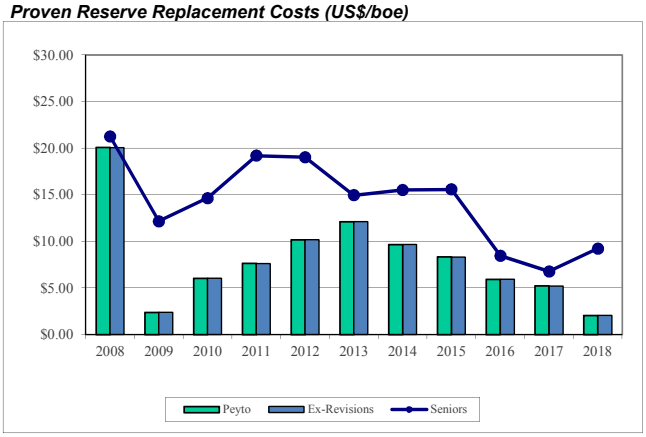
Capital Spending by Region (US$million)



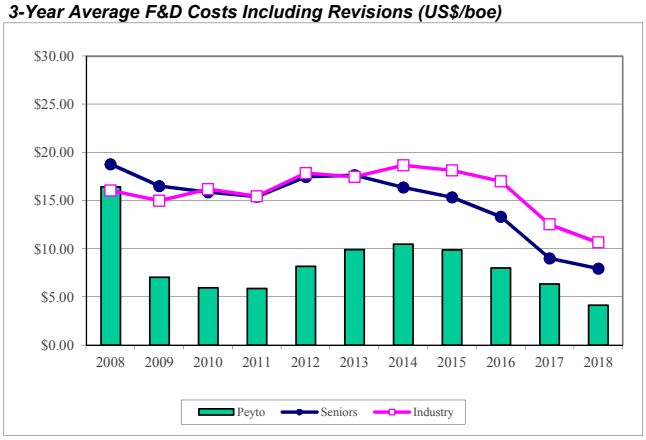
Proven Reserve Additions by Region (million boe)



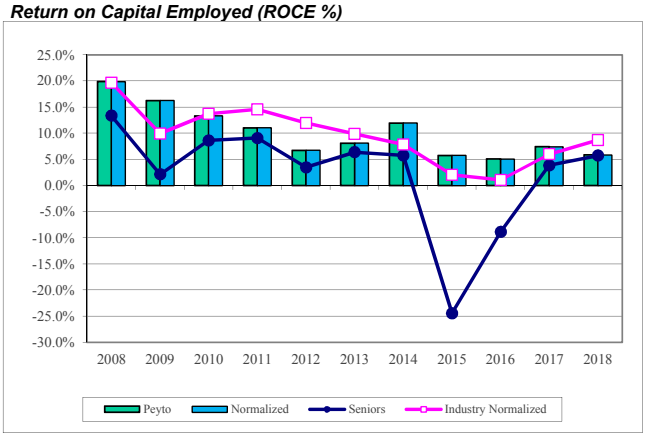
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



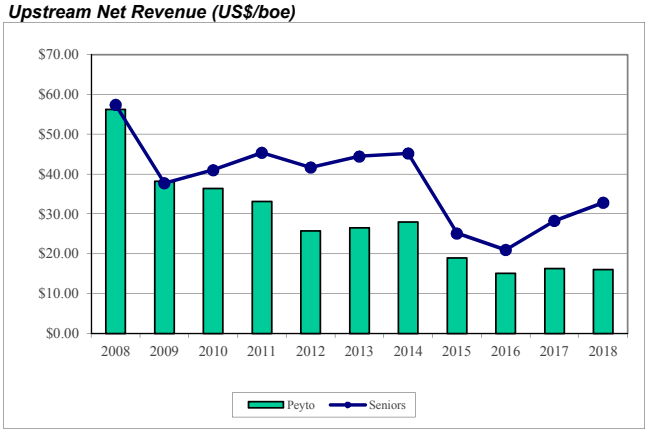
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

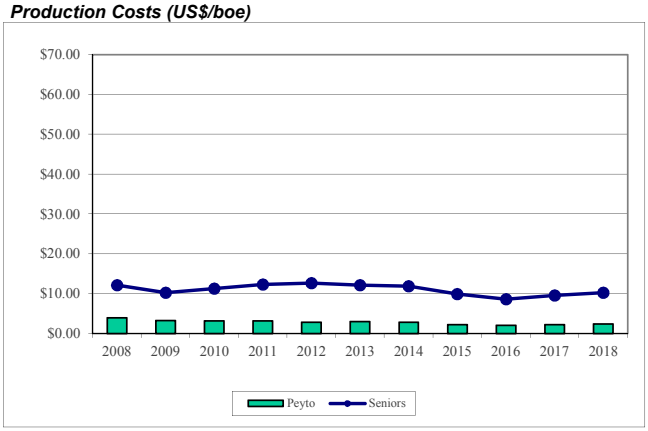
Peyto Exploration & Development Corp. (PEY - TSX) C$/boe, net

North America

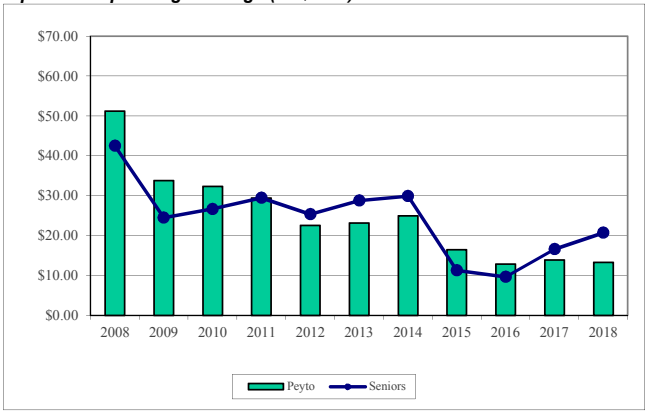
Upstream Net Revenue (US$/boe)



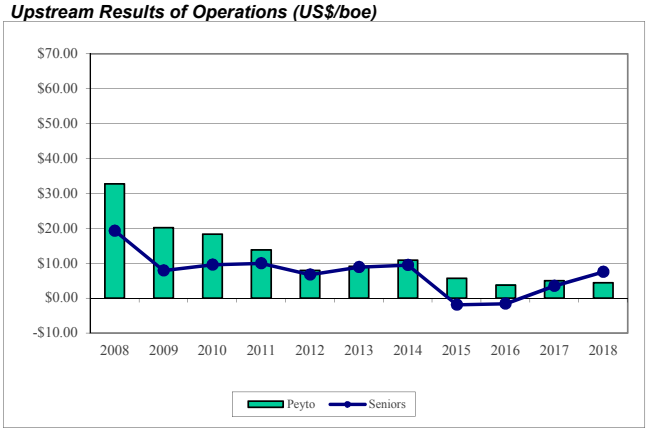
Production Costs (US$/boe)



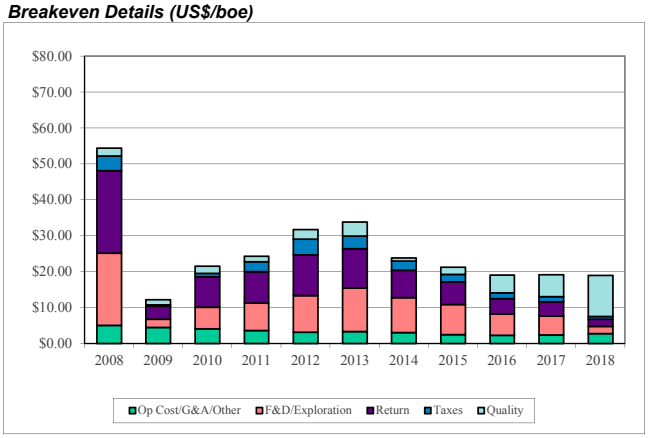
Upstream Operating Earnings (US$/boe)



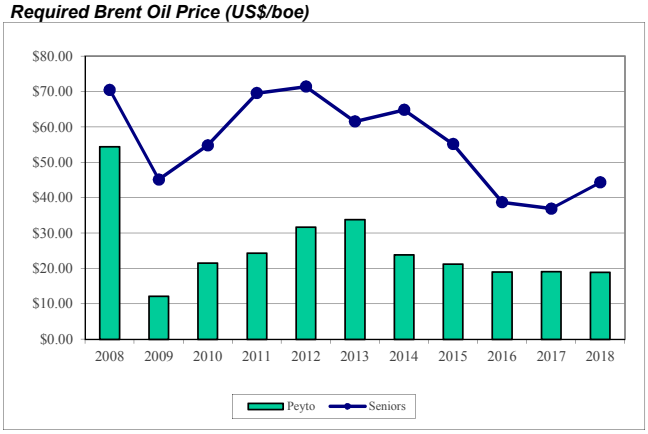
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Peyto Exploration & Development Corp. (PEY - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	328	163	235	350	327	506	769	456	402	516	373
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(9)	55	43	38	54	14	(60)	85	90	45	123
Total Revenue and Other Income	320	218	278	388	381	520	709	541	491	560	495
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	22	19	25	38	43	60	72	65	66	76	76
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	6	6	6	5	4	5	5	6	6	7	8
Depreciation, Depletion and Amortization	71	65	91	132	172	218	264	255	250	243	225
Interest, net	21	15	19	22	25	30	31	28	30	36	41
Other	(0)	7	33	21	6	23	20	12	22	13	8
Earnings Before Income Tax	200	107	103	170	130	184	316	175	116	187	138
Current Income Taxes	-	-	-	5	2	-	-	-	-	-	-
Future Income Taxes (Recovery)	30	(28)	(15)	35	34	45	79	68	32	50	37
Total Income Taxes	30	(28)	(15)	40	36	45	79	68	32	50	37
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	169	135	118	130	94	139	237	108	85	136	101
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	169	135	118	130	94	139	237	108	85	136	101
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	169	135	118	130	94	139	237	108	85	136	101

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	169	135	118	130	94	139	237	108	85	136	101
Charges and Credits Not Impacting Cash	102	37	76	168	207	264	343	323	281	293	262
Other	(0)	(0)	-	(1)	(3)	5	(0)	(1)	(1)	(1)	5
Cash Flow From Operations	271	171	194	296	297	407	580	429	366	429	368
Change in Working Capital / Other	(37)	4	22	(3)	(13)	(11)	2	(14)	19	(16)	13
Net Cash From Operating Activities	234	175	216	293	284	396	582	415	384	413	381
Total Capital Expenditures	(114)	(114)	(113)	(112)	(401)	(561)	(625)	(465)	(355)	(402)	(182)
Acquisitions, net	-	-	1	2	-	-	-	-	-	-	-
Other	2	2	3	4	-	(2)	6	(17)	(16)	(12)	(13)
Net Cash From Investing Activities	(112)	(112)	(111)	(110)	(401)	(563)	(619)	(482)	(370)	(414)	(195)
Net Change in Debt	9	9	10	11	(40)	287	45	94	19	166	(91)
Net Issuance of Shares	3	3	4	5	122	6	152	141	136	6	-
Net Change in Preferred Stock/Convertibles	-	-	1	2	-	-	-	-	-	-	-
Cash Dividends Paid	(166)	(166)	(165)	(164)	(101)	(124)	(154)	(163)	(162)	(168)	(99)
Other	5	5	6	7	78	(0)	(6)	(6)	(6)	0	-
Net Cash From Financing Activities	(149)	(149)	(148)	(147)	59	168	37	67	(13)	4	(190)
Effect of Exchange Rate on Cash	-	-	1	2	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	9	9	10	11	(57)	-	0	0	2	3	(4)
Cash and Equivalents, Beginning of Year	10	10	11	12	57	(0)	(0)	0	0	2	4
Cash and Equivalents, End of Year	19	19	20	21	(0)	(0)	0	0	2	4	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Peyto Exploration & Development Corp. (PEY - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	91	65	102	165	104	93	198	131	87	188	106
Net Property, Plant and Equipment	1,111	1,038	1,308	1,648	2,098	2,389	2,624	2,498	2,529	2,764	2,774
Other Assets	5	2	3	8	4	-	11	-	-	13	10
Total Assets	1,208	1,105	1,412	1,821	2,205	2,482	2,832	2,629	2,616	2,965	2,890
Total Current Liabilities	61	63	131	125	179	193	197	128	228	123	191
Long-term Debt	472	383	345	475	580	850	838	818	808	991	823
Deferred Income Taxes	146	109	109	154	174	205	300	316	292	411	439
Other Liabilities and Deferred Credits	9	10	13	40	61	68	92	95	124	111	121
Total Liabilities	688	565	598	794	994	1,316	1,427	1,358	1,452	1,636	1,574
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Shareholder Capital	387	443	749	899	1,125	1,098	1,171	1,149	1,241	1,272	1,293
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock/Convertibles	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	104	88	45	84	75	84	158	81	1	(31)	(23)
Accumulated Cash Distributions / Other	29	8	20	44	10	(16)	78	41	(77)	88	48
Total Shareholder Equity	519	540	814	1,028	1,211	1,166	1,406	1,271	1,164	1,329	1,317
Total Liabilities and Shareholder Equity	1,208	1,105	1,412	1,821	2,205	2,482	2,832	2,629	2,616	2,965	2,890
Return on Capital Employed (ROCE)	**19.9%**	**16.2%**	**13.3%**	**11.1%**	**6.8%**	**8.1%**	**12.0%**	**5.8%**	**5.1%**	**7.4%**	**5.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	320	218	278	388	381	520	709	541	491	560	495	1,547	2,797
Production Costs	22	19	25	38	43	60	72	65	66	76	76	218	355
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	71	65	91	132	172	218	264	255	250	243	225	718	1,237
G&A/Other	6	6	6	5	4	5	5	6	6	7	8	21	31
Pre-tax Results Of Operations	220	129	155	213	162	237	367	215	169	235	187	591	1,173
Income Taxes	30	-28	-15	40	36	45	79	68	32	50	37	119	266
Results Of Operations	190	156	171	173	126	191	288	148	137	185	150	472	908

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	320	218	278	388	381	520	709	541	491	560	495	1,547	2,797
Production Costs	22	19	25	38	43	60	72	65	66	76	76	218	355
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	71	65	91	132	172	218	264	255	250	243	225	718	1,237
G&A/Other	6	6	6	5	4	5	5	6	6	7	8	21	31
Pre-tax Results Of Operations	220	129	155	213	162	237	367	215	169	235	187	591	1,173
Income Taxes	30	-28	-15	40	36	45	79	68	32	50	37	119	266
Results Of Operations	190	156	171	173	126	191	288	148	137	185	150	472	908

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Peyto Exploration & Development Corp. (PEY - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$56.26	$38.18	$36.42	$33.11	$25.76	$26.52	$28.01	$18.96	$15.11	$16.35	$16.05	$15.84	$18.46
Production Costs	$3.92	$3.28	$3.23	$3.21	$2.88	$3.04	$2.85	$2.28	$2.04	$2.21	$2.46	$2.23	$2.34
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$12.56	$11.29	$11.99	$11.28	$11.66	$11.14	$10.44	$8.94	$7.69	$7.09	$7.28	$7.35	$8.17
G&A / Other	$1.10	$1.12	$0.83	$0.42	$0.26	$0.26	$0.21	$0.20	$0.19	$0.19	$0.25	$0.21	$0.21
Pre-tax Results of Operations	$38.68	$22.49	$20.37	$18.20	$10.96	$12.07	$14.52	$7.55	$5.19	$6.86	$6.06	$6.05	$7.75
Income Taxes	$5.87	$2.25	$2.04	$4.33	$3.04	$2.98	$3.63	$1.89	$1.41	$1.85	$1.63	$1.63	$2.03
Results of Operations	$32.81	$20.24	$18.33	$13.87	$7.91	$9.09	$10.89	$5.66	$3.78	$5.01	$4.43	$4.42	$5.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$56.26	$38.18	$36.42	$33.11	$25.76	$26.52	$28.01	$18.96	$15.11	$16.35	$16.05	$15.84	$18.46
Production Costs	$3.92	$3.28	$3.23	$3.21	$2.88	$3.04	$2.85	$2.28	$2.04	$2.21	$2.46	$2.23	$2.34
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$12.56	$11.29	$11.99	$11.28	$11.66	$11.14	$10.44	$8.94	$7.69	$7.09	$7.28	$7.35	$8.17
G&A / Other	$1.10	$1.12	$0.83	$0.42	$0.26	$0.26	$0.21	$0.20	$0.19	$0.19	$0.25	$0.21	$0.21
Pre-tax Results of Operations	$38.68	$22.49	$20.37	$18.20	$10.96	$12.07	$14.52	$7.55	$5.19	$6.86	$6.06	$6.05	$7.75
Income Taxes	$5.87	$2.25	$2.04	$4.33	$3.04	$2.98	$3.63	$1.89	$1.41	$1.85	$1.63	$1.63	$2.03
Results of Operations	$32.81	$20.24	$18.33	$13.87	$7.91	$9.09	$10.89	$5.66	$3.78	$5.01	$4.43	$4.42	$5.72

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Peyto Exploration & Development Corp. (PEY - TSX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	79.7	81.6	110.5	176.4	222.9	295.0	383.7	441.2	498.5	517.6	458.8	491.6	460.0
Liquids Production (b/d)	2,286	2,060	2,481	2,699	3,368	4,558	5,351	4,628	5,990	7,674	8,084	7,250	6,346
Total Production (boe/d)	15,574	15,665	20,895	32,099	40,514	53,726	69,307	78,159	89,076	93,940	84,557	89,191	83,008
% Gas Production	85%	87%	88%	92%	92%	92%	92%	94%	93%	92%	90%	92%	92%
% Oil Production	15%	13%	12%	8%	8%	8%	8%	6%	7%	8%	10%	8%	8%
Proven Reserves:													
Closing Gas Reserves (bcf)	538.0	652.5	849.0	1,026.8	1,284.1	1,452.5	1,681.5	1,878.3	2,027.0	2,256.3	2,499.4	2,260.9	2,068.5
Closing Oil Reserves (mmbbls)	12.6	14.8	16.6	28.9	33.0	31.0	32.7	26.7	31.5	36.7	56.6	41.6	36.8
Closing Total Proven Reserves (mmboe)	102.3	123.6	158.1	200.0	247.0	273.1	313.0	339.7	369.4	412.7	473.2	418.4	381.6
% Gas Reserves	88%	88%	89%	86%	87%	89%	90%	92%	91%	91%	88%	90%	90%
% Oil Reserves	12%	12%	11%	14%	13%	11%	10%	8%	9%	9%	12%	10%	10%
Proven Reserve Life Index	18.0	21.6	20.7	17.1	16.7	13.9	12.4	11.9	11.4	12.0	15.3	12.9	12.6
Proven Reserve Additions:													
Gas Additions (bcf)	39.9	144.3	236.8	227.0	336.5	280.9	366.6	357.6	340.7	420.1	400.5	1,161.3	1,885.5
Oil Additions (mmbbls)	(0.1)	3.0	2.7	12.5	5.2	-0.4	3.6	-3.7	3.0	7.1	22.3	32.4	32.3
Total Additions (mmboe)	6.5	27.0	42.1	50.3	61.3	46.4	64.7	55.9	59.8	77.1	89.1	226.0	346.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	12.6	21.5	31.5	51.4	48.9	56.2	69.5	46.1	47.5	47.0	57.9	152.5	268.1
Net Acquisitions	0.2	0.2	0.4	1.3	11.7	0.0	0.0	0.0	1.7	-1.1	0.0	0.5	0.5
Revisions of Estimates	(6.3)	5.3	10.2	-2.4	0.6	-9.9	-4.8	9.7	10.6	31.2	31.2	73.0	78.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	193.0%	79.7%	74.8%	102.2%	79.9%	121.2%	107.3%	82.6%	79.5%	61.0%	65.0%	67.5%	77.4%
Net Acquisitions	2.8%	0.6%	1.0%	2.6%	19.2%	0.1%	0.0%	0.0%	2.8%	-1.5%	0.0%	0.2%	0.1%
Revisions of Estimates	-95.7%	19.8%	24.2%	-4.8%	0.9%	-21.3%	-7.3%	17.4%	17.7%	40.5%	35.0%	32.3%	22.5%
Additions as % of Production:													
Gas	137.1%	484.5%	587.2%	352.6%	413.6%	260.9%	261.8%	222.0%	187.3%	222.3%	239.2%	215.7%	280.8%
Oil	-12.5%	392.6%	294.7%	1269.1%	421.0%	-26.7%	185.1%	-220.3%	136.5%	253.6%	756.1%	408.1%	348.5%
Total	115.2%	472.4%	552.5%	429.7%	414.2%	236.5%	255.8%	195.9%	183.8%	224.9%	288.6%	231.4%	285.9%
Additions as % of Reserves:													
Gas	7.4%	22.1%	27.9%	22.1%	26.2%	19.3%	21.8%	19.0%	16.8%	18.6%	16.0%	51.4%	91.2%
Oil	-0.8%	19.9%	16.1%	43.2%	15.7%	-1.4%	11.1%	-14.0%	9.5%	19.4%	39.4%	77.8%	87.6%
Total	6.4%	21.9%	26.7%	25.2%	24.8%	17.0%	20.7%	16.4%	16.2%	18.7%	18.8%	54.0%	90.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$5.1	$4.9	$12.5	$24.1	$12.5	$9.1	$18.9	$9.4	$7.1	$12.6	$6.7	$26.3	$54.6
Exploration & Development	$126.3	$59.2	$235.9	$355.6	$422.7	$549.8	$606.1	$458.1	$322.8	$386.4	$177.0	$886.2	$1,950.4
Net Acquisitions	$0.0	$0.0	$5.6	$3.7	$187.5	$2.4	$0.2	-$2.5	$24.8	$2.9	-$1.6	$26.0	$23.8
Total Expenditures	$131.4	$64.1	$253.9	$383.5	$622.7	$561.4	$625.3	$465.0	$354.6	$401.9	$182.1	$938.6	$2,028.9
Expenditures as % of Total:													
Land & Seismic	3.9%	7.7%	4.9%	6.3%	2.0%	1.6%	3.0%	2.0%	2.0%	3.1%	3.7%	2.8%	2.7%
Exploration & Development	96.1%	92.3%	92.9%	92.7%	67.9%	97.9%	96.9%	98.5%	91.0%	96.1%	97.2%	94.4%	96.1%
Net Acquisitions	0.0%	0.0%	2.2%	1.0%	30.1%	0.4%	0.0%	-0.5%	7.0%	0.7%	-0.9%	2.8%	1.2%
Cashflow (C$million)	$270.6	$171.4	$194.4	$296.5	$297.4	$407.0	$580.1	$429.4	$365.6	$428.5	$367.8	$1,161.9	$2,171.4
Cashflow (C$/boe)	$47.61	$29.98	$25.49	$25.31	$20.11	$20.75	$22.93	$15.05	$11.25	$12.50	$11.92	$11.90	$14.33
Recycle Ratio	2.4x	12.6x	4.2x	3.3x	2.0x	1.7x	2.4x	1.8x	1.9x	2.4x	5.8x	2.9x	2.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$20.65	$2.39	$5.95	$7.75	$8.79	$12.06	$9.66	$8.37	$5.68	$5.10	$2.06	$4.05	$5.79
Net Acquisition Costs	$0.00	$0.00	$13.65	$2.84	$15.96	$83.45	na	na	$14.93	-$2.54	na	$51.12	$46.78
All Sources (incl. revisions)	$20.08	$2.37	$6.03	$7.62	$10.17	$12.10	$9.66	$8.32	$5.93	$5.21	$2.04	$4.15	$5.85
Exploration & Development (excl. revisions)	$10.40	$2.98	$7.88	$7.38	$8.89	$9.94	$9.00	$10.13	$6.94	$8.48	$3.17	$5.99	$7.48
Net Acquisition Costs	$0.00	$0.00	$13.65	$2.84	$15.96	$83.45	na	na	$14.93	-$2.54	na	$51.12	$46.78
All Sources (excl. revisions)	$10.26	$2.96	$7.95	$7.27	$10.26	$9.98	$9.00	$10.08	$7.21	$8.76	$3.14	$6.14	$7.55

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Peyto Exploration & Development Corp. (PEY - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	3.92	3.28	3.23	3.21	2.88	3.04	2.85	2.28	2.04	2.21	2.42	2.22	2.33
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.10	1.12	0.83	0.42	0.26	0.26	0.21	0.20	0.19	0.19	0.25	0.21	0.21
F&D Costs	20.08	2.37	6.03	7.62	10.17	12.10	9.66	8.32	5.93	5.21	2.01	4.14	7.19
Return on Capital	23.01	3.55	8.50	8.75	11.33	10.92	7.68	6.31	4.27	3.98	2.01	3.40	5.79
Income Taxes	4.12	0.39	0.94	2.73	4.36	3.58	2.56	2.10	1.59	1.47	0.74	1.26	2.05
Breakeven Oil Price	52.23	10.72	19.53	22.73	28.99	29.90	22.95	19.21	14.03	13.07	7.43	11.23	17.58
Quality Differential	2.19	1.46	1.99	1.56	2.72	3.90	0.88	2.02	4.97	6.08	11.61	7.56	5.11
Required Brent Price	54.42	12.18	21.52	24.29	31.72	33.81	23.83	21.24	19.00	19.15	19.04	18.78	22.69

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	3.92	3.28	3.23	3.21	2.88	3.04	2.85	2.28	2.04	2.21	2.42	2.22	2.33
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.10	1.12	0.83	0.42	0.26	0.26	0.21	0.20	0.19	0.19	0.25	0.21	0.21
F&D Costs	20.08	2.37	6.03	7.62	10.17	12.10	9.66	8.32	5.93	5.21	2.01	4.14	7.19
Return on Capital	23.01	3.55	8.50	8.75	11.33	10.92	7.68	6.31	4.27	3.98	2.01	3.40	5.79
Income Taxes	4.12	0.39	0.94	2.73	4.36	3.58	2.56	2.10	1.59	1.47	0.74	1.26	2.05
Breakeven Oil Price	52.23	10.72	19.53	22.73	28.99	29.90	22.95	19.21	14.03	13.07	7.43	11.23	17.58
Quality Differential	2.19	1.46	1.99	1.56	2.72	3.90	0.88	2.02	4.97	6.08	11.61	7.56	5.11
Required Brent Price	54.42	12.18	21.52	24.29	31.72	33.81	23.83	21.24	19.00	19.15	19.04	18.78	22.69

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Peyto Exploration & Development Corp. (PEY - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	5.87	4.10	5.84	8.33	8.90	8.83	6.44	4.84	5.29	5.97	9.40	6.54	6.12
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.65	1.40	1.50	1.10	0.80	0.75	0.47	0.41	0.50	0.52	0.97	0.62	0.54
F&D Costs (1-Year)	33.17	2.98	11.49	15.38	31.33	43.66	22.53	20.77	15.87	13.85	5.24	10.93	14.93
Return on Capital	38.97	4.39	15.92	19.39	38.90	41.62	18.44	16.08	11.76	10.72	5.66	9.44	12.45
Income Taxes	6.98	0.49	1.77	6.04	14.96	13.64	6.15	5.36	4.38	3.97	2.08	3.49	4.42
Breakeven Oil Price	**86.64**	**13.36**	**36.53**	**50.25**	**94.89**	**108.49**	**54.04**	**47.46**	**37.80**	**35.03**	**23.34**	**31.01**	**38.46**
Quality Differential	3.27	1.83	3.60	4.05	8.42	11.32	2.00	4.29	12.91	16.47	25.00	18.12	12.13
Required Brent Price	**89.91**	**15.19**	**40.12**	**54.30**	**103.31**	**119.81**	**56.04**	**51.75**	**50.71**	**51.49**	**48.34**	**49.14**	**50.60**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	5.87	4.10	5.84	8.33	8.90	8.83	6.44	4.84	5.29	5.97	9.40	6.54	6.12
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.65	1.40	1.50	1.10	0.80	0.75	0.47	0.41	0.50	0.52	0.97	0.62	0.54
F&D Costs (1-Year)	53.62	11.28	21.37	35.08	40.53	45.45	33.08	19.31	15.43	17.05	16.97	16.39	20.37
Return on Capital	63.07	15.77	28.48	44.17	50.20	43.31	27.00	14.81	11.44	13.19	18.36	14.07	17.03
Income Taxes	11.29	1.75	3.16	13.77	19.31	14.19	9.00	4.94	4.26	4.88	6.74	5.20	6.04
Breakeven Oil Price	**135.50**	**34.30**	**60.36**	**102.46**	**119.74**	**112.53**	**76.00**	**44.31**	**36.92**	**41.61**	**52.44**	**42.81**	**50.11**
Quality Differential	3.27	1.83	3.60	4.05	8.42	11.32	2.00	4.29	12.91	16.47	25.00	18.12	12.13
Required Brent Price	**138.77**	**36.13**	**63.96**	**106.51**	**128.16**	**123.85**	**78.01**	**48.60**	**49.82**	**58.07**	**77.44**	**60.93**	**62.24**

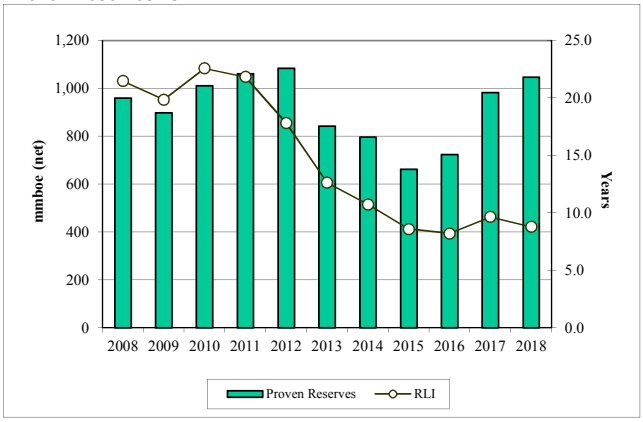
Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE) US$, net

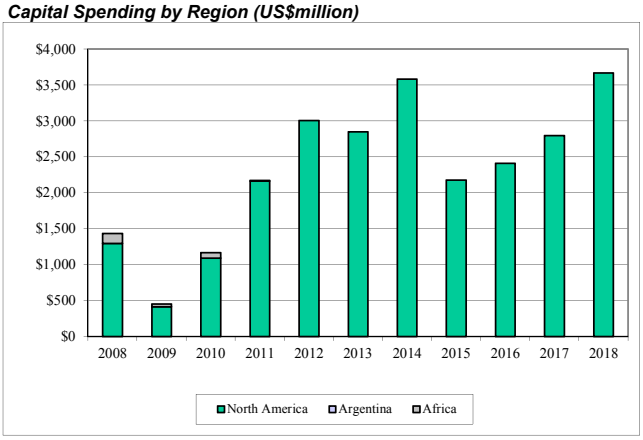
- Pioneer reported results of operations of $8.78/boe in 2018 compared to $6.11/boe in 2017.
- The company's one-year F&D costs rose to $11.71/boe in 2018 from $7.60/boe in 2017. On a realized oil:gas ratio basis, F&D costs increased to $14.07/boe from $9.23/boe, while the costs for PD reserves increased to $14.64/boe from $9.94/boe.
- Pioneer's 2018 costs imply a Brent breakeven oil price of $66.62/boe on total proved reserves, while its PD costs imply a breakeven oil price of $67.61/boe.
- The company reported return on capital of 8.2% in 2018 versus a normalized 2017 ROCE of 5.6%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

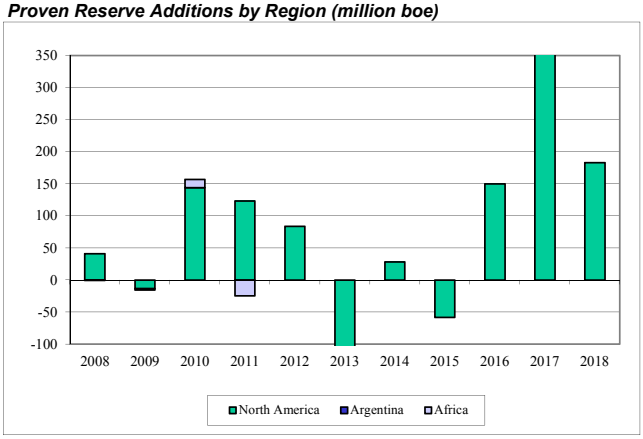
Proven Reserves vs RLI



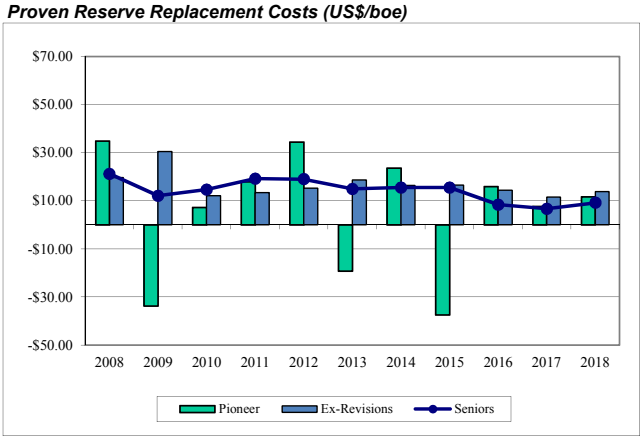
Capital Spending by Region (US$million)



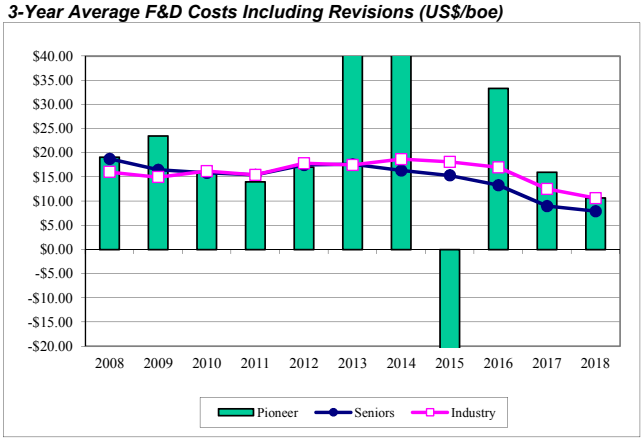
Proven Reserve Additions by Region (million boe)



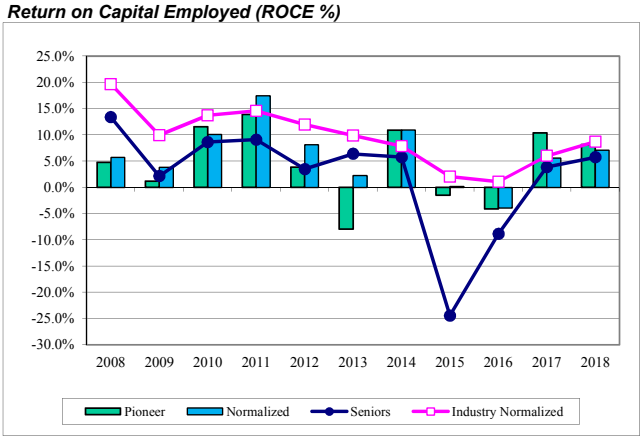
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



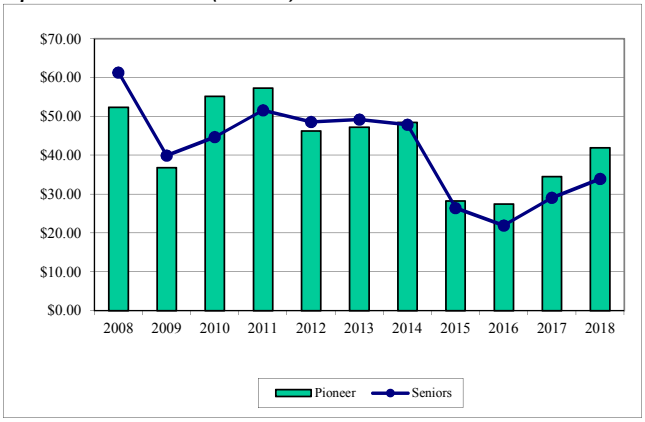
Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

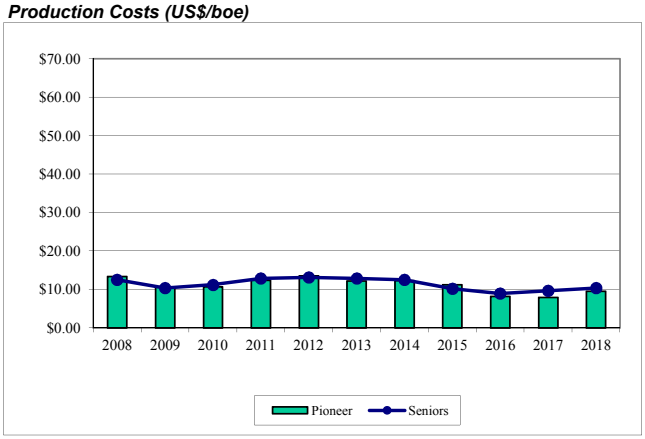
US$/boe, net

Worldwide

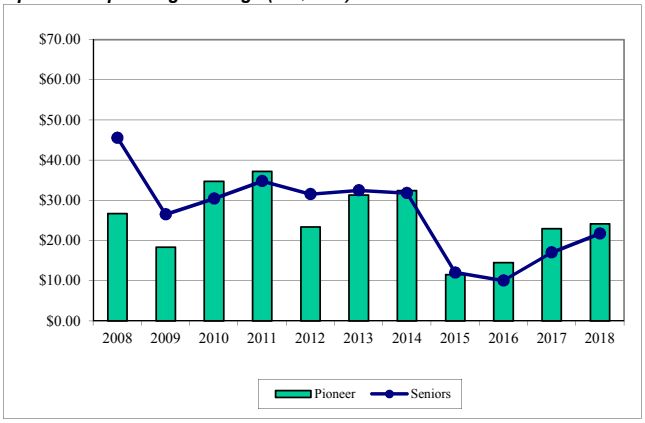
Upstream Net Revenue (US$/boe)



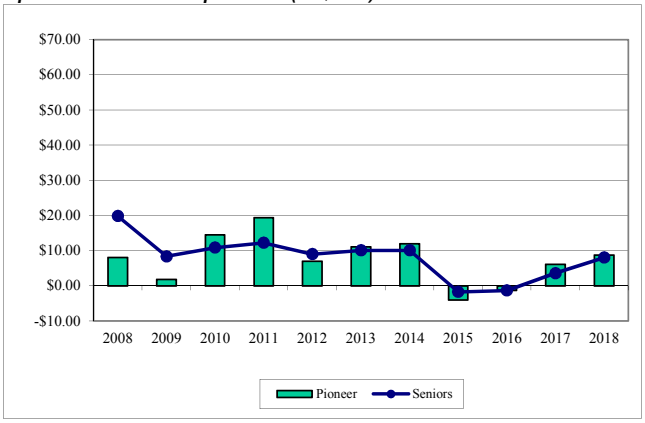
Production Costs (US$/boe)



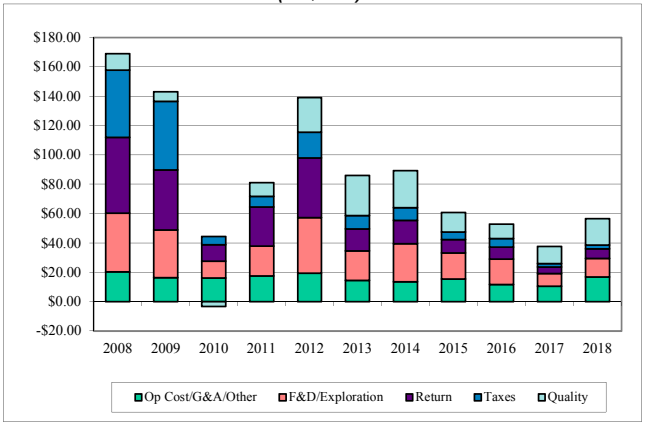
Upstream Operating Earnings (US$/boe)



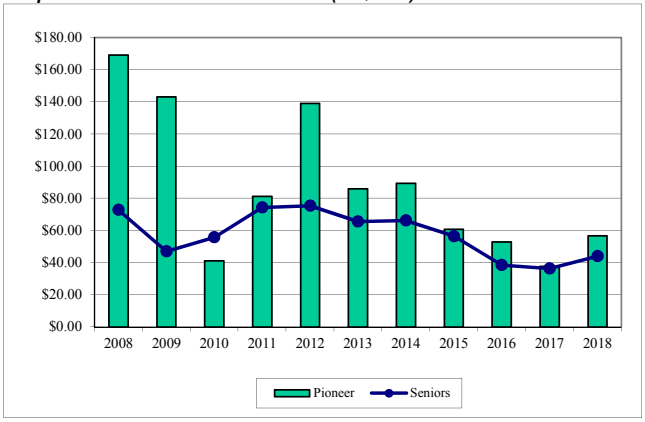
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



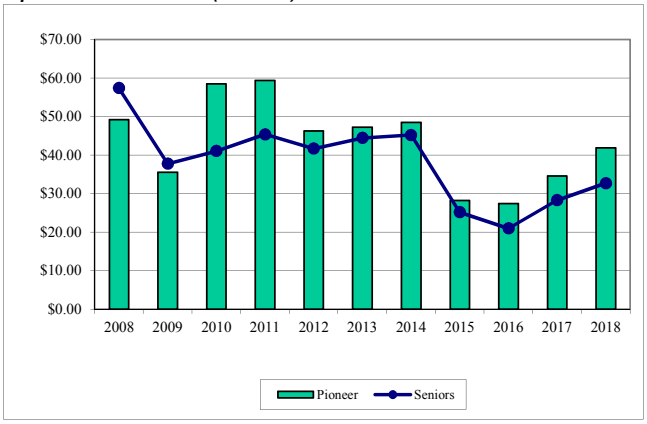
Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

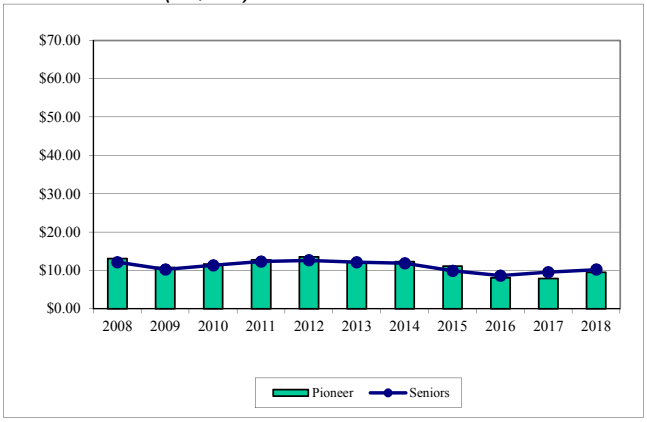
US$/boe, net

North America

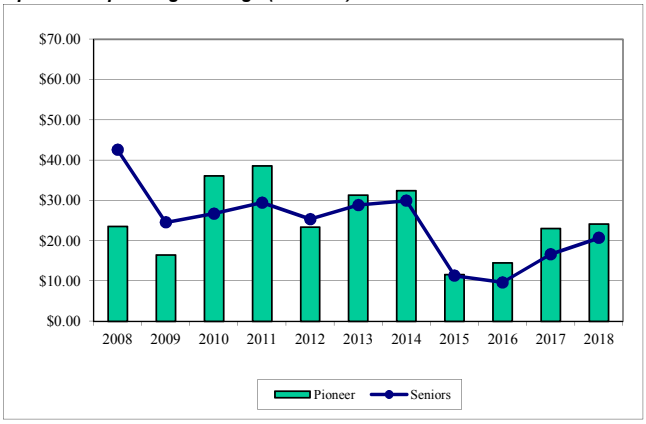
Upstream Net Revenue (US$/boe)



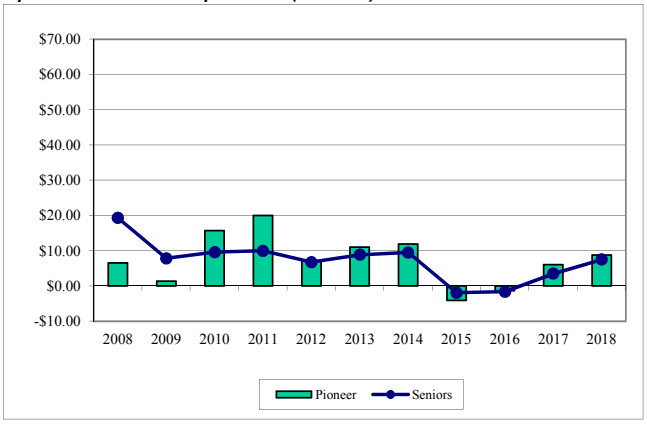
Production Costs (US$/boe)



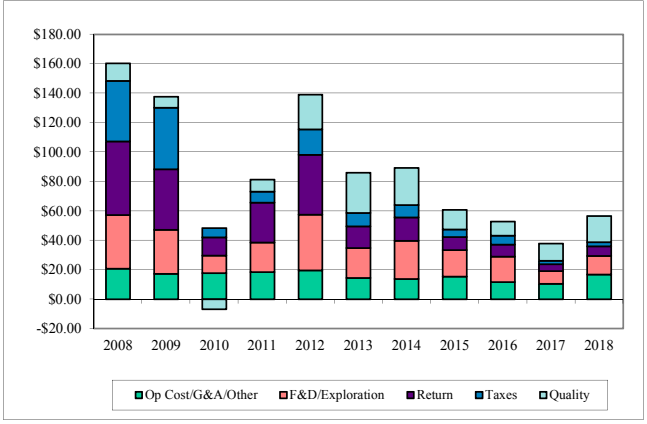
Upstream Operating Earnings (US$/boe)



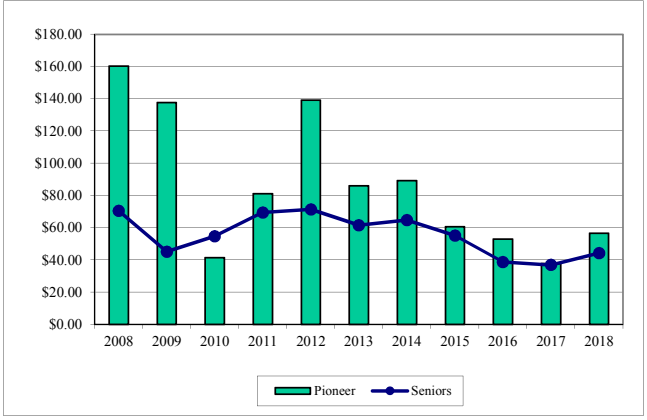
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)

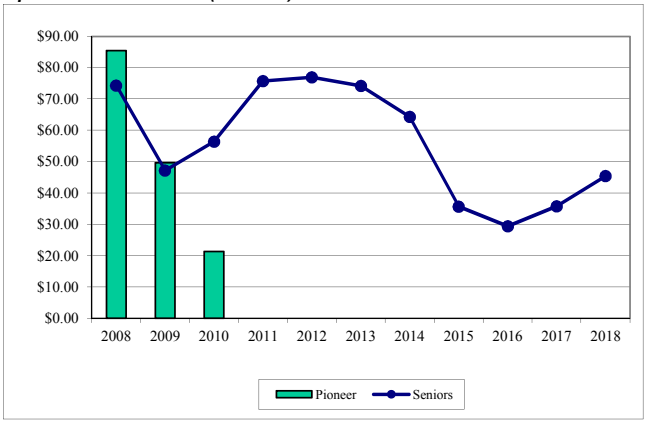


Source: BMO Capital Markets, Company Reports

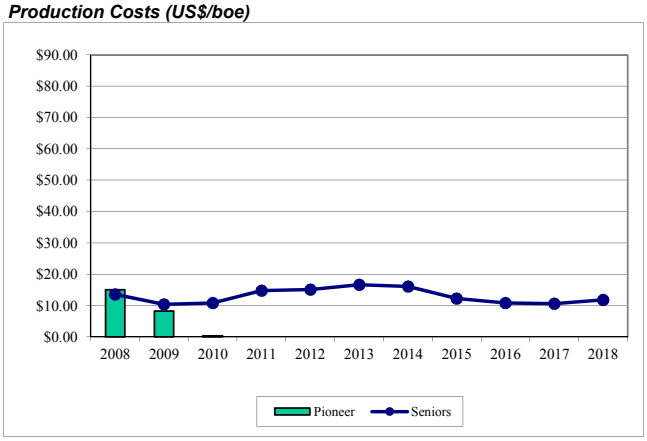
Pioneer Natural Resources (PXD - NYSE) US$/boe, net

Total International

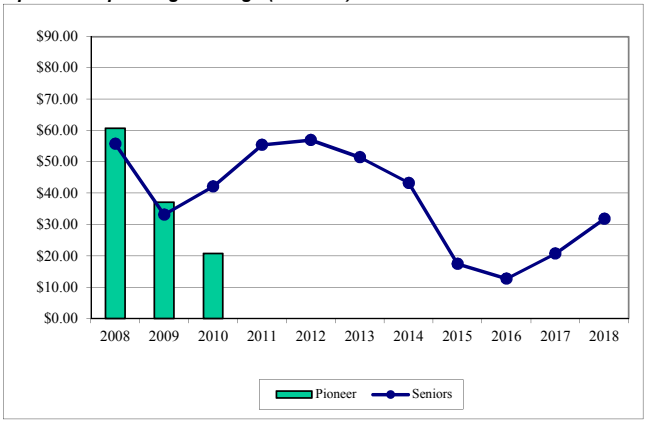
Upstream Net Revenue (US$/boe)



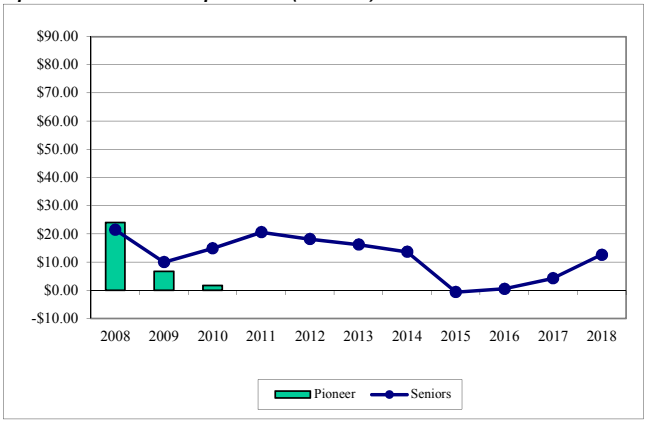
Production Costs (US$/boe)



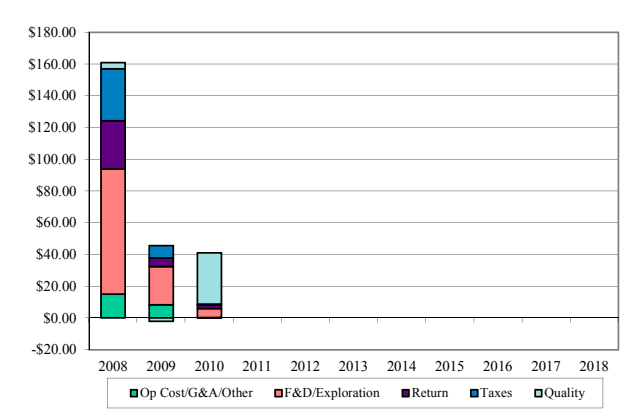
Upstream Operating Earnings (US$/boe)



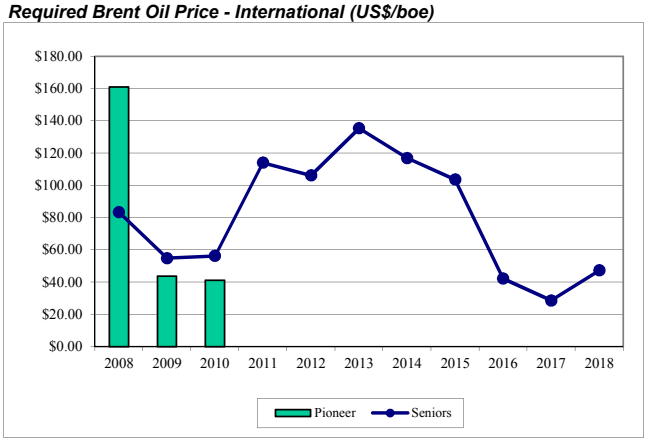
Upstream Results Of Operations (US$/boe)



Breakeven Details - International (US$/boe)



Required Brent Oil Price - International (US$/boe)



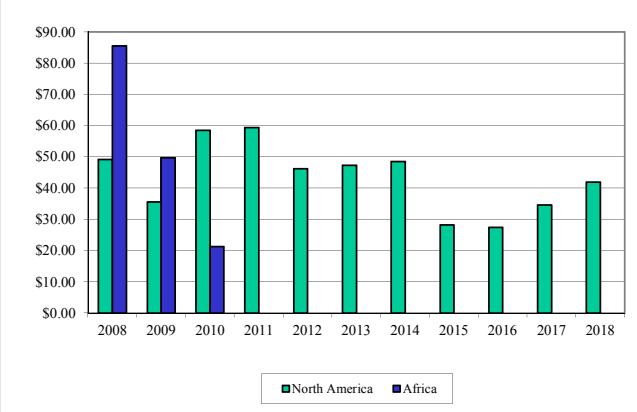
Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

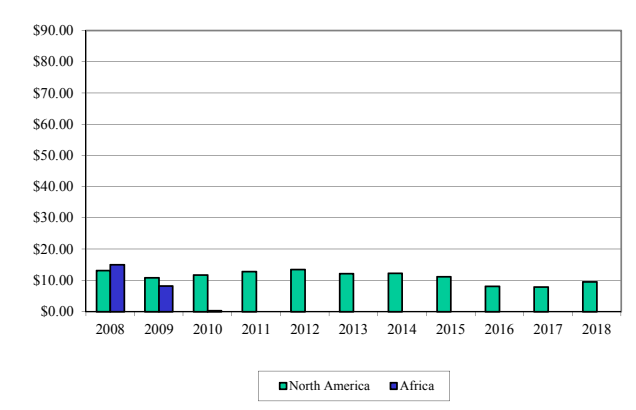
US$/boe, net

International Segments

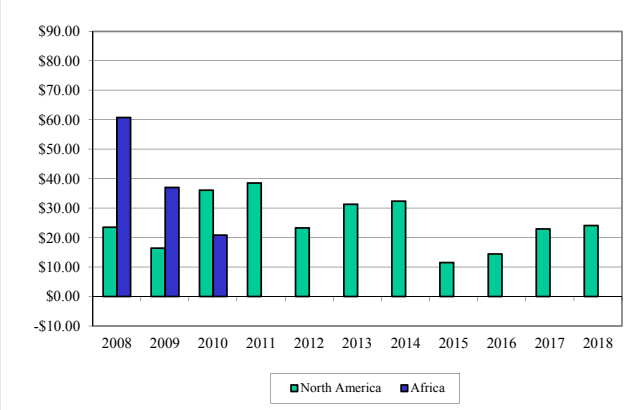
Upstream Net Revenue (US$/boe)



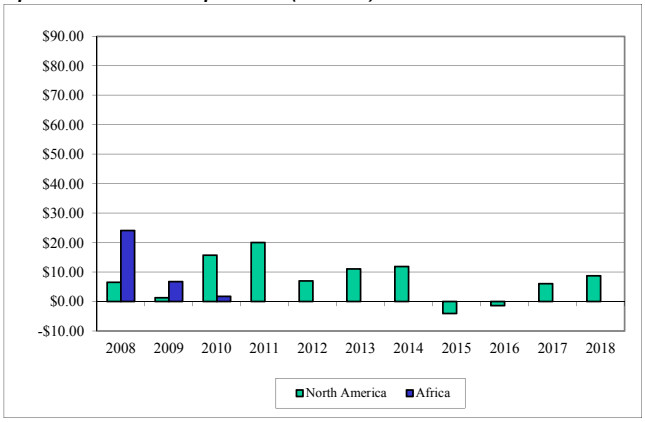
Production Costs (US$/boe)



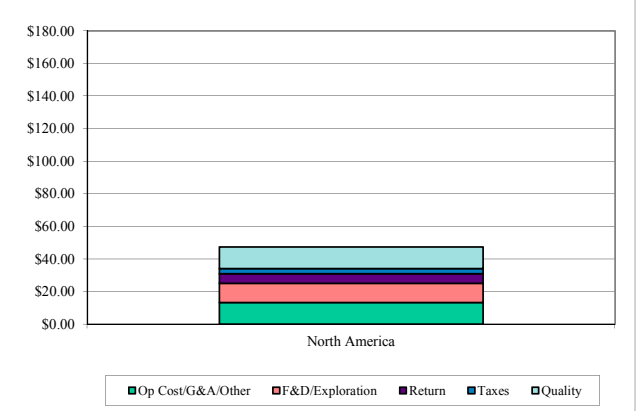
Upstream Operating Earnings (US$/boe)



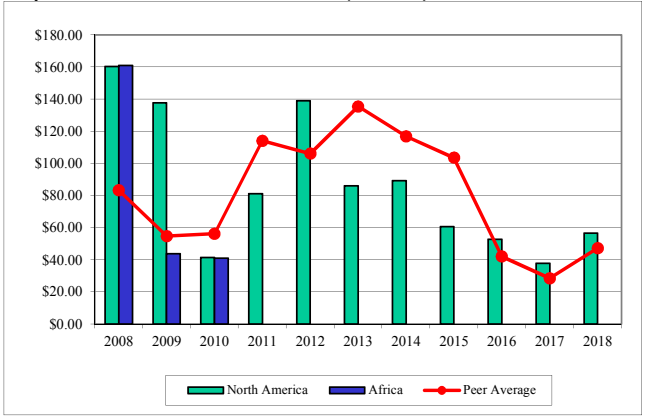
Upstream Results Of Operations (US$/boe)



3-Year Average Breakeven Details by Region (US$/boe)



Required Brent Oil Price - International (US$/boe)



Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	2,277	1,610	1,803	2,294	2,812	3,156	3,599	2,178	2,418	3,518	4,991
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	61	102	668	493	417	564	1,456	2,647	1,406	1,937	4,424
Total Revenue and Other Income	2,338	1,712	2,472	2,787	3,228	3,720	5,055	4,825	3,824	5,455	9,415
Crude Oil and Product Purchases											
Production and Transportation Expenses	595	479	478	601	823	816	913	862	717	806	1,139
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	236	98	190	121	206	98	177	99	119	106	114
General and Administrative	142	140	165	193	248	296	333	327	325	326	381
Depreciation, Depletion and Amortization	512	652	574	607	810	907	1,047	1,385	1,480	1,400	1,534
Interest, net	154	173	183	182	204	184	184	187	207	153	126
Other	243	339	82	418	646	1,968	792	2,374	1,917	2,336	4,856
Earnings Before Income Tax	448	(180)	788	656	280	(562)	1,597	(421)	(959)	309	1,251
Current Income Taxes	49	8	24	9	7	11	4	23	(24)	(5)	2
Future Income Taxes	157	(56)	248	189	85	(222)	552	(178)	(379)	(519)	274
Total Income Taxes	206	(48)	272	198	92	(212)	556	(155)	(403)	(524)	276
Minority Interest	(22)	(10)	(41)	(47)	(51)	(39)	-	-	-		3
Earnings From Continuing Operations	221	(142)	475	411	137	(389)	1,041	(266)	(556)	833	978
Discontinued Operations/Extraordinary Items	(1)	90	130	423	55	(450)	(111)	(7)	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	220	(52)	605	834	192	(838)	930	(273)	(556)	833	978
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-		
Net Earnings to Common Shareholders	220	(52)	605	834	192	(838)	930	(273)	(556)	833	978

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	242	(42)	646	882	243	(800)	930	(273)	(556)	833	975
Charges and Credits Not Impacting Cash	904	664	955	1,198	1,554	2,263	1,697	2,377	1,183	1,188	1,912
Other	2	(23)	(407)	(581)	18	662	(220)	(631)	1,035	153	217
Cash Flow From Operations	1,148	599	1,194	1,498	1,814	2,126	2,407	1,473	1,662	2,174	3,104
Change in Working Capital / Other	(114)	(56)	91	31	24	20	(41)	(225)	(164)	(84)	138
Net Cash From Operating Activities	1,034	543	1,285	1,530	1,838	2,145	2,366	1,248	1,498	2,090	3,242
Total Capital Expenditures	(1,403)	(437)	(1,011)	(1,927)	(2,758)	(2,639)	(3,243)	(2,110)	(1,857)	(2,365)	(3,520)
Acquisitions, net	293	52	241	729	(202)	711	877	553	79	352	469
Other	(41)	(25)	(184)	(363)	(297)	(212)	(333)	(283)	(2,042)	230	441
Net Cash From Investing Activities	(1,151)	(411)	(955)	(1,561)	(3,256)	(2,140)	(2,699)	(1,840)	(3,820)	(1,783)	(2,610)
Net Change in Debt	218	(159)	(204)	(99)	1,165	(1,080)	-	998	(455)	(485)	(450)
Net Change in Common Stock	(16)	39	(14)	444	(63)	1,281	980	-	2,509	(36)	(179)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(36)	(9)	(9)	(10)	(10)	(11)	(12)	(12)	(13)	(14)	(55)
Other	(13)	(23)	(19)	122	19	(32)	(3)	(28)	8	6	(19)
Net Cash From Financing Activities	154	(153)	(246)	457	1,111	158	965	958	2,049	(529)	(703)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-		
Net Increase/(Decrease) in Cash	36	(21)	84	426	(308)	163	632	366	(273)	(222)	(71)
Cash and Equivalents, Beginning of Year	13	49	27	111	537	229	393	1,025	1,391	1,118	896
Cash and Equivalents, End of Year	49	28	111	537	229	392	1,025	1,391	1,118	896	825

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pioneer Natural Resources (PXD - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	487	616	1,197	1,479	1,050	1,728	2,359	3,194	3,298	3,010	2,580
Net Property, Plant and Equipment	7,860	7,567	7,564	8,601	10,078	8,626	10,390	10,022	10,841	11,766	29,984
Other Assets	816	684	918	1,444	1,940	1,938	2,177	1,938	2,320	2,227	(14,661)
Total Assets	9,163	8,867	9,679	11,524	13,069	12,293	14,926	15,154	16,459	17,003	17,903
Total Current Liabilities	695	571	769	1,012	1,035	1,250	1,580	1,462	1,566	2,128	1,818
Long-term Debt	2,964	2,761	2,602	2,529	3,721	2,653	2,665	3,207	2,728	2,283	2,284
Deferred Income Taxes	1,478	1,471	1,751	2,077	2,140	1,473	1,803	1,776	1,397	899	1,152
Other Liabilities and Deferred Credits	385	421	331	255	305	302	289	334	357	414	538
Total Liabilities	5,522	5,224	5,453	5,873	7,202	5,678	6,337	6,779	6,048	5,724	5,792
Minority Interests	59	107	105	162	178	13	8	7	7	5	-
Common Shares	1	1	1	1	1	1	2	2	2	2	2
Contributed Surplus (Paid-in Capital)	2,860	2,981	3,023	3,614	3,684	5,080	6,167	6,267	8,892	8,974	9,062
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	999	918	1,510	2,335	2,515	1,665	2,583	2,298	1,728	2,547	3,470
Other / Comprehensive Income (Loss)	(278)	(364)	(414)	(461)	(511)	(145)	(171)	(199)	(218)	(249)	(423)
Total Shareholders' Equity	3,582	3,536	4,121	5,489	5,689	6,602	8,581	8,368	10,404	11,274	12,111
Total Liabilities and Shareholders' Equity	9,163	8,867	9,679	11,524	13,069	12,293	14,926	15,154	16,459	17,003	17,903
Return on Capital Employed (ROCE)	**4.7%**	**1.2%**	**11.6%**	**13.9%**	**3.9%**	**-8.0%**	**10.9%**	**-1.5%**	**-4.1%**	**10.3%**	**8.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	2,338	1,667	2,472	2,787	2,812	3,156	3,599	2,178	2,418	3,518	4,991	10,927	16,704
Production Costs	595	479	478	601	823	816	913	862	717	806	1,139	2,662	4,437
Exploration	236	98	190	121	206	98	177	99	119	106	114	339	615
DD&A	512	652	574	607	810	907	1,047	1,385	1,480	1,400	1,534	4,414	6,846
G&A/Other	311	259	247	256	362	149	101	327	306	263	863	1,432	1,860
Pre-tax Results Of Operations	684	180	982	1,201	610	1,185	1,361	-495	-204	943	1,341	2,080	2,946
Income Taxes	322	96	333	261	184	447	474	-182	-86	321	296	531	822
Results Of Operations	362	84	649	940	426	738	887	-313	-118	622	1,045	1,549	2,124

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	2,004	1,460	2,387	2,787	2,812	3,156	3,599	2,178	2,418	3,518	4,991	10,927	16,704
Production Costs	536	444	477	601	823	816	913	862	717	806	1,139	2,662	4,437
Exploration	198	80	190	121	206	98	177	99	119	106	114	339	615
DD&A	470	565	500	607	810	907	1,047	1,385	1,480	1,400	1,534	4,414	6,846
G&A/Other	311	259	247	256	362	149	101	327	306	263	863	1,432	1,860
Pre-tax Results Of Operations	489	112	973	1,201	610	1,185	1,361	-495	-204	943	1,341	2,080	2,946
Income Taxes	220	56	331	261	184	447	474	-182	-86	321	296	531	822
Results Of Operations	268	56	642	940	426	738	887	-313	-118	622	1,045	1,549	2,124

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	334	208	85	0	0	0	0	0	0	0	0	0	0
Production Costs	59	34	1	0	0	0	0	0	0	0	0	0	0
Exploration	38	18	1	0	0	0	0	0	0	0	0	0	0
DD&A	42	87	74	0	0	0	0	0	0	0	0	0	0
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	196	68	9	0	0	0	0	0	0	0	0	0	0
Income Taxes	102	40	2	0	0	0	0	0	0	0	0	0	0
Results Of Operations	94	28	7	0	0	0	0	0	0	0	0	0	0

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$52.34	$36.84	$55.21	$57.36	$46.27	$47.29	$48.49	$28.26	$27.45	$34.54	$41.91	$35.36	$36.29
Production Costs	$13.32	$10.58	$10.68	$12.37	$13.55	$12.23	$12.30	$11.19	$8.14	$7.91	$9.57	$8.61	$9.64
Exploration	$5.27	$2.17	$4.25	$2.50	$3.39	$1.48	$2.38	$1.28	$1.35	$1.04	$0.96	$1.10	$1.34
DD&A	$11.46	$14.40	$12.83	$12.50	$13.33	$13.59	$14.11	$17.97	$16.80	$13.74	$12.88	$14.28	$14.87
G&A/Other	$6.97	$5.72	$5.52	$5.28	$5.95	$2.24	$1.36	$4.24	$3.47	$2.58	$7.25	$4.63	$4.04
Pre-tax Results Of Operations	$15.32	$3.98	$21.94	$24.72	$10.04	$17.76	$18.34	-$6.42	-$2.32	$9.26	$11.26	$6.73	$6.40
Income Taxes	$7.21	$2.13	$7.44	$5.36	$3.02	$6.69	$6.38	-$2.36	-$0.97	$3.15	$2.48	$1.72	$1.79
Results Of Operations	$8.11	$1.85	$14.50	$19.35	$7.02	$11.06	$11.95	-$4.06	-$1.34	$6.11	$8.78	$5.01	$4.61

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$49.16	$35.53	$58.53	$59.41	$46.27	$47.29	$48.49	$28.26	$27.45	$34.54	$41.91	$35.36	$36.29
Production Costs	$13.16	$10.81	$11.70	$12.81	$13.55	$12.23	$12.30	$11.19	$8.14	$7.91	$9.57	$8.61	$9.64
Exploration	$4.85	$1.94	$4.65	$2.59	$3.39	$1.48	$2.38	$1.28	$1.35	$1.04	$0.96	$1.10	$1.34
DD&A	$11.53	$13.75	$12.26	$12.95	$13.33	$13.59	$14.11	$17.97	$16.80	$13.74	$12.88	$14.28	$14.87
G&A/Other	$7.64	$6.30	$6.06	$5.47	$5.95	$2.24	$1.36	$4.24	$3.47	$2.58	$7.25	$4.63	$4.04
Pre-tax Results Of Operations	$11.99	$2.72	$23.87	$25.60	$10.04	$17.76	$18.34	-$6.42	-$2.32	$9.26	$11.26	$6.73	$6.40
Income Taxes	$5.41	$1.37	$8.12	$5.56	$3.02	$6.69	$6.38	-$2.36	-$0.97	$3.15	$2.48	$1.72	$1.79
Results Of Operations	$6.58	$1.35	$15.75	$20.04	$7.02	$11.06	$11.95	-$4.06	-$1.34	$6.11	$8.78	$5.01	$4.61

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	$85.49	$49.71	$21.30	na	na	na	na	na	na	na	na	na	na
Production Costs	$15.03	$8.25	$0.35	na	na	na	na	na	na	na	na	na	na
Exploration	$9.66	$4.37	$0.13	na	na	na	na	na	na	na	na	na	na
DD&A	$10.73	$20.74	$18.62	na	na	na	na	na	na	na	na	na	na
G&A/Other	$0.00	$0.00	$0.00	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	$50.06	$16.35	$2.20	na	na	na	na	na	na	na	na	na	na
Income Taxes	$25.98	$9.59	$0.46	na	na	na	na	na	na	na	na	na	na
Results Of Operations	$24.08	$6.76	$1.74	na	na	na	na	na	na	na	na	na	na

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Africa													
Net Revenue	$85.49	$49.71	$21.30	na	na	na	na	na	na	na	na	na	na
Production Costs	$15.03	$8.25	$0.35	na	na	na	na	na	na	na	na	na	na
Exploration	$9.66	$4.37	$0.13	na	na	na	na	na	na	na	na	na	na
DD&A	$10.73	$20.74	$18.62	na	na	na	na	na	na	na	na	na	na
G&A/Other	$0.00	$0.00	$0.00	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	$50.06	$16.35	$2.20	na	na	na	na	na	na	na	na	na	na
Income Taxes	$25.98	$9.59	$0.46	na	na	na	na	na	na	na	na	na	na
Results Of Operations	$24.08	$6.76	$1.74	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	435.3	431.2	415.2	413.5	441.6	432.0	423.1	403.2	382.2	393.1	430.9	402.1	406.5
Liquids Production (b/d)	49,844	52,132	53,441	64,184	92,885	110,833	132,819	143,940	177,666	213,578	254,419	215,221	184,484
Total Production (boe/d)	122,394	124,005	122,647	133,102	166,491	182,837	203,332	211,142	241,369	279,087	326,236	282,230	252,233
% Gas Production	59%	58%	56%	52%	44%	39%	35%	32%	26%	23%	22%	24%	27%
% Oil Production	41%	42%	44%	48%	56%	61%	65%	68%	74%	77%	78%	76%	73%
Proven Reserves:													
Gas Reserves (bcf)	2,979.8	2,498.8	2,674.5	2,518.4	2,184.8	1,893.7	1,656.2	1,343.8	1,252.1	1,739.2	1,445.9	1,479.1	1,487.4
Oil Reserves (mmbbls)	463.0	482.2	565.0	640.8	719.2	527.3	521.1	438.1	514.9	693.2	805.7	671.3	594.6
Total Proven Reserves (mmboe)	959.6	898.7	1,010.8	1,060.6	1,083.3	842.9	797.1	662.1	723.6	983.0	1,046.7	917.8	842.5
% Gas Reserves	52%	46%	44%	40%	34%	37%	35%	34%	29%	29%	23%	27%	29%
% Oil Reserves	48%	54%	56%	60%	66%	63%	65%	66%	71%	71%	77%	73%	71%
Proven Reserve Life Index	21.5	19.9	22.6	21.8	17.8	12.6	10.7	8.6	8.2	9.7	8.8	8.9	9.2
Proven Reserve Additions:													
Gas Additions (bcf)	174.2	(323.6)	327.3	-5.2	-172.4	-133.4	-83.0	-165.2	47.8	630.6	-136.0	542.3	294.1
Oil Additions (mmbbls)	11.4	38.2	102.4	99.2	112.3	-151.4	42.3	-30.5	141.7	256.2	205.4	603.3	615.1
Total Additions (mmboe)	40.5	(15.7)	156.9	98.3	83.6	-173.7	28.4	-58.0	149.6	361.3	182.7	693.7	664.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	58.8	14.8	93.4	157.7	187.7	151.9	216.8	130.2	162.3	240.6	264.9	667.7	1,014.8
Acquisitions	14.3	0.0	3.1	4.4	9.0	0.3	2.3	0.7	4.2	1.3	0.0	5.6	8.6
Dispositions	(0.7)	(2.3)	(5.7)	(23.4)	(3.7)	(25.8)	(123.8)	(0.0)	(1.4)	(6.6)	(130.5)	(138.5)	(262.3)
Revisions of Estimates	(31.9)	(28.1)	66.1	-40.4	-109.4	-300.1	-66.9	-188.9	-15.5	126.0	48.3	158.9	(96.9)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	145.2%	-94.3%	59.5%	160.4%	224.6%	-87.4%	762.4%	-224.5%	108.4%	66.6%	144.9%	96.3%	152.8%
Acquisitions	35.2%	0.0%	1.9%	4.5%	10.8%	-0.2%	8.2%	-1.2%	2.8%	0.4%	0.0%	0.8%	1.3%
Dispositions	-1.6%	14.8%	-3.6%	-23.8%	-4.4%	14.8%	-435.3%	0.0%	-0.9%	-1.8%	-71.4%	-20.0%	-39.5%
Revisions of Estimates	-78.8%	179.5%	42.1%	-41.0%	-131.0%	172.8%	-235.3%	325.6%	-10.3%	34.9%	26.5%	22.9%	-14.6%
Additions as % of Production:													
Gas	109.7%	-205.6%	215.9%	-3.5%	-106.9%	-84.6%	-53.8%	-112.3%	34.2%	439.6%	-86.5%	123.2%	39.6%
Oil	62.9%	201.0%	524.8%	423.5%	331.2%	-374.4%	87.2%	-58.0%	218.5%	328.7%	221.2%	256.0%	182.7%
Total	90.6%	-34.6%	350.5%	202.4%	137.5%	-260.3%	38.3%	-75.3%	169.8%	354.7%	153.5%	224.5%	144.3%
Additions as % of Reserves:													
Gas	5.8%	-12.9%	12.2%	-0.2%	-7.9%	-7.0%	-5.0%	-12.3%	3.8%	36.3%	-9.4%	36.7%	19.8%
Oil	2.5%	7.9%	18.1%	15.5%	15.6%	-28.7%	8.1%	-7.0%	27.5%	37.0%	25.5%	89.9%	103.4%
Total	4.2%	-1.7%	15.5%	9.3%	7.7%	-20.6%	3.6%	-8.8%	20.7%	36.8%	17.5%	75.6%	78.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$426.6	$112.0	$277.7	$567.2	$966.8	$1,290.5	$1,943.0	$1,245.0	$1,454.0	$2,033.0	$2,654.0	$6,141.0	$9,329.0
Development	$871.2	$250.6	$706.1	$1,474.4	$1,881.5	$1,481.3	$1,535.0	$894.0	$509.0	$628.0	$949.0	$2,086.0	$4,515.0
Acquisitions	$137.6	$88.9	$181.6	$131.9	$157.5	$76.0	$104.0	$36.0	$446.0	$136.0	$65.0	$647.0	$787.0
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	na	na
Total Expenditures	$1,435.4	$451.6	$1,165.4	$2,173.5	$3,005.8	$2,847.8	$3,582.0	$2,175.0	$2,409.0	$2,797.0	$3,668.0	$8,874.0	$14,631.0
Expenditures as % of Total:													
Exploration	29.7%	24.8%	23.8%	26.1%	32.2%	45.3%	54.2%	57.2%	60.4%	72.7%	72.4%	69.2%	63.8%
Development	60.7%	55.5%	60.6%	67.8%	62.6%	52.0%	42.9%	41.1%	21.1%	22.5%	25.9%	23.5%	30.9%
Acquisitions	9.6%	19.7%	15.6%	6.1%	5.2%	2.7%	2.9%	1.7%	18.5%	4.9%	1.8%	7.3%	5.4%
Cashflow (US$million)	$1,109.7	$833.5	$1,413.4	$1,668.9	$1,442.9	$1,743.8	$2,111.2	$1,171.2	$1,480.7	$2,128.4	$2,693.1	$6,302.3	$9,584.7
Cashflow (US$/boe)	$24.84	$18.41	$31.57	$34.35	$23.74	$26.13	$28.45	$15.20	$16.81	$20.89	$22.62	$20.39	$20.82
Recycle Ratio	0.7x	-0.5x	4.4x	1.9x	0.7x	-1.4x	1.2x	-0.4x	1.1x	2.7x	1.9x	1.9x	1.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$48.30	-$27.15	$6.17	$17.40	$36.41	-$18.70	$23.20	-$36.44	$13.37	$7.26	$11.50	$9.95	$15.08
Acquisition Costs	$9.65	na	$59.34	$29.74	$17.50	$258.73	$44.67	$51.25	$106.13	$101.83	$1,930.69	-$4.87	-$3.10
All Sources (incl. revisions)	$34.89	-$33.80	$7.17	$17.85	$34.46	-$19.25	$23.53	-$37.51	$15.95	$7.60	$11.71	$10.66	$15.79
Exploration & Development (excl. revisions)	$22.08	$24.53	$10.53	$12.95	$15.18	$18.25	$16.04	$16.43	$12.10	$11.06	$13.60	$12.32	$13.64
Acquisition Costs	$9.65	na	$59.34	$29.74	$17.50	$258.73	$44.67	$51.25	$106.13	$101.83	$1,930.69	-$4.87	-$3.10
All Sources (excl. revisions)	$19.65	$30.54	$12.08	$13.41	$15.28	$18.71	$16.34	$16.61	$14.47	$11.56	$13.85	$13.18	$14.30
Geographically Segmented Costs													
North America	$31.67	-$38.09	$7.31	$17.55	$34.46	-$19.25	$23.53	-$37.51	$15.95	$7.60	$11.71	$10.66	$15.79
Argentina	na	na	na	na	na	na	na	na	na	na	na	na	na
Africa	$583.60	-$15.05	$5.52	-$7.76	na	na	na	na	na	na	na	na	na

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pioneer Natural Resources (PXD - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Operating Costs	13.32	10.58	10.68	12.37	13.55	12.23	12.30	11.19	8.14	7.91	9.57	8.61	9.64
Exploration Expense	5.27	2.17	4.25	2.50	3.39	1.48	2.38	1.28	1.35	1.04	0.96	1.10	1.34
G&A/Other	6.97	5.72	5.52	5.28	5.95	2.24	1.36	4.24	3.47	2.58	7.25	4.63	4.04
F&D Costs	34.89	30.54	7.17	17.85	34.46	18.71	23.53	16.61	15.95	7.60	11.71	10.66	15.08
Return on Capital	51.54	40.79	11.12	26.55	40.66	14.92	15.93	8.94	8.20	4.59	6.44	5.93	8.63
Income Taxes	45.79	46.78	5.70	7.36	17.52	9.03	8.51	5.21	5.94	2.36	2.76	3.24	4.75
Breakeven Oil Price	157.78	136.57	44.43	71.89	115.54	58.60	64.02	47.47	43.06	26.08	38.68	34.18	43.48
Quality Differential	11.36	6.65	(3.35)	9.33	23.55	27.44	25.30	13.27	9.81	11.65	17.91	13.12	15.59
Required Brent Price	169.14	143.23	41.09	81.22	139.09	86.04	89.32	60.74	52.87	37.73	56.59	47.30	59.07

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Operating Costs	13.16	10.81	11.70	12.81	13.55	12.23	12.30	11.19	8.14	7.91	9.57	8.61	9.64
Exploration Expense	4.85	1.94	4.65	2.59	3.39	1.48	2.38	1.28	1.35	1.04	0.96	1.10	1.34
G&A/Other	7.64	6.30	6.06	5.47	5.95	2.24	1.36	4.24	3.47	2.58	7.25	4.63	4.04
F&D Costs	31.67	28.01	7.31	17.55	34.46	18.71	23.53	16.61	15.95	7.60	11.71	10.66	15.08
Return on Capital	49.96	41.34	12.28	27.19	40.66	14.92	15.93	8.94	8.20	4.59	6.44	5.93	8.63
Income Taxes	41.05	41.71	6.33	7.54	17.52	9.03	8.51	5.21	5.94	2.36	2.76	3.24	4.75
Breakeven Oil Price	148.32	130.11	48.33	73.13	115.54	58.60	64.02	47.47	43.06	26.08	38.68	34.18	43.48
Quality Differential	12.07	7.53	(6.82)	8.07	23.55	27.44	25.30	13.27	9.81	11.65	17.91	13.12	15.59
Required Brent Price	160.39	137.65	41.51	81.21	139.09	86.04	89.32	60.74	52.87	37.73	56.59	47.30	59.07

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Operating Costs	15.03	8.25	0.35	na	na	na	na	na	na	na	na	na	na
Exploration Expense	9.66	4.37	0.13	na	na	na	na	na	na	na	na	na	na
G&A/Other	-	-	-	na	na	na	na	na	na	na	na	na	na
F&D Costs	69.32	19.80	5.52	na	na	na	na	na	na	na	na	na	na
Return on Capital	30.33	5.51	2.29	na	na	na	na	na	na	na	na	na	na
Income Taxes	32.72	7.81	0.60	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	157.07	45.74	8.88	na	na	na	na	na	na	na	na	na	na
Quality Differential	3.96	(2.00)	32.20	na	na	na	na	na	na	na	na	na	na
Required Brent Price	161.03	43.73	41.09	na	na	na	na	na	na	na	na	na	na

International Segments (US$/boe):

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Africa													
Operating Costs	15.03	8.25	0.35	na	na	na	na	na	na	na	na	na	na
Exploration Expense	9.66	4.37	0.13	na	na	na	na	na	na	na	na	na	na
G&A/Other	-	-	-	na	na	na	na	na	na	na	na	na	na
F&D Costs	69.32	19.80	5.52	na	na	na	na	na	na	na	na	na	na
Return on Capital	30.33	5.51	2.31	na	na	na	na	na	na	na	na	na	na
Income Taxes	32.72	7.81	0.61	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	157.07	45.74	8.91	na	na	na	na	na	na	na	na	na	na
Quality Differential	3.96	(2.00)	32.20	na	na	na	na	na	na	na	na	na	na
Required Brent Price	161.03	43.73	41.11	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Pioneer Natural Resources (PXD - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.99	15.45	15.75	19.05	20.53	16.98	15.73	13.79	9.73	9.24	11.15	10.12	11.57
Exploration Expense	7.12	3.17	6.26	3.85	5.14	2.05	3.05	1.58	1.61	1.22	1.12	1.29	1.60
G&A/Other	9.41	8.36	8.13	8.13	9.02	3.11	1.74	5.23	4.15	3.02	8.45	5.44	4.85
F&D Costs (1-Year)	50.47	28.74	9.00	18.15	28.05	22.30	29.06	18.65	16.51	9.23	14.07	12.50	17.50
Return on Capital	78.48	42.54	15.73	31.24	37.89	18.31	19.68	9.89	8.45	5.34	7.67	6.79	10.00
Income Taxes	69.72	48.79	8.06	8.66	16.32	11.08	10.51	5.76	6.13	2.75	3.29	3.71	5.51
Breakeven Oil Price	**233.18**	**147.05**	**62.93**	**89.07**	**116.96**	**73.83**	**79.77**	**54.91**	**46.58**	**30.80**	**45.74**	**39.86**	**51.03**
Quality Differential	15.34	9.72	(4.93)	14.37	35.68	38.13	32.35	16.36	11.73	13.61	20.88	15.40	18.99
Required Brent Price	**248.52**	**156.78**	**58.00**	**103.44**	**152.64**	**111.96**	**112.12**	**71.27**	**58.31**	**44.41**	**66.62**	**55.26**	**70.02**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.99	15.45	15.75	19.05	20.53	16.98	15.73	13.79	9.73	9.24	11.15	10.12	11.57
Exploration Expense	7.12	3.17	6.26	3.85	5.14	2.05	3.05	1.58	1.61	1.22	1.12	1.29	1.60
G&A/Other	9.41	8.36	8.13	8.13	9.02	3.11	1.74	5.23	4.15	3.02	8.45	5.44	4.85
F&D Costs (1-Year)	133.74	18.12	14.43	27.61	34.89	28.37	30.16	17.53	14.87	9.94	14.64	12.79	17.43
Return on Capital	196.14	25.41	25.07	47.08	45.94	23.26	20.42	9.29	7.44	5.75	7.97	6.94	9.86
Income Taxes	174.26	29.14	12.85	13.05	19.79	14.08	10.91	5.41	5.39	2.96	3.42	3.79	5.44
Breakeven Oil Price	**538.65**	**99.64**	**82.49**	**118.77**	**135.31**	**87.85**	**82.01**	**52.84**	**43.20**	**32.13**	**46.73**	**40.38**	**50.75**
Quality Differential	15.34	9.72	(4.93)	14.37	35.68	38.13	32.35	16.36	11.73	13.61	20.88	15.40	18.99
Required Brent Price	**553.99**	**109.37**	**77.56**	**133.14**	**170.99**	**125.98**	**114.37**	**69.20**	**54.93**	**45.74**	**67.61**	**55.78**	**69.73**

Source: BMO Capital Markets, Company Reports

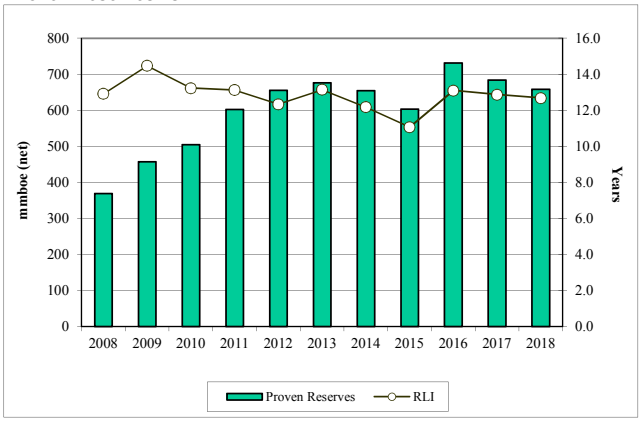
See pages F1 to F4 for analyst coverage.

QEP Resources (QEP - NYSE, Restricted) US$, net

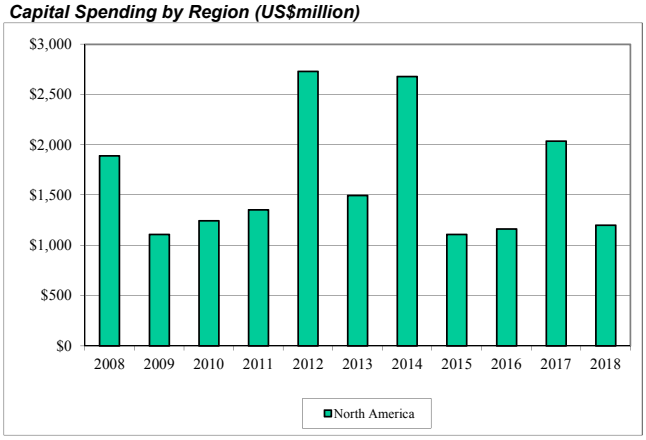
- QEP reported results of operations of $7.33/boe in 2018 compared to $1.44/boe in 2017.
- The company's one-year F&D costs came in lower at $8.09/boe versus $12.32/boe last year. On a realized oil:gas basis, F&D costs decreased to $11.41/boe from $14.34/boe in 2017, while costs for PD reserves dropped to $18.94/boe from $32.36/boe the previous year.
- QEP's 2018 costs imply a required Brent breakeven of $56.01/boe on a realized ratio basis, while its PD costs imply a breakeven of $73.22/boe.
- The company reported a loss on capital of 15.6% in 2018 versus a gain of 6.1% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

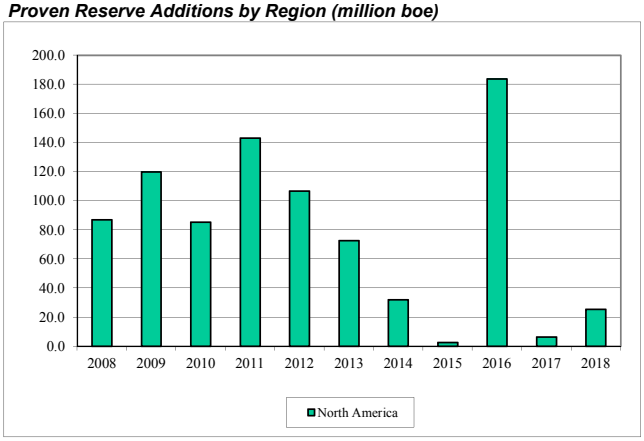
Proven Reserves vs RLI



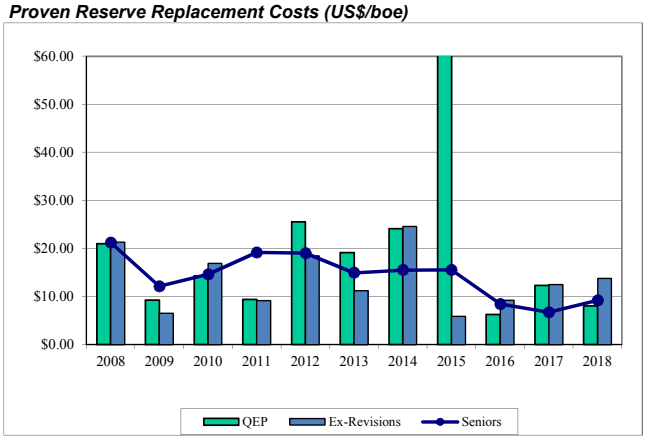
Capital Spending by Region (US$million)



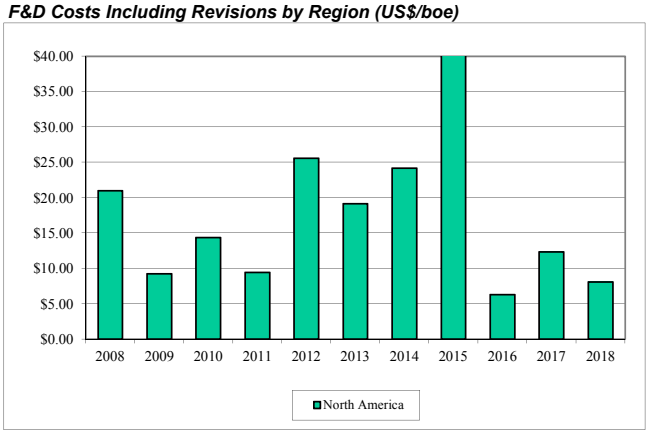
Proven Reserve Additions by Region (million boe)



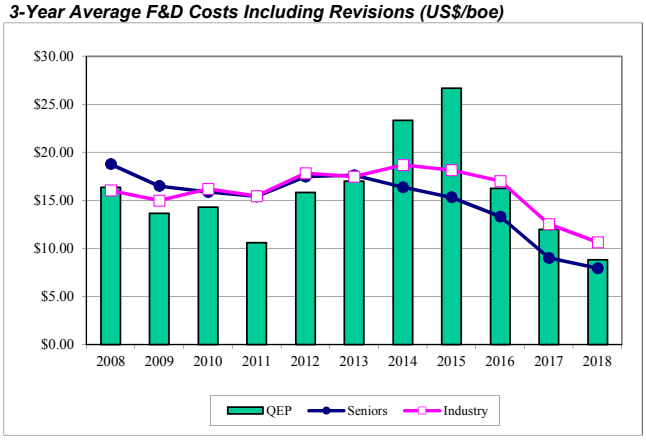
Proven Reserve Replacement Costs (US$/boe)



F&D Costs Including Revisions by Region (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Source: BMO Capital Markets, Company Reports

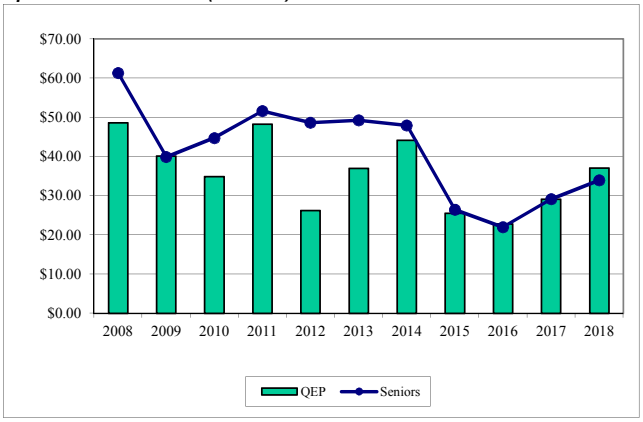
See pages F1 to F4 for analyst coverage.

QEP Resources (QEP - NYSE, Restricted)

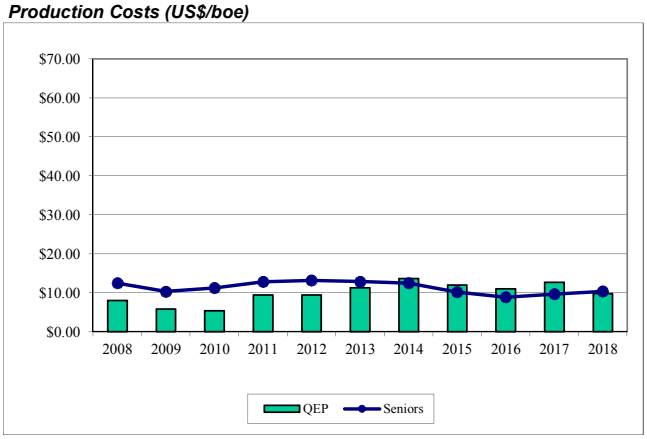
US$/boe, net

Worldwide

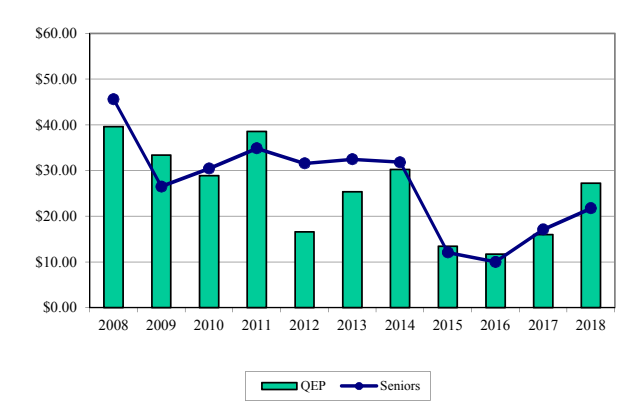
Upstream Net Revenue (US$/boe)



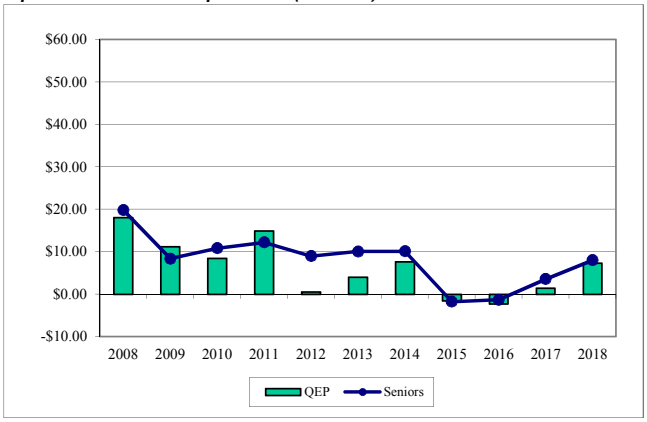
Production Costs (US$/boe)



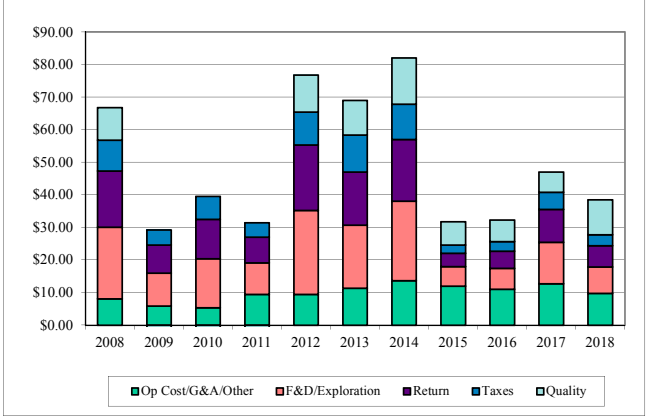
Upstream Operating Earnings (US$/boe)



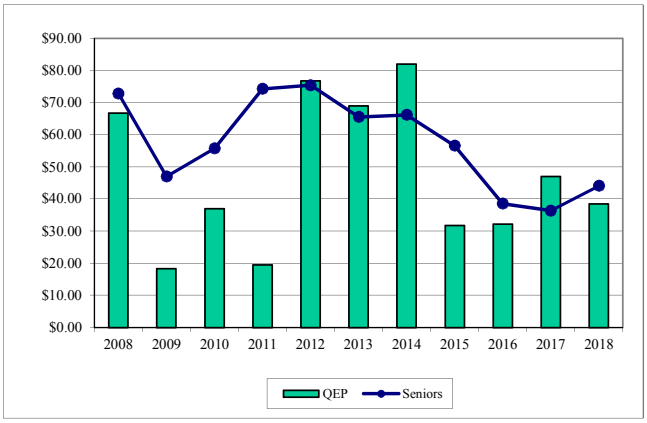
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



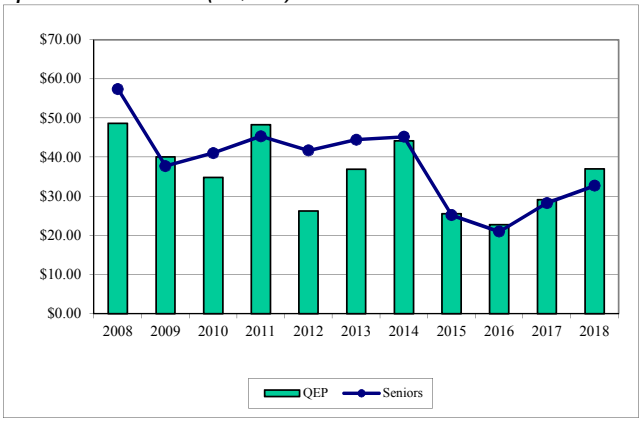
Source: BMO Capital Markets, Company Reports

QEP Resources (QEP - NYSE, Restricted)

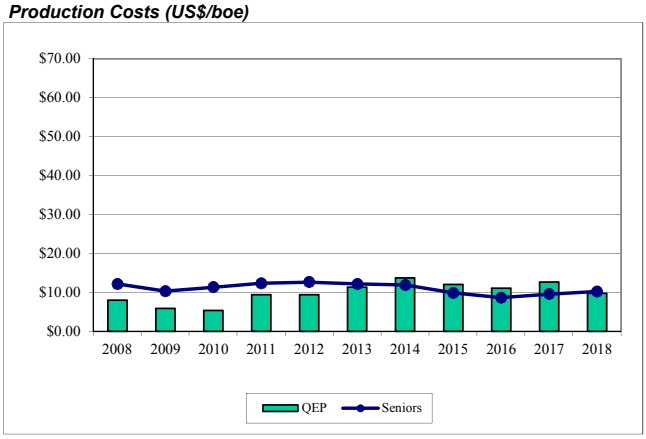
US$/boe, net

North America

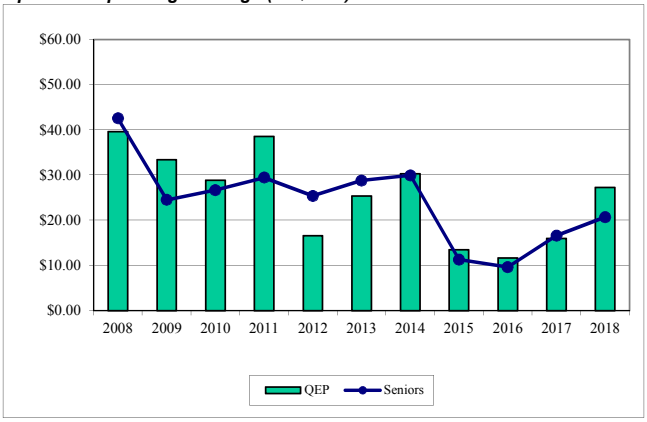
Upstream Net Revenue (US$/boe)



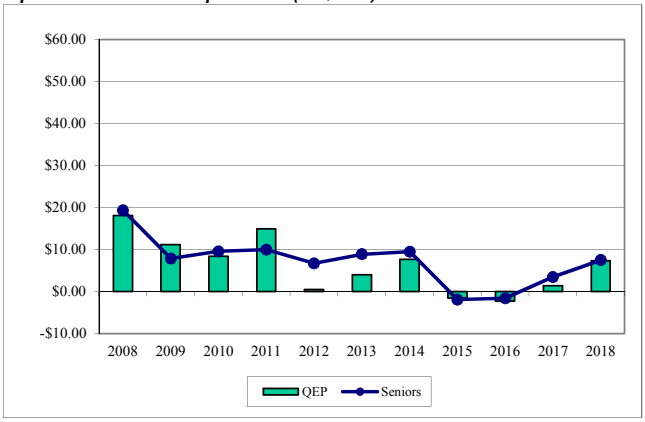
Production Costs (US$/boe)



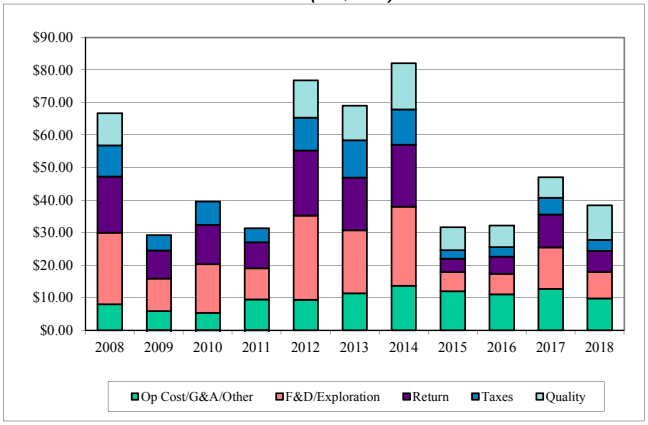
Upstream Operating Earnings (US$/boe)



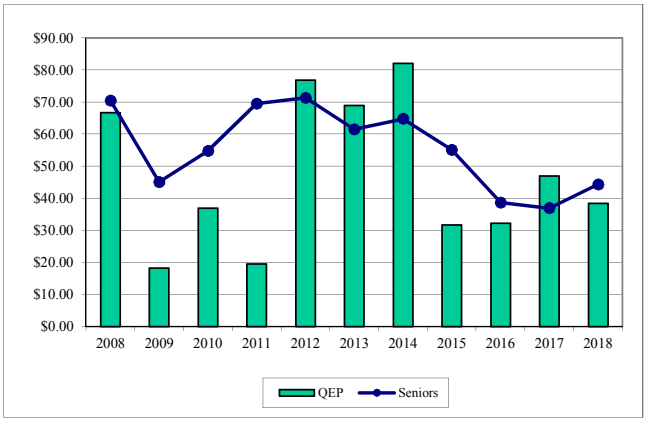
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

QEP Resources (QEP - NYSE, Restricted)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,392	2,199	1,331	2,213	1,393	1,901	2,375	1,390	1,271	1,548	1,920
Midstream / Downstream Revenue	-	-	-	-	-	-					
Other	(308)	-	916	946	956	1,035	1,040	628	106	75	12
Total Revenue and Other Income	1,084	2,199	2,246	3,159	2,350	2,936	3,414	2,019	1,377	1,623	1,933
Crude Oil and Product Purchases	-	411	-	1,077	656	766	1,031	627	106	64	51
Production and Transportation Expenses	241	306	291	460	513	576	730	654	614	654	512
Marketing Expenses	-	-	589	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	25	23	11	11	12	10	3	2	22	0
General and Administrative	17	109	107	123	267	191	204	181	198	154	222
Depreciation, Depletion and Amortization	185	618	643	765	905	1,016	995	881	871	755	857
Interest, net	21	63	82	86	116	158	156	143	143	138	149
Other	(33)	207	58	212	(316)	(75)	930	(226)	1,397	(121)	1,471
Earnings Before Income Tax	654	460	453	425	199	291	(642)	(243)	(1,953)	(43)	(1,329)
Current Income Taxes	5	418	(21)	(2)	34	54	(340)	(119)	(57)	3	(70)
Future Income Taxes	235	(254)	188	157	32	66	107	25	(651)	(315)	(248)
Total Income Taxes	241	164	167	154	67	120	(233)	(94)	(708)	(312)	(317)
Minority Interest	-	(3)	(3)	(3)	(4)	(12)	-	-	-	-	-
Earnings From Continuing Operations	414	294	283	267	128	159	(410)	(149)	(1,245)	269	(1,012)
Discontinued Operations/Extraordinary Items	0	-	43	-	-	-	1,194	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	414	294	326	267	128	159	784	(149)	(1,245)	269	(1,012)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	414	294	326	267	128	159	784	(149)	(1,245)	269	(1,012)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	414	294	283	267	128	159	784	(149)	(1,245)	269	(1,012)
Charges and Credits Not Impacting Cash	420	1,401	878	1,141	1,070	1,175	2,100	962	1,414	540	2,170
Other	(87)	91	(96)	(90)	(32)	21	(1,955)	231	380	(204)	(228)
Cash Flow From Operations	746	1,785	1,065	1,318	1,166	1,356	929	1,044	549	605	931
Change in Working Capital / Other	94	(32)	(73)	(26)	130	(164)	614	(563)	115	(7)	(115)
Net Cash From Operating Activities	840	1,753	992	1,293	1,296	1,192	1,543	481	664	598.40	816.20
Total Capital Expenditures	(950)	(741)	(1,360)	(1,383)	(1,399)	(1,562)	(1,766)	(1,141)	(569)	(1,160)	(1,234)
Acquisitions, net	1	-	(109)	(40)	(1,396)	120	2,344	(77)	(610)	(815)	(66)
Other	34	(79)	79	-	-	-	-	-	-	807	244
Net Cash From Investing Activities	(915)	(821)	(1,391)	(1,423)	(2,795)	(1,442)	578	(1,218)	(1,179)	(1,168)	(1,056)
Net Change in Debt	280	225	140	137	1,509	(213)	(780)	(28)	(177)	161	311
Net Change in Common Stock	(279)	-	-	-	-	(9)	(106)	(3)	777	(7)	(67)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	(7)	(14)	(14)	(14)	(15)	(14)	-	-	-
Other	77	3	241	7	4	499	(90)	(3)	(17)	(28)	0
Net Cash From Financing Activities	78	228	374	130	1,499	262	(991)	(48)	583	126	245
Effect of Exchange Rate on Cash	-	-	(2)							-	(5)
Net Increase/(Decrease) in Cash	3	1,161	(26)	0	-	12	1,130	(784)	68	(444)	-
Cash and Equivalents, Beginning of Year	11	14	19	-	-	-	30	1,160	376	444	-
Cash and Equivalents, End of Year	14	1,175	(7)	0	-	12	1,160	376	444	-	-

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

QEP Resources (QEP - NYSE, Restricted)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	198	154	654	731	649	519	2,002	932	640	165.4	280.6
Net Property, Plant and Equipment	2,356	1,868	5,890	6,449	8,300	8,716	7,231	7,385	6,539	7,157	5,060
Other Assets	4	38	241	263	159	141	54	109	66	72.40	777.70
Total Assets	2,558	2,060	6,785	7,443	9,108	9,377	9,287	8,426	7,245	7,395	6,118
Total Current Liabilities	348	291	624	638	762	642	1,345	642	515	577	334
Long-term Debt	570	795	1,472	1,679	3,207	2,998	2,218	2,042	2,021	2,161	2,507
Deferred Income Taxes	504	239	1,378	1,485	1,494	1,561	1,363	1,480	826	518	269
Other Liabilities and Deferred Credits	46	86	248	289	333	300	286	314	381	341	256
Total Liabilities	1,467	1,412	3,722	4,091	5,795	5,500	5,212	4,478	3,743	3,597	3,367
Minority Interests	-		53	51	48	500	-	-	-	-	-
Common Shares	301	367	2	2	2	2	2	2	2	2	2
Contributed Surplus (Paid-in Capital)	-	-	394	431	462	498	535	555	1,367	1,398	1,432
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	774	281	2,420	2,674	2,773	2,918	3,588	3,418	2,173	2,443	1,377
Other / Comprehensive Income (Loss)	16	-	194	195	29	(41)	(50)	(27)	(40)	(45.30)	(59.90)
Total Shareholders' Equity	1,091	648	3,010	3,302	3,266	3,377	4,075	3,948	3,503	3,798	2,751
Total Liabilities and Shareholders' Equity	2,558	2,060	6,785	7,443	9,109	9,377	9,287	8,426	7,245	7,395	6,118
Return on Capital Employed (ROCE)	**28.3%**	**19.7%**	**12.5%**	**6.9%**	**3.6%**	**3.9%**	**14.6%**	**-1.1%**	**-20.8%**	**6.1%**	**-15.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	1,392	1,267	1,331	2,213	1,393	1,901	2,375	1,390	1,271	1,548	1,920	4,739	8,504
Production Costs	229	186	205	433	501	583	736	654	617	675	507	1,799	3,189
Exploration	29	25	23	11	11	12	10	3	2	22	0	24	37
DD&A	331	513	593	707	838	954	984	871	852	735	836	2,424	4,279
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	803	544	510	1,062	43	352	645	-137	-200	116	576	492	1,000
Income Taxes	285	190	189	378	14	145	233	-53	-72	39	196	163	343
Results Of Operations	518	353	321	684	29	207	411	-84	-127	76	380	329	656

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,392	1,267	1,331	2,213	1,393	1,901	2,375	1,390	1,271	1,548	1,920	4,739	8,504
Production Costs	229	186	205	433	501	583	736	654	617	675	507	1,799	3,189
Exploration	29	25	23	11	11	12	10	3	2	22	0	24	37
DD&A	331	513	593	707	838	954	984	871	852	735	836	2,424	4,279
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	803	544	510	1,062	43	352	645	-137	-200	116	576	492	1,000
Income Taxes	285	190	189	378	14	145	233	-53	-72	39	196	163	343
Results Of Operations	518	353	321	684	29	207	411	-84	-127	76	380	329	656

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0
Production Costs	0	0	0	0	0	0	0	0	0	0	0	0	0
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	0	0	0	0	0	0	0	0	0	0	0	0	0
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	0	0	0	0	0	0	0	0	0	0	0	0	0
Income Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Results Of Operations	0	0	0	0	0	0	0	0	0	0	0	0	0

Source: BMO Capital Markets, Company Reports

QEP Resources (QEP - NYSE, Restricted)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$48.65	$40.08	$34.87	$48.26	$26.22	$36.93	$44.15	$25.52	$22.78	$29.13	$37.02	$29.47	$31.61
Production Costs	$8.02	$5.88	$5.37	$9.45	$9.43	$11.33	$13.68	$12.01	$11.05	$12.71	$9.78	$11.19	$11.85
Exploration	$1.02	$0.79	$0.60	$0.23	$0.21	$0.23	$0.18	$0.05	$0.03	$0.41	$0.01	$0.15	$0.14
DD&A	$11.56	$16.22	$15.52	$15.42	$15.77	$18.53	$18.30	$15.98	$15.27	$13.83	$16.13	$15.07	$15.90
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$28.04	$17.20	$13.37	$23.16	$0.81	$6.83	$11.99	-$2.52	-$3.58	$2.17	$11.11	$3.06	$3.72
Income Taxes	$9.96	$6.02	$4.95	$8.25	$0.27	$2.81	$4.34	-$0.97	-$1.30	$0.74	$3.78	$1.01	$1.28
Results Of Operations	$18.09	$11.18	$8.42	$14.92	$0.54	$4.02	$7.65	-$1.55	-$2.28	$1.44	$7.33	$2.05	$2.44

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$48.65	$40.08	$34.87	$48.26	$26.22	$36.93	$44.15	$25.52	$22.78	$29.13	$37.02	$29.47	$31.61
Production Costs	$8.02	$5.88	$5.37	$9.45	$9.43	$11.33	$13.68	$12.01	$11.05	$12.71	$9.78	$11.19	$11.85
Exploration	$1.02	$0.79	$0.60	$0.23	$0.21	$0.23	$0.18	$0.05	$0.03	$0.41	$0.01	$0.15	$0.14
DD&A	$11.56	$16.22	$15.52	$15.42	$15.77	$18.53	$18.30	$15.98	$15.27	$13.83	$16.13	$15.07	$15.90
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$28.04	$17.20	$13.37	$23.16	$0.81	$6.83	$11.99	-$2.52	-$3.58	$2.17	$11.11	$3.06	$3.72
Income Taxes	$9.96	$6.02	$4.95	$8.25	$0.27	$2.81	$4.34	-$0.97	-$1.30	$0.74	$3.78	$1.01	$1.28
Results Of Operations	$18.09	$11.18	$8.42	$14.92	$0.54	$4.02	$7.65	-$1.55	-$2.28	$1.44	$7.33	$2.05	$2.44

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

QEP Resources (QEP - NYSE, Restricted)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	416.2	462.2	558.4	647.7	683.0	599.7	491.2	496.2	484.9	462.7	382.5	443.4	463.5
Liquids Production (b/d)	9,041	9,589	11,507	17,690	31,781	41,096	65,479	66,575	72,055	68,493	78,356	72,968	70,192
Total Production (boe/d)	78,402	86,621	104,566	125,635	145,616	141,050	147,352	149,269	152,877	145,616	142,100	146,865	147,443
% Gas Production	88%	89%	89%	86%	78%	71%	56%	55%	53%	53%	45%	50%	52%
% Oil Production	12%	11%	11%	14%	22%	29%	44%	45%	47%	47%	55%	50%	48%
Proven Reserves:													
Gas Reserves (bcf)	2,028.5	2,525.0	2,612.9	2,749.4	2,622.4	2,554.9	2,317.2	2,108.9	2,553.8	1,793.6	1,487.6	1,945.0	2,052.3
Oil Reserves (mmbbls)	31.6	37.0	69.6	144.0	218.8	251.1	269.0	251.8	305.7	385.6	410.2	367.2	324.5
Total Proven Reserves (mmboe)	369.7	457.9	505.1	602.3	655.9	677.0	655.3	603.3	731.4	684.6	658.2	691.4	666.6
% Gas Reserves	91%	92%	86%	76%	67%	63%	59%	58%	58%	44%	38%	47%	51%
% Oil Reserves	9%	8%	14%	24%	33%	37%	41%	42%	42%	56%	62%	53%	49%
Proven Reserve Life Index	12.9	14.5	13.2	13.1	12.3	13.1	12.2	11.1	13.1	12.9	12.7	12.9	12.4
Proven Reserve Additions:													
Gas Additions (bcf)	511.9	665.2	291.7	372.9	122.3	151.4	-58.4	-27.2	621.9	-591.3	-166.4	(135.8)	(221.4)
Oil Additions (mmbbls)	1.7	8.9	36.8	80.9	86.4	47.3	41.8	7.1	80.2	104.9	53.2	238.3	287.2
Total Additions (mmboe)	87.0	119.8	85.4	143.0	106.8	72.5	32.1	2.6	183.9	6.4	25.5	215.7	250.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	39.9	169.1	73.6	146.9	95.4	130.6	49.0	185.4	42.7	86.5	76.3	205.5	439.8
Acquisitions	48.7	0.4	0.0	0.3	52.3	2.3	60.1	3.1	83.3	76.2	10.8	170.3	233.6
Dispositions	(3.1)	0.0	(1.3)	(0.3)	-	(5.6)	(78.9)	(6.3)	(0.9)	(159.0)	(122.8)	(282.7)	(368.0)
Revisions of Estimates	1.5	(49.8)	13.1	-3.9	-40.9	-54.8	1.9	-179.6	58.8	2.7	61.1	122.6	(55.1)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	45.8%	141.2%	86.2%	102.7%	89.3%	180.1%	152.7%	7221.4%	23.2%	1361.9%	299.7%	95.3%	175.7%
Acquisitions	56.0%	0.3%	0.0%	0.2%	49.0%	3.1%	187.4%	122.1%	45.3%	1200.3%	42.5%	79.0%	93.3%
Dispositions	-3.5%	0.0%	-1.6%	-0.2%	0.0%	-7.7%	-246.0%	-246.1%	-0.5%	-2504.5%	-482.2%	-131.1%	-147.0%
Revisions of Estimates	1.8%	-41.5%	15.4%	-2.7%	-38.3%	-75.5%	6.0%	-6997.4%	32.0%	42.3%	240.1%	56.9%	-22.0%
Additions as % of Production:													
Gas	337.0%	394.3%	143.1%	157.7%	49.1%	69.2%	-32.6%	-15.0%	351.4%	-350.1%	-119.2%	-28.0%	-26.2%
Oil	51.5%	254.3%	876.2%	1252.7%	744.8%	315.3%	174.9%	29.2%	304.9%	419.6%	186.0%	298.2%	224.2%
Total	304.1%	378.8%	223.8%	311.9%	200.9%	140.9%	59.6%	4.7%	329.5%	11.9%	49.1%	134.1%	93.0%
Additions as % of Reserves:													
Gas	25.2%	26.3%	11.2%	13.6%	4.7%	5.9%	-2.5%	-1.3%	24.4%	-33.0%	-11.2%	-7.0%	-10.8%
Oil	5.4%	24.0%	52.9%	56.1%	39.5%	18.8%	15.5%	2.8%	26.2%	27.2%	13.0%	64.9%	88.5%
Total	23.5%	26.2%	16.9%	23.7%	16.3%	10.7%	4.9%	0.4%	25.1%	0.9%	3.9%	31.2%	37.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$60	$93	$146	$37	$14	$15	$24	$9	$13	$33	$0	$46	$79
Development	$1,060	$794	$989	$1,268	$1,310	$1,441	$1,695	$1,010	$509	$1,189	$1,133	$2,832	$5,537
Acquisitions	$770	$221	$109	$48	$1,407	$41	$962	$89	$640	$815	$66	$1,521	$2,572
Dispositions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	na	na
Total Expenditures	$1,890	$1,109	$1,245	$1,352	$2,731	$1,496	$2,680	$1,108	$1,163	$2,037	$1,199	$4,399	$8,188
Expenditures as % of Total:													
Exploration	3.2%	8.4%	11.8%	2.7%	0.5%	1.0%	0.9%	0.8%	1.2%	1.6%	0.0%	1.1%	1.0%
Development	56.1%	71.6%	79.5%	93.7%	48.0%	96.3%	63.2%	91.1%	43.8%	58.4%	94.5%	64.4%	67.6%
Acquisitions	40.7%	20.0%	8.8%	3.6%	51.5%	2.7%	35.9%	8.1%	55.1%	40.0%	5.5%	34.6%	31.4%
Cashflow (US$million)	$746.4	$1,785.0	$1,065.1	$1,318.1	$1,166.3	$1,355.8	$929.0	$1,044.0	$549.1	$605.1	$931.0	$2,085.2	$4,058.2
Cashflow (US$/boe)	$26.08	$56.46	$27.91	$28.74	$21.94	$26.33	$17.27	$19.16	$9.84	$11.38	$17.95	$12.97	$15.08
Recycle Ratio	1.2x	6.1x	1.9x	3.0x	0.9x	1.4x	0.7x	0.2x	1.6x	0.9x	2.2x	1.5x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$27.05	$7.43	$13.09	$9.12	$24.30	$19.18	$33.78	$177.22	$5.15	$13.70	$8.25	$8.77	$14.60
Acquisition Costs	$15.81	$577.57	nm	$139.15	$26.91	$18.04	$16.01	$28.53	$7.69	$10.70	$6.07	$8.93	$11.01
All Sources (incl. revisions)	$20.98	$9.26	$14.35	$9.43	$25.58	$19.15	$24.16	$124.77	$6.29	$12.32	$8.09	$8.83	$13.24
Exploration & Development (excl. revisions)	$28.09	$5.25	$15.42	$8.88	$13.88	$11.14	$35.10	$5.50	$12.25	$14.13	$14.85	$14.01	$12.77
Acquisition Costs	$15.81	$577.57	nm	$139.15	$26.91	$18.04	$16.01	$28.53	$7.69	$10.70	$6.07	$8.93	$11.01
All Sources (excl. revisions)	$21.34	$6.54	$16.90	$9.18	$18.49	$11.26	$24.58	$5.88	$9.23	$12.52	$13.76	$11.71	$12.16
Geographically Segmented Costs													
North America	$20.98	$9.26	$14.35	$9.43	$25.58	$19.15	$24.16	$124.77	$6.29	$12.32	$8.09	$8.84	$15.18

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

QEP Resources (QEP - NYSE, Restricted)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	8.02	5.88	5.37	9.45	9.43	11.33	13.68	12.01	11.05	12.71	9.78	11.19	11.85
Exploration Expense	1.02	0.79	0.60	0.23	0.21	0.23	0.18	0.05	0.03	0.41	0.01	0.15	0.14
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	20.98	9.26	14.35	9.43	25.58	19.15	24.16	5.88	6.29	12.32	8.09	8.83	11.35
Return on Capital	17.29	8.65	12.12	7.92	20.06	16.29	19.02	4.11	5.27	10.12	6.54	7.25	8.85
Income Taxes	9.52	4.66	7.12	4.38	10.11	11.39	10.80	2.57	3.00	5.21	3.37	3.59	4.63
Breakeven Oil Price	56.83	29.24	39.57	31.41	65.39	58.38	67.84	24.62	25.64	40.78	27.78	31.00	36.82
Quality Differential	9.91	(10.92)	(2.58)	(11.89)	11.43	10.62	14.23	7.10	6.59	6.25	10.68	7.84	8.97
Required Brent Price	66.73	18.31	36.99	19.52	76.82	69.00	82.07	31.72	32.23	47.02	38.46	38.84	45.79

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	8.02	5.88	5.37	9.45	9.43	11.33	13.68	12.01	11.05	12.71	9.78	11.19	11.85
Exploration Expense	1.02	0.79	0.60	0.23	0.21	0.23	0.18	0.05	0.03	0.41	0.01	0.15	0.14
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	20.98	9.26	14.35	9.43	25.58	19.15	24.16	5.88	6.29	12.32	8.09	8.83	11.35
Return on Capital	17.29	8.65	12.12	7.92	20.06	16.29	19.02	4.11	5.27	10.12	6.54	7.25	8.85
Income Taxes	9.52	4.66	7.12	4.38	10.11	11.39	10.80	2.57	3.00	5.21	3.37	3.59	4.63
Breakeven Oil Price	56.83	29.24	39.57	31.41	65.39	58.38	67.84	24.62	25.64	40.78	27.78	31.00	36.82
Quality Differential	9.91	(10.92)	(2.58)	(11.89)	11.43	10.62	14.23	7.10	6.59	6.25	10.68	7.84	8.97
Required Brent Price	66.73	18.31	36.99	19.52	76.82	69.00	82.07	31.72	32.23	47.02	38.46	38.84	45.79

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

QEP Resources (QEP - NYSE, Restricted)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.65	12.73	11.23	21.89	22.31	22.85	20.68	17.79	15.74	18.39	14.11	16.09	17.32
Exploration Expense	1.87	1.71	1.26	0.53	0.50	0.47	0.28	0.07	0.04	0.60	0.01	0.21	0.20
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	41.62	21.05	21.47	13.24	29.78	25.71	30.99	7.78	9.23	14.34	11.41	11.79	14.75
Return on Capital	33.30	18.82	18.85	13.02	28.38	24.30	23.16	5.29	7.31	12.79	9.95	10.07	11.76
Income Taxes	18.33	10.13	11.08	7.20	14.30	16.98	13.15	3.32	4.16	6.59	5.12	4.98	6.16
Breakeven Oil Price	**109.79**	**64.44**	**63.89**	**55.89**	**95.26**	**90.31**	**88.26**	**34.26**	**36.49**	**52.71**	**40.60**	**43.15**	**50.18**
Quality Differential	18.11	(23.66)	(5.38)	(27.55)	27.05	21.41	21.51	10.53	9.39	9.04	15.41	11.28	13.17
Required Brent Price	**127.90**	**40.78**	**58.51**	**28.34**	**122.31**	**111.72**	**109.77**	**44.78**	**45.88**	**61.75**	**56.01**	**54.43**	**63.36**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.65	12.73	11.23	21.89	22.31	22.85	20.68	17.79	15.74	18.39	14.11	16.09	17.32
Exploration Expense	1.87	1.71	1.26	0.53	0.50	0.47	0.28	0.07	0.04	0.60	0.01	0.21	0.20
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	74.97	50.96	29.72	20.97	57.46	29.33	31.39	13.15	29.65	32.36	18.94	26.58	25.10
Return on Capital	59.44	45.50	26.04	20.53	54.91	27.65	23.45	8.95	23.66	28.76	16.34	22.69	20.02
Income Taxes	32.72	24.50	15.30	11.35	27.67	19.33	13.31	5.61	13.46	14.82	8.42	11.22	10.48
Breakeven Oil Price	**183.66**	**135.41**	**83.54**	**75.27**	**162.85**	**99.62**	**89.11**	**45.57**	**82.55**	**94.93**	**57.81**	**76.80**	**73.11**
Quality Differential	18.11	(23.66)	(5.38)	(27.55)	27.05	21.41	21.51	10.53	9.39	9.04	15.41	11.28	13.17
Required Brent Price	**201.77**	**111.75**	**78.16**	**47.72**	**189.89**	**121.04**	**110.62**	**56.10**	**91.94**	**103.97**	**73.22**	**88.08**	**86.28**

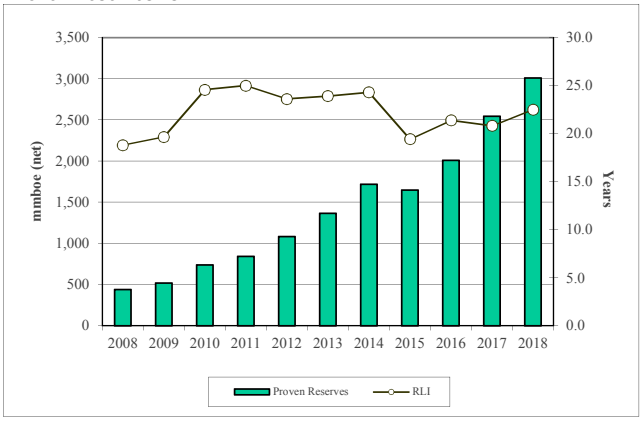
Source: BMO Capital Markets, Company Reports

Range Resources Corporation (RRC - NYSE) US$, net

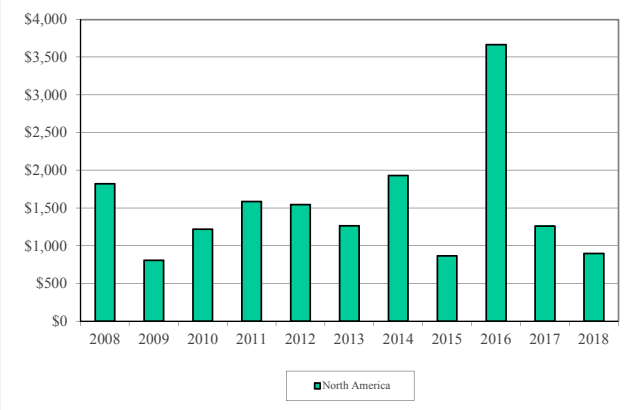
- Range reported results of operations of $3.22/boe in 2018 compared to $1.73/boe in 2017.
- The company's one-year F&D costs remained low at $1.39/boe compared to $1.89/boe in 2017. F&D costs ex-revisions came in at $1.72/boe this year. On a realized oil:gas price ratio basis, F&D costs remained stable at $2.29/boe from $2.56/boe, while the costs for PD reserves were also flat at $3.03/boe from $3.65/boe.
- Resulting from low F&D costs, Range's 2018 results imply a required Brent breakeven oil price of $41.31/boe, one of the lowest in the peer group. Its PD costs imply a breakeven of $43.48/boe.
- The company reported a loss on capital of 17.6% in 2018 versus a gain on capital of 4.6% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

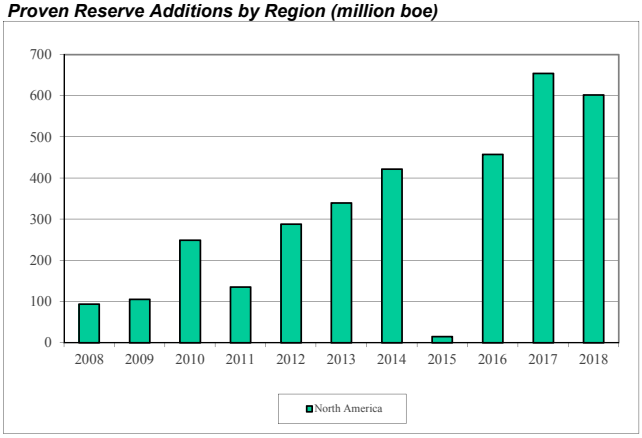
Proven Reserves vs RLI



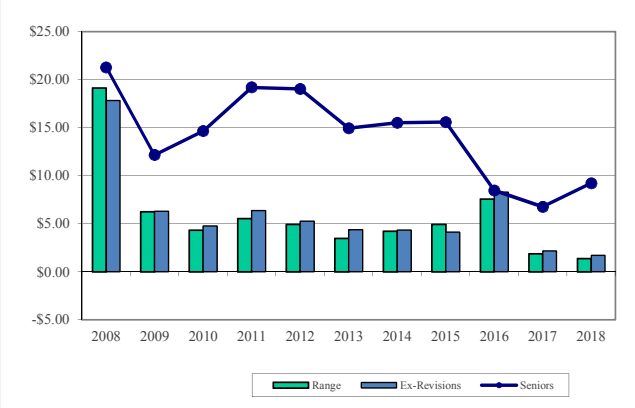
Capital Spending by Region (US$million)



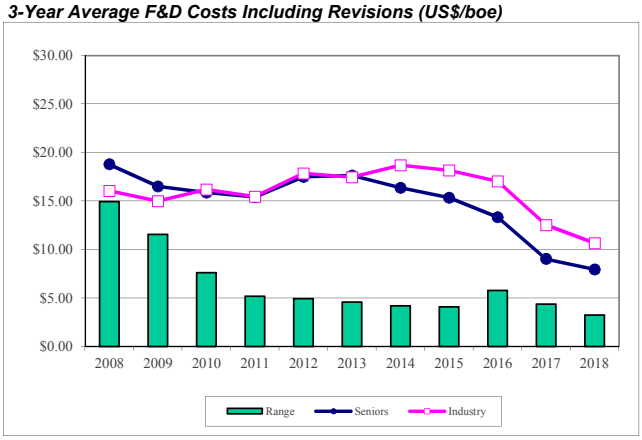
Proven Reserve Additions by Region (million boe)



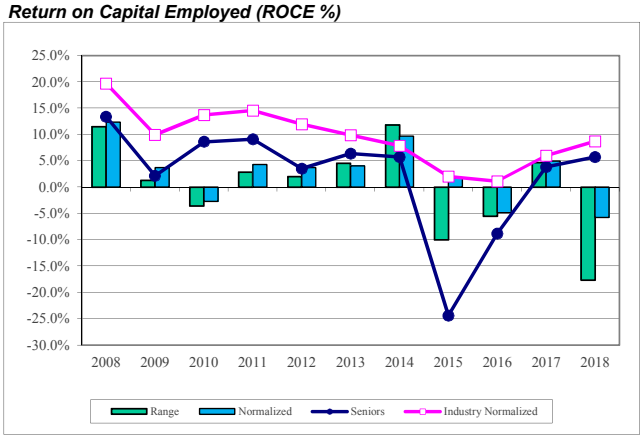
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

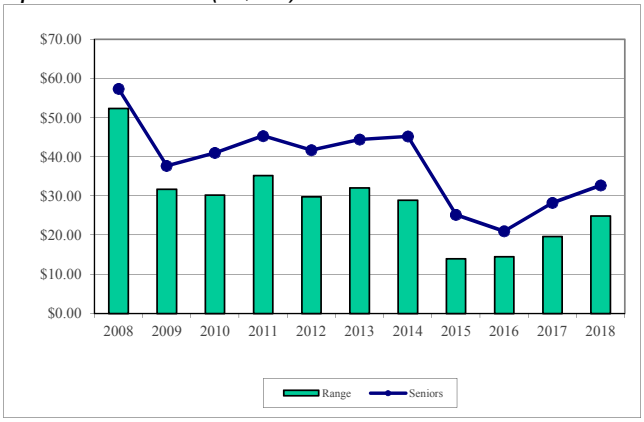
See pages F1 to F4 for analyst coverage.

Range Resources Corporation (RRC - NYSE)

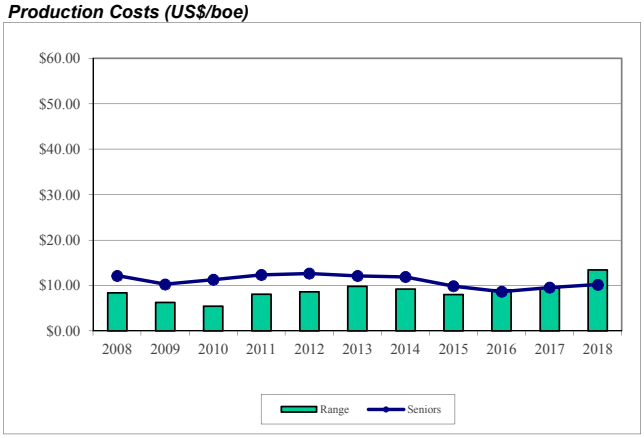
US$/boe, net

North America

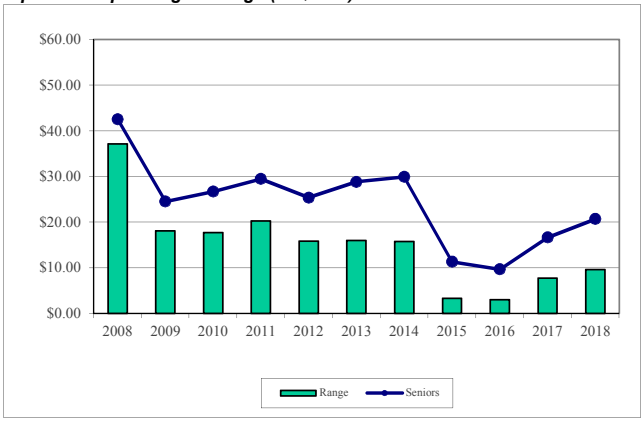
Upstream Net Revenue (US$/boe)



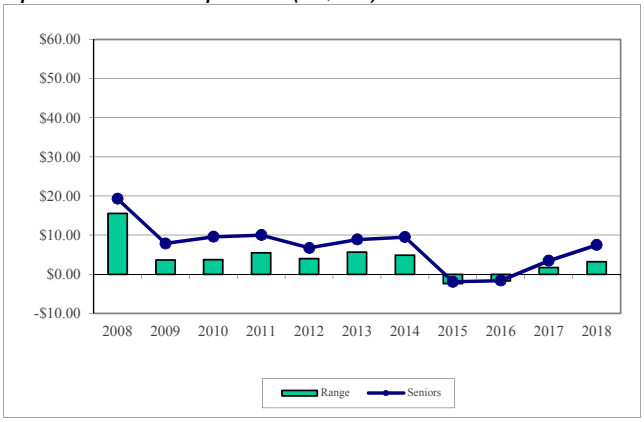
Production Costs (US$/boe)



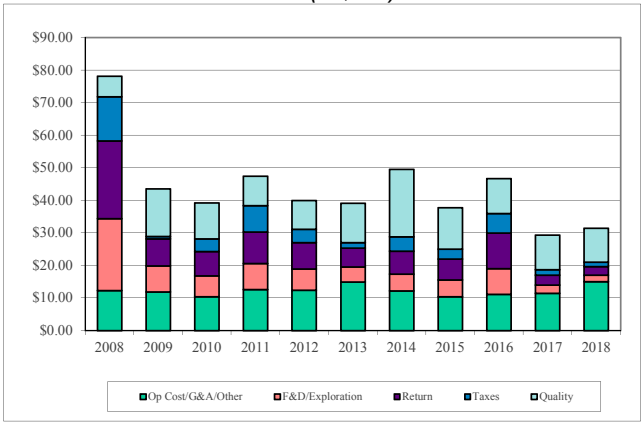
Upstream Operating Earnings (US$/boe)



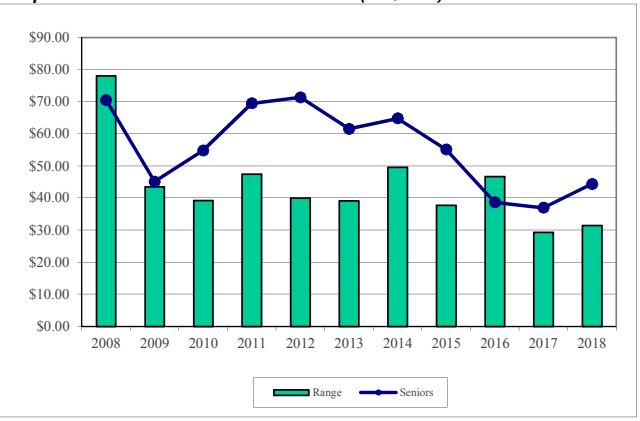
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Range Resources Corporation (RRC - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,231	840	911	1,173	1,352	1,716	1,912	1,090	1,197	2,176	2,851
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	
Other	92	67	128	45	106	147	800	508	(97)	435	432
Total Revenue and Other Income	1,323	907	1,039	1,219	1,458	1,863	2,712	1,598	1,100	2,611	3,283
Crude Oil and Product Purchases	-	-	-	-	-	-					496
Production and Transportation Expenses	198	166	165	261	375	430	520	567	688	938	1,303
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	68	47	61	81	70	64	64	21	32	54	34
General and Administrative	92	117	141	151	174	291	213	194	185	233	210
Depreciation, Depletion and Amortization	300	374	364	341	445	492	551	581	524	625	635
Interest, net	100	117	131	125	169	177	169	166	168	196	210
Other	23	145	543	180	200	259	164	1,120	305	483	2,170
Earnings Before Income Tax	543	(59)	(366)	78	25	150	1,031	(1,052)	(802)	82	(1,777)
Current Income Taxes	4	(1)	(1)	1	(2)	(0)	0	0	0	0	-
Future Income Taxes	192	(4)	(126)	35	14	34	397	(339)	(281)	(251)	(30)
Total Income Taxes	196	(5)	(127)	36	12	34	397	(339)	(281)	(251)	(30)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	346	(54)	(239)	43	13	116	634	(714)	(521)	333	(1,746)
Discontinued Operations	-	-	-	15	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	346	(54)	(239)	58	13	116	634	(714)	(521)	333	(1,746)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	346	(54)	(239)	58	13	116	634	(714)	(521)	333	(1,746)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	346.158	(54)	(239)	43	13	116	634	(714)	(521)	333	(1,746)
Charges and Credits Not Impacting Cash	505.370	486	781	498	621	592	1,039	1,558	316	717	2,784
Other	(46.975)	204	(28)	110	39	79	(688)	(144)	698	(186)	(38)
Cash Flow From Operations	804.553	636	514	651	673	786	985	701	493	863	999
Change in Working Capital / Other	20.214	(45)	(1)	(20)	(24)	(43)	(31)	(17)	(106)	(47)	(8)
Net Cash From Operating Activities	824.767	591.675	513	632	648	744	954	684	387	816	991
Total Capital Expenditures	(918)	(574)	(832)	(1,211)	(1,503)	(1,165)	(1,212)	(1,035)	(469)	(1,149)	(961)
Acquisitions, net	(767)	95	31	(173)	(23)	187	(31)	816	157	177	262
Other	(47)	6	2	836	(2)	(5)	(2)	0	3	(168)	3
Net Cash From Investing Activities	(1,732)	(473.807)	(799)	(548)	(1,529)	(983)	(1,245)	(219)	(309)	(1,139)	(695)
Net Change in Debt	635	(84)	302	(74)	880	239	(89)	(395)	(83)	345	(282)
Net Change in Common Stock	296	20	11	14	29	21	413	8	13	4	10
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(25)	(25)	(26)	(26)	(26)	(26)	(27)	(27)	(17)	(20)	(20)
Other	(3)	(29)	-	-	(1)	6	(5)	(51)	8	(7)	(3)
Net Cash From Financing Activities	904	(118)	288	(86)	882	240	291	(465)	(78)	323	(295)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(3.265)	0.014	2	(3)	1	0	0	0	(0)	0	0
Cash and Equivalents, Beginning of Year	4.017	0.752	1	3	0	1	0	0	0	0	0
Cash and Equivalents, End of Year	0.752	1	3	0	1	1	0	0	0	0	1

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Range Resources Corporation (RRC - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	404	175	262	315	328	248	570	439	282	429	602
Net Property, Plant and Equipment	4,939	4,991	5,016	5,303	6,138	6,791	8,015	6,381	9,369	9,581	9,033
Other Assets	219	230	221	228	263	260	161	80	1,631	1,718	73
Total Assets	5,563	5,396	5,499	5,845	6,729	7,299	8,747	6,900	11,282	11,729	9,708
Total Current Liabilities	354	314	431	512	455	496	755	352	703	755	755
Long-term Debt	1,791	1,708	1,961	1,975	2,878	3,141	3,073	2,651	3,774	4,109	3,837
Deferred Income Taxes	783	777	672	710	698	772	997	778	943	693	667
Other Liabilities and Deferred Credits	177	218	212	256	340	477	464	359	454	397	390
Total Liabilities	3,105	3,017	3,275	3,453	4,371	4,885	5,289	4,140	5,874	5,955	5,649
Minority Interests										-	-
Common Shares	2	2	2	2	2	2	2	2	2	2	2
Contributed Surplus (Paid-in Capital)	1,687	1,764	1,813	1,867	1,916	1,960	2,400	2,443	5,524	5,578	5,628
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	692	607	342	374	361	451	1,058	318	(117)	196	(1,570)
Other / Comprehensive Income (Loss)	78	6	67	150	79	3	(3)	(2)	(1)	(2)	(1)
Total Shareholders' Equity	2,458	2,379	2,224	2,392	2,357	2,414	3,457	2,760	5,408	5,774	4,059
Total Liabilities and Shareholders' Equity	5,563	5,396	5,499	5,845	6,729	7,299	8,747	6,900	11,282	11,729	9,708
Return on Capital Employed (ROCE)	**11.5%**	**1.3%**	**-3.6%**	**2.8%**	**2.0%**	**4.5%**	**11.8%**	**-10.0%**	**-5.5%**	**4.6%**	**-17.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	1,231	840	911	1,188	1,367	1,832	2,043	1,182	1,361	2,398	3,334	7,093	10,317
Production Costs	198	166	165	273	396	561	650	683	857	1,159	1,800	3,815	5,148
Exploration	68	47	61	81	70	64	64	21	32	54	34	120	205
DD&A	300	374	364	341	445	492	551	581	524	625	635	1,785	2,917
G&A/Other	92	147	149	151	174	291	213	194	185	233	210	628	1,035
Pre-tax Results Of Operations	574	106	172	341	282	423	564	-298	-236	327	655	745	1,012
Income Taxes	208	9	59	155	96	96	217	-96	-83	115	224	256	377
Results Of Operations	366	97	112	186	187	327	347	-202	-154	212	431	489	635

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,231	840	911	1,188	1,367	1,832	2,043	1,182	1,361	2,398	3,334	7,093	10,317
Production Costs	198	166	165	273	396	561	650	683	857	1,159	1,800	3,815	5,148
Exploration	68	47	61	81	70	64	64	21	32	54	34	120	205
DD&A	300	374	364	341	445	492	551	581	524	625	635	1,785	2,917
G&A/Other	92	147	149	151	174	291	213	194	185	233	210	628	1,035
Pre-tax Results Of Operations	574	106	172	341	282	423	564	-298	-236	327	655	745	1,012
Income Taxes	208	9	59	155	96	96	217	-96	-83	115	224	256	377
Results Of Operations	366	97	112	186	187	327	347	-202	-154	212	431	489	635

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Range Resources Corporation (RRC - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$52.33	$31.69	$30.22	$35.25	$29.78	$32.05	$28.89	$13.92	$14.47	$19.62	$24.90	$20.25	$20.40
Production Costs	$8.40	$6.26	$5.48	$8.11	$8.62	$9.82	$9.20	$8.04	$9.11	$9.48	$13.44	$10.89	$10.18
Exploration	$2.88	$1.77	$2.03	$2.41	$1.52	$1.13	$0.90	$0.25	$0.34	$0.44	$0.25	$0.34	$0.41
DD&A	$12.75	$14.12	$12.06	$10.12	$9.70	$8.61	$7.79	$6.85	$5.57	$5.11	$4.75	$5.10	$5.77
G&A/Other	$3.92	$5.56	$4.95	$4.49	$3.79	$5.09	$3.02	$2.29	$1.96	$1.91	$1.57	$1.79	$2.05
Pre-tax Results Of Operations	$24.39	$3.99	$5.70	$10.12	$6.15	$7.40	$7.98	-$3.51	-$2.51	$2.68	$4.89	$2.13	$2.00
Income Taxes	$8.83	$0.33	$1.97	$4.60	$2.09	$1.67	$3.07	-$1.13	-$0.88	$0.94	$1.67	$0.73	$0.75
Results Of Operations	$15.56	$3.66	$3.73	$5.52	$4.07	$5.72	$4.91	-$2.38	-$1.63	$1.73	$3.22	$1.40	$1.26

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$52.33	$31.69	$30.22	$35.25	$29.78	$32.05	$28.89	$13.92	$14.47	$19.62	$24.90	$20.25	$20.40
Production Costs	$8.40	$6.26	$5.48	$8.11	$8.62	$9.82	$9.20	$8.04	$9.11	$9.48	$13.44	$10.89	$10.18
Exploration	$2.88	$1.77	$2.03	$2.41	$1.52	$1.13	$0.90	$0.25	$0.34	$0.44	$0.25	$0.34	$0.41
DD&A	$12.75	$14.12	$12.06	$10.12	$9.70	$8.61	$7.79	$6.85	$5.57	$5.11	$4.75	$5.10	$5.77
G&A/Other	$3.92	$5.56	$4.95	$4.49	$3.79	$5.09	$3.02	$2.29	$1.96	$1.91	$1.57	$1.79	$2.05
Pre-tax Results Of Operations	$24.39	$3.99	$5.70	$10.12	$6.15	$7.40	$7.98	-$3.51	-$2.51	$2.68	$4.89	$2.13	$2.00
Income Taxes	$8.83	$0.33	$1.97	$4.60	$2.09	$1.67	$3.07	-$1.13	-$0.88	$0.94	$1.67	$0.73	$0.75
Results Of Operations	$15.56	$3.66	$3.73	$5.52	$4.07	$5.72	$4.91	-$2.38	-$1.63	$1.73	$3.22	$1.40	$1.26

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Range Resources Corporation (RRC - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	313.2	357.9	389.1	430.1	593.3	724.7	786.1	993.7	1,029.6	1,344.0	1,501.6	1,291.7	1,131.0
Liquids Production (b/d)	12,249	12,997	17,696	20,660	26,904	35,838	62,715	66,959	86,123	110,879	116,584	104,529	88,652
Total Production (boe/d)	64,452	72,654	82,552	92,350	125,788	156,627	193,732	232,569	257,726	334,876	366,851	319,818	277,151
% Gas Production	81%	82%	79%	78%	79%	77%	68%	71%	67%	67%	68%	67%	68%
% Oil Production	19%	18%	21%	22%	21%	23%	32%	29%	33%	33%	32%	33%	32%
Proven Reserves:													
Gas Reserves (bcf)	2,213.5	2,614.7	3,566.5	4,009.7	4,792.7	5,665.6	6,922.8	6,277.7	7,870.4	10,263.6	12,027.7	10,053.9	8,672.5
Oil Reserves (mmbbls)	73.3	85.7	146.0	174.0	285.5	422.8	564.6	602.3	700.3	833.1	1,007.4	847.0	741.6
Total Proven Reserves (mmboe)	442.3	521.5	740.4	842.3	1,084.3	1,367.0	1,718.4	1,648.6	2,012.1	2,543.7	3,012.1	2,522.6	2,187.0
% Gas Reserves	83%	84%	80%	79%	74%	69%	67%	63%	65%	67%	67%	66%	66%
% Oil Reserves	17%	16%	20%	21%	26%	31%	33%	37%	35%	33%	33%	34%	34%
Proven Reserve Life Index	18.8	19.7	24.6	25.0	23.6	23.9	24.3	19.4	21.4	20.8	22.5	21.6	21.7
Proven Reserve Additions:													
Gas Additions (bcf)	495.1	531.8	1,093.8	600.2	999.6	1,137.5	1,544.1	-282.5	1,968.5	2,883.8	2,312.1	7,164.5	8,426.1
Oil Additions (mmbbls)	11.1	17.1	66.8	35.6	121.3	150.4	164.7	62.2	129.4	173.3	216.9	519.6	746.5
Total Additions (mmboe)	93.7	105.7	249.1	135.7	287.8	340.0	422.0	15.1	457.5	653.9	602.2	1,713.7	2,150.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	86.4	128.3	235.1	248.9	294.5	288.8	399.8	210.9	232.4	581.3	524.0	1,337.6	1,948.3
Acquisitions	15.9	0.0	20.8	0.0	0.0	0.0	43.8	0.0	210.0	1.7	0.0	211.7	255.5
Dispositions	(1.6)	(23.3)	(31.6)	(150.7)	(24.9)	(23.7)	(36.7)	(160.6)	(27.4)	(13.5)	(43.7)	(84.7)	(281.9)
Revisions of Estimates	(7.1)	0.6	24.8	37.4	18.2	74.8	15.1	-35.2	42.6	84.5	122.0	249.1	229.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	92.2%	121.4%	94.4%	183.5%	102.3%	85.0%	94.7%	1394.1%	50.8%	88.9%	87.0%	78.1%	90.6%
Acquisitions	17.0%	0.0%	8.4%	0.0%	0.0%	0.0%	10.4%	0.0%	45.9%	0.3%	0.0%	12.4%	11.9%
Dispositions	-1.7%	-22.0%	-12.7%	-111.1%	-8.6%	-7.0%	-8.7%	-1061.4%	-6.0%	-2.1%	-7.3%	-4.9%	-13.1%
Revisions of Estimates	-7.5%	0.6%	9.9%	27.6%	6.3%	22.0%	3.6%	-232.6%	9.3%	12.9%	20.3%	14.5%	10.6%
Additions as % of Production:													
Gas	433.0%	407.1%	770.1%	382.3%	461.6%	430.0%	538.2%	-77.9%	523.8%	587.9%	421.9%	506.5%	408.2%
Oil	249.3%	360.0%	1033.4%	472.4%	1234.8%	1149.5%	719.4%	254.5%	411.7%	428.1%	509.7%	453.9%	461.4%
Total	398.1%	398.6%	826.6%	402.4%	626.9%	594.6%	596.8%	17.8%	486.4%	535.0%	449.8%	489.3%	425.2%
Additions as % of Reserves:													
Gas	22.4%	20.3%	30.7%	15.0%	20.9%	20.1%	22.3%	-4.5%	25.0%	28.1%	19.2%	71.3%	97.2%
Oil	15.2%	19.9%	45.7%	20.5%	42.5%	35.6%	29.2%	10.3%	18.5%	20.8%	21.5%	61.3%	100.7%
Total	21.2%	20.3%	33.6%	16.1%	26.5%	24.9%	24.6%	0.9%	22.7%	25.7%	20.0%	67.9%	98.3%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$200.8	$104.0	$111.8	$308.3	$309.8	$189.7	$180.9	$87.5	$37.7	$2.0	$1.4	$41.1	$309.5
Development	$776.3	$527.2	$804.9	$1,060.4	$1,049.1	$938.7	$1,119.9	$708.3	$497.8	$1,177.5	$834.6	$2,509.9	$4,338.0
Acquisitions	$845.5	$176.9	$301.7	$220.6	$188.8	$137.5	$630.9	$73.0	$3,131.9	$80.3	$64.1	$3,276.3	$3,980.3
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$1,822.6	$808.1	$1,218.4	$1,589.3	$1,547.8	$1,265.9	$1,931.7	$868.8	$3,667.4	$1,259.9	$900.0	$5,827.3	$8,627.8
Expenditures as % of Total:													
Exploration	11.0%	12.9%	9.2%	19.4%	20.0%	15.0%	9.4%	10.1%	1.0%	0.2%	0.2%	0.7%	3.6%
Development	42.6%	65.2%	66.1%	66.7%	67.8%	74.1%	58.0%	81.5%	13.6%	93.5%	92.7%	43.1%	50.3%
Acquisitions	46.4%	21.9%	24.8%	13.9%	12.2%	10.9%	32.7%	8.4%	85.4%	6.4%	7.1%	56.2%	46.1%
Cashflow (US$million)	$733.6	$518.3	$536.9	$608.7	$701.7	$884.0	$961.8	$400.7	$402.7	$890.5	$1,100.9	$2,394.2	$3,756.6
Cashflow (US$/boe)	$31.18	$19.54	$17.82	$18.06	$15.28	$15.46	$13.60	$4.72	$4.28	$7.29	$8.22	$6.84	$7.43
Recycle Ratio	1.6x	3.1x	4.1x	3.3x	3.1x	4.4x	3.2x	1.0x	0.6x	3.9x	5.9x	2.1x	2.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$12.31	$4.89	$3.53	$4.78	$4.35	$3.10	$3.14	$4.53	$1.95	$1.77	$1.29	$1.61	$2.13
Acquisition Costs	$53.08	na	$14.48	na	na	na	$14.40	na	$14.92	$47.66	na	na	$15.58
All Sources (incl. revisions)	$19.13	$6.27	$4.34	$5.55	$4.95	$3.48	$4.21	$4.94	$7.56	$1.89	$1.39	$3.24	$3.55
Exploration & Development (excl. revisions)	$11.31	$4.92	$3.90	$5.50	$4.61	$3.91	$3.25	$3.77	$2.30	$2.03	$1.60	$1.91	$2.39
Acquisition Costs	$53.08	na	$14.48	na	na	na	$14.40	na	$14.92	$47.66	na	na	$15.58
All Sources (excl. revisions)	$17.81	$6.30	$4.76	$6.39	$5.26	$4.38	$4.35	$4.12	$8.29	$2.16	$1.72	$3.76	$3.92
Geographically Segmented Costs													
North America	$19.13	$6.27	$4.34	$5.55	$4.95	$3.48	$4.21	$4.94	$7.56	$1.89	$1.39	$3.24	$3.55

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Range Resources Corporation (RRC - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	8.40	6.26	5.48	8.11	8.62	9.82	9.20	8.04	9.11	9.48	13.44	10.89	10.18
Exploration Expense	2.88	1.77	2.03	2.41	1.52	1.13	0.90	0.25	0.34	0.44	0.25	0.34	0.41
G&A/Other	3.92	5.56	4.95	4.49	3.79	5.09	3.02	2.29	1.96	1.91	1.57	1.79	2.05
F&D Costs	19.13	6.27	4.34	5.55	4.95	3.48	4.21	4.94	7.56	2.16	1.72	3.81	4.12
Return on Capital	23.95	8.29	7.46	9.72	8.11	5.77	7.08	6.42	11.01	3.02	2.65	5.62	6.10
Income Taxes	13.59	0.75	3.95	8.09	4.16	1.69	4.42	3.05	5.93	1.64	1.37	3.00	3.29
Breakeven Oil Price	71.88	28.89	28.21	38.37	31.15	26.98	28.83	25.00	35.91	18.66	21.01	25.45	26.14
Quality Differential	6.22	14.61	11.05	9.05	8.79	12.14	20.71	12.73	10.81	10.65	10.40	10.62	13.06
Required Brent Price	78.10	43.50	39.26	47.42	39.94	39.12	49.54	37.72	46.72	29.31	31.41	36.07	39.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	8.40	6.26	5.48	8.11	8.62	9.82	9.20	8.04	9.11	9.48	13.44	10.89	10.18
Exploration Expense	2.88	1.77	2.03	2.41	1.52	1.13	0.90	0.25	0.34	0.44	0.25	0.34	0.41
G&A/Other	3.92	5.56	4.95	4.49	3.79	5.09	3.02	2.29	1.96	1.91	1.57	1.79	2.05
F&D Costs	19.13	6.27	4.34	5.55	4.95	3.48	4.21	4.94	7.56	2.16	1.72	3.81	4.12
Return on Capital	23.95	8.29	7.46	9.72	8.11	5.77	7.08	6.42	11.01	3.02	2.65	5.62	6.10
Income Taxes	13.59	0.75	3.95	8.09	4.16	1.69	4.42	3.05	5.93	1.64	1.37	3.00	3.29
Breakeven Oil Price	71.88	28.89	28.21	38.37	31.15	26.98	28.83	25.00	35.91	18.66	21.01	25.45	26.14
Quality Differential	6.22	14.61	11.05	9.05	8.79	12.14	20.71	12.73	10.81	10.65	10.40	10.62	13.06
Required Brent Price	78.10	43.50	39.26	47.42	39.94	39.12	49.54	37.72	46.72	29.31	31.41	36.07	39.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Range Resources Corporation (RRC - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.61	11.19	8.54	14.71	18.18	17.29	11.36	8.12	10.08	10.87	17.60	12.98	11.83
Exploration Expense	4.32	3.16	3.16	4.38	3.20	1.98	1.11	0.25	0.38	0.50	0.33	0.41	0.47
G&A/Other	5.89	9.94	7.70	8.14	7.98	8.97	3.73	2.31	2.17	2.19	2.05	2.14	2.38
F&D Costs (1-Year)	29.77	10.51	6.48	10.35	8.01	5.11	5.05	4.99	8.46	2.56	2.29	4.44	4.67
Return on Capital	37.40	13.62	10.94	17.75	14.11	9.28	8.58	6.48	12.33	3.62	3.57	6.55	6.93
Income Taxes	21.22	1.23	5.79	14.78	7.24	2.72	5.36	3.08	6.64	1.97	1.85	3.49	3.73
Breakeven Oil Price	**111.21**	**49.66**	**42.61**	**70.11**	**58.73**	**45.34**	**35.19**	**25.23**	**40.05**	**21.71**	**27.70**	**30.01**	**30.01**
Quality Differential	14.38	0.06	11.99	15.09	15.72	17.78	25.43	12.85	11.96	12.21	13.62	12.60	15.21
Required Brent Price	**125.59**	**49.72**	**54.60**	**85.20**	**74.45**	**63.12**	**60.62**	**38.08**	**52.01**	**33.92**	**41.31**	**42.61**	**45.22**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.61	11.19	8.54	14.71	18.18	17.29	11.36	8.12	10.08	10.87	17.60	12.98	11.83
Exploration Expense	4.32	3.16	3.16	4.38	3.20	1.98	1.11	0.25	0.38	0.50	0.33	0.41	0.47
G&A/Other	5.89	9.94	7.70	8.14	7.98	8.97	3.73	2.31	2.17	2.19	2.05	2.14	2.38
F&D Costs (1-Year)	47.13	19.83	13.29	19.03	9.52	9.94	8.14	3.92	9.61	3.65	3.03	5.69	5.67
Return on Capital	57.67	25.48	22.19	32.41	16.97	18.31	13.61	5.05	13.33	4.91	4.51	7.95	7.95
Income Taxes	32.73	2.30	11.75	26.98	8.70	5.36	8.51	2.40	7.18	2.67	2.34	4.24	4.28
Breakeven Oil Price	**160.35**	**71.90**	**66.64**	**105.65**	**64.55**	**61.85**	**46.45**	**22.05**	**42.75**	**24.79**	**29.86**	**33.41**	**32.58**
Quality Differential	14.38	0.06	11.99	15.09	15.72	17.78	25.43	12.85	11.96	12.21	13.62	12.60	15.21
Required Brent Price	**174.73**	**71.96**	**78.63**	**120.74**	**80.27**	**79.63**	**71.88**	**34.89**	**54.71**	**37.00**	**43.48**	**46.00**	**47.79**

Source: BMO Capital Markets, Company Reports

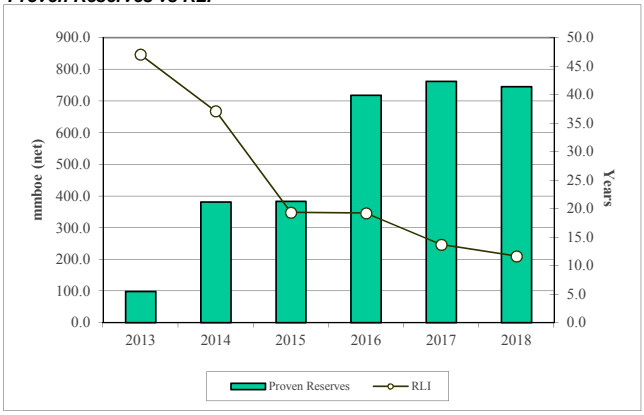
See pages F1 to F4 for analyst coverage.

Seven Generations Energy Ltd. (VII - TSX) US$, net

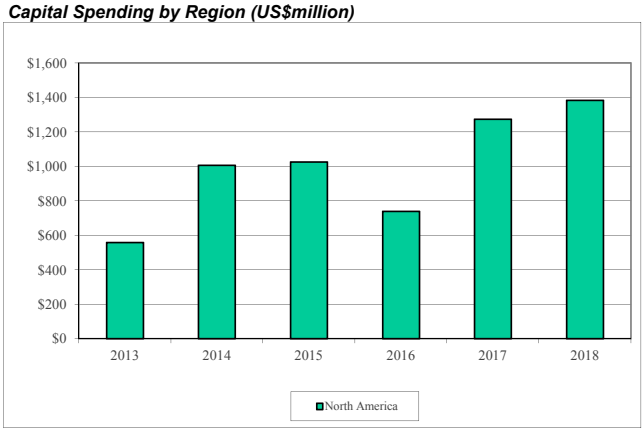
- Seven Generations reported results from operations of $10.21/boe in 2018 compared to $6.97/boe in 2017.
- One-year F&D costs in 2018 jumped to $27.07/boe versus $13.23/boe last year. On a realized oil:gas price ratio basis, F&D costs came in at $30.59/boe up from $18.61/boe in 2017, while costs for PD reserves increased to $21.20/boe from $17.58/boe.
- Seven Generations' 2018 costs imply a required Brent breakeven oil price of $90.54/boe on a realized ratio basis on total proved reserves, while its PD costs imply a breakeven oil price of $71.00/boe.
- Seven Generations reported a return on capital of 8.0% in 2018 versus 12.6% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

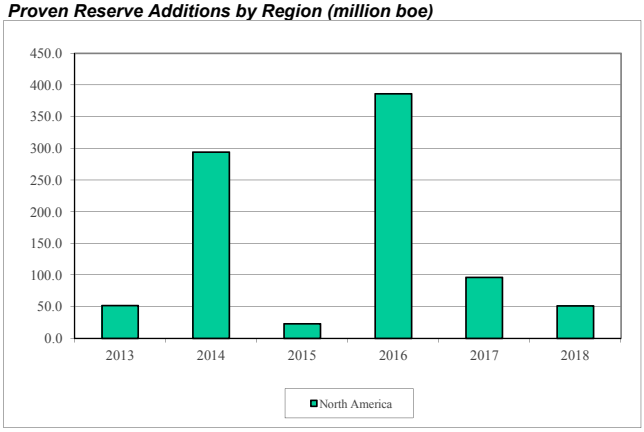
Proven Reserves vs RLI



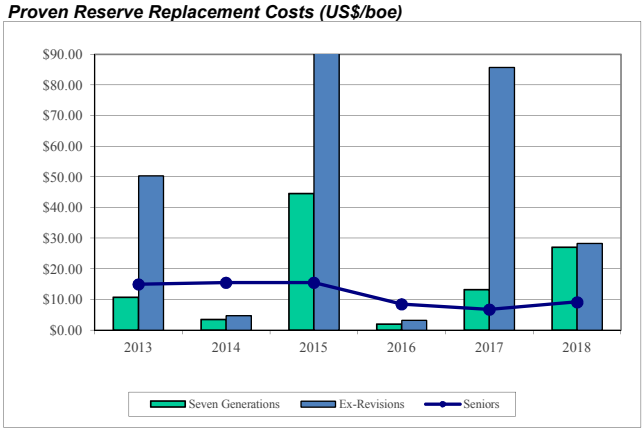
Capital Spending by Region (US$million)



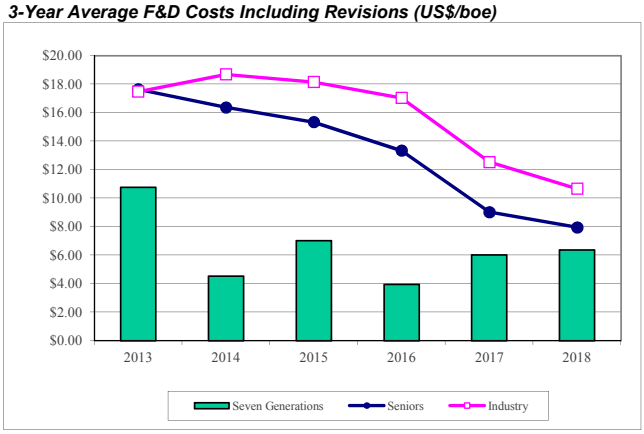
Proven Reserve Additions by Region (million boe)



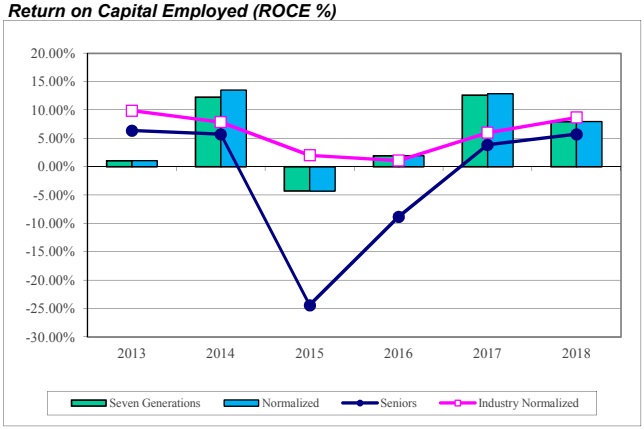
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

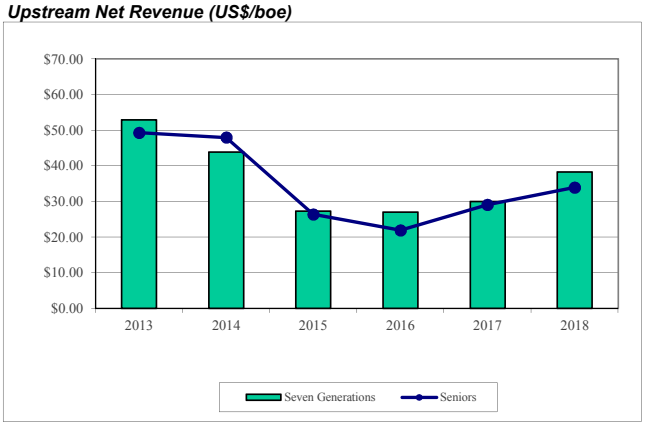
See pages F1 to F4 for analyst coverage.

Seven Generations Energy Ltd. (VII - TSX)

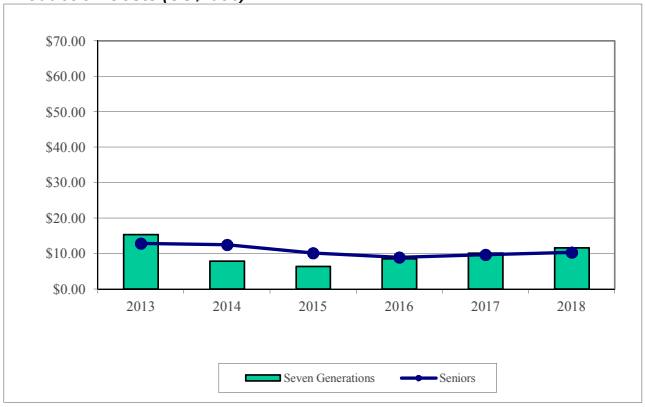
US$/boe, net

North America

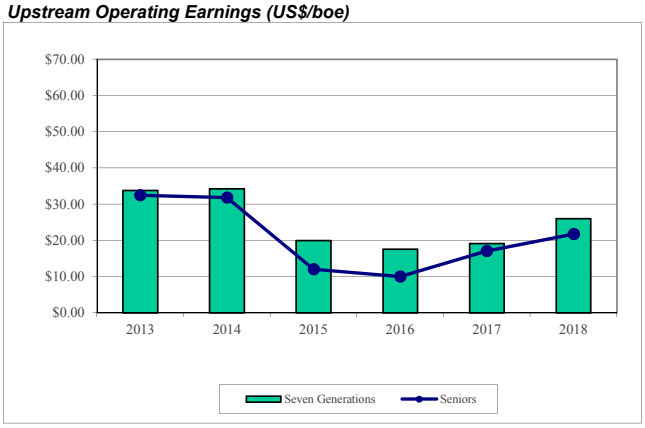
Upstream Net Revenue (US$/boe)



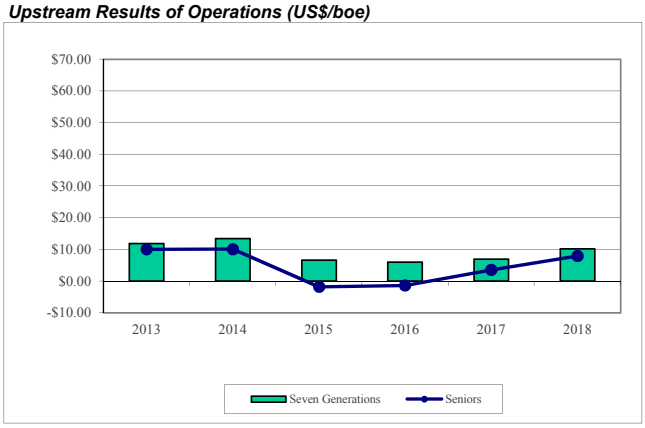
Production Costs (US$/boe)



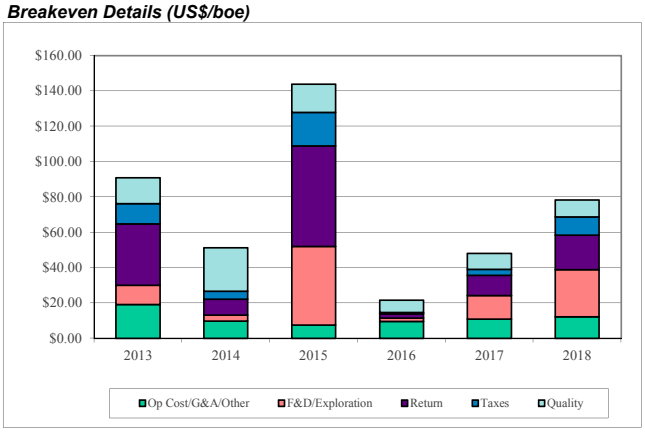
Upstream Operating Earnings (US$/boe)



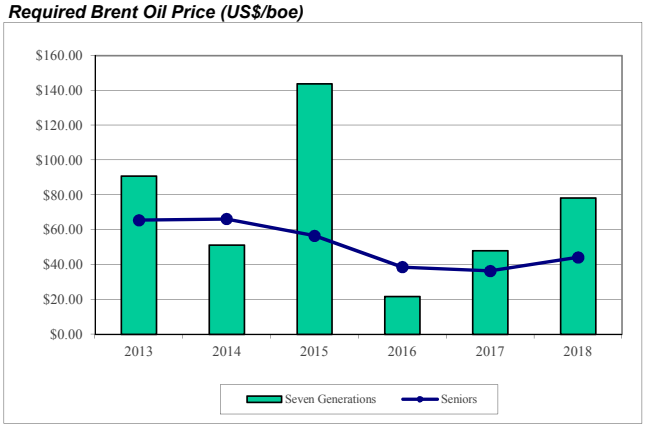
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Seven Generations Energy Ltd. (VII - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	108	437	418	937	1,654	2,519
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	(0)	142	112	(133)	161	(35)
Total Revenue and Other Income	-	-	-	-	-	108	579	530	804	1,815	2,484
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	261
Production and Transportation Expenses	-	-	-	-	-	32	81	126	318	562	741
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	-	-	-	8	18	19	36	43	44
Depreciation, Depletion and Amortization	-	-	-	-	-	38	144	222	365	562	664
Interest, net	-	-	-	-	-	24	58	80	105	149	100
Other	-	-	-	-	-	20	83	181	6	(83)	148
Earnings Before Income Tax	-	-	-	-	-	(13)	195	(98)	(25)	581	527
Current Income Taxes	-	-	-	-	-	-	-	0	1	2	(0)
Future Income Taxes	-	-	-	-	-	0	65	48	(7)	131	183
Total Income Taxes	-	-	-	-	-	0	65	48	(6)	133	183
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	(14)	131	(147)	(20)	448	345
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	(14)	131	(147)	(20)	448	345
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	(14)	131	(147)	(20)	448	345

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	(14)	131	(147)	(20)	448	345
Charges and Credits Not Impacting Cash	-	-	-	-	-	38	209	271	360	695	846
Other	-	-	-	-	-	24	(76)	201	214	(212)	119
Cash Flow From Operations	-	-	-	-	-	49	264	325	553	931	1,310
Change in Working Capital / Other	-	-	-	-	-	(8)	9	(27)	(66)	(41)	97
Net Cash From Operating Activities	-	-	-	-	-	41	273	298	487	890	1,407
Total Capital Expenditures	-	-	-	-	-	(558)	(1,015)	(1,025)	(739)	(1,273)	(1,384)
Acquisitions, net	-	-	-	-	-	-	9	-	(382)	-	-
Other	-	-	-	-	-	48	83	(48)	4	48	(41)
Net Cash From Investing Activities	-	-	-	-	-	(509)	(923)	(1,073)	(1,117)	(1,226)	(1,425)
Net Change in Debt	-	-	-	-	-	393	323	403	-	(41)	(3)
Net Change in Common Stock	-	-	-	-	-	246	867	-	792	-	(82)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	(23)	(53)	24	9	19	34
Net Cash From Financing Activities	-	-	-	-	-	616	1,137	427	801	(22)	(51)
Effect of Exchange Rate on Cash	-	-	-	-	-	9	3	1	(0)	(2)	0
Net Increase/(Decrease) in Cash	-	-	-	-	-	157	490	(347)	171	(359)	(68)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	142	278	664	306	486	130
Cash and Equivalents, End of Year	-	-	-	-	-	299	768	317	477	127	61

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Seven Generations Energy Ltd. (VII - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	331	960	464	627	403	332
Net Property, Plant and Equipment	-	-	-	-	-	1,030	1,856	2,435	4,344	5,192	5,996
Other Assets	-	-	-	-	-	4	5	45	17	30	35
Total Assets	-	-	-	-	-	1,365	2,821	2,944	4,988	5,625	6,362
Total Current Liabilities	-	-	-	-	-	125	243	161	239	304	322
Long-term Debt	-	-	-	-	-	403	737	1,211	1,596	1,509	1,669
Deferred Income Taxes	-	-	-	-	-	9	62	101	82	215	401
Other Liabilities and Deferred Credits	-	-	-	-	-	24	48	70	183	165	171
Total Liabilities	-	-	-	-	-	560	1,090	1,545	2,100	2,193	2,562
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	-	-	767	1,558	1,391	2,894	2,980	2,988
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	44	50	48	52	78	87
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	-	(8)	124	(40)	(58)	374	725
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	-	-	-	-	-	804	1,731	1,399	2,888	3,432	3,800
Total Liabilities and Shareholders' Equity	-	-	-	-	-	1,365	2,821	2,944	4,988	5,625	6,362
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**1.1%**	**12.3%**	**-4.3%**	**1.9%**	**12.6%**	**8.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$million)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	0	0	0	0	0	112	451	542	1,009	1,671	2,445	5,125	6,118
Production Costs	0	0	0	0	0	32	81	126	318	562	741	1,621	1,828
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	0	0	0	0	0	38	144	222	365	562	664	1,591	1,958
G&A/Other	0	0	0	0	0	8	18	19	36	43	44	123	160
Pre-tax Results Of Operations	0	0	0	0	0	33	207	175	290	503	997	1,790	2,173
Income Taxes	0	0	0	0	0	0	65	48	-6	133	183	310	423
Results Of Operations	0	0	0	0	0	33	143	126	296	370	814	1,480	1,749

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	0	0	0	0	0	112	451	542	1,009	1,671	2,445	5,125	6,118
Production Costs	0	0	0	0	0	32	81	126	318	562	741	1,621	1,828
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	0	0	0	0	0	38	144	222	365	562	664	1,591	1,958
G&A/Other	0	0	0	0	0	8	18	19	36	43	44	123	160
Pre-tax Results Of Operations	0	0	0	0	0	33	207	175	290	503	997	1,790	2,173
Income Taxes	0	0	0	0	0	0	65	48	-6	133	183	310	423
Results Of Operations	0	0	0	0	0	33	143	126	296	370	814	1,480	1,749

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Seven Generations Energy Ltd. (VII - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue						$52.90	$43.89	$27.32	$26.98	$30.01	$38.30	$32.66	$32.71
Production Costs						$15.38	$7.86	$6.37	$8.50	$10.10	$11.60	$10.33	$9.77
Exploration						$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A						$17.93	$14.06	$11.18	$9.77	$10.10	$10.39	$10.14	$10.47
G&A / Other						$3.74	$1.79	$0.96	$0.95	$0.78	$0.69	$0.78	$0.86
Pre-tax Results of Operations						$15.84	$20.18	$8.81	$7.77	$9.04	$15.61	$11.41	$11.62
Income Taxes						$3.96	$6.69	$2.20	$1.71	$2.07	$5.41	$3.03	$3.20
Results of Operations						$11.88	$13.49	$6.60	$6.06	$6.97	$10.21	$8.39	$8.42

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$0.00	$0.00	$0.00	$0.00	$0.00	$52.90	$43.89	$27.32	$26.98	$30.01	$38.30	$32.66	$32.71
Production Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$15.38	$7.86	$6.37	$8.50	$10.10	$11.60	$10.33	$9.77
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$0.00	$0.00	$0.00	$0.00	$0.00	$17.93	$14.06	$11.18	$9.77	$10.10	$10.39	$10.14	$10.47
G&A / Other	$0.00	$0.00	$0.00	$0.00	$0.00	$3.74	$1.79	$0.96	$0.95	$0.78	$0.69	$0.78	$0.86
Pre-tax Results of Operations	$0.00	$0.00	$0.00	$0.00	$0.00	$15.84	$20.18	$8.81	$7.77	$9.04	$15.61	$11.41	$11.62
Income Taxes	$0.00	$0.00	$0.00	$0.00	$0.00	$3.96	$6.69	$2.20	$1.71	$2.07	$5.41	$3.03	$3.20
Results of Operations	$0.00	$0.00	$0.00	$0.00	$0.00	$11.88	$13.49	$6.60	$6.06	$6.97	$10.21	$8.39	$8.42

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Seven Generations Energy Ltd. (VII - TSX)

Exhibit 6: Reserve Replacement Performance (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	16.6	72.5	140.9	266.0	401.2	455.9	374.4	267.3
Liquids Production (b/d)	-	-	-	-	-	3,009	16,053	30,910	58,118	85,646	98,951	80,905	57,936
Total Production (boe/d)	-	-	-	-	-	5,776	28,136	54,391	102,457	152,516	174,928	143,300	102,485
% Gas Production	-	-	-	-	-	48%	43%	43%	43%	44%	43%	44%	43%
% Oil Production	-	-	-	-	-	52%	57%	57%	57%	56%	57%	56%	57%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	-	305.6	1,098.7	1,143.7	2,068.5	2,312.2	2,234.3	2,205.0	1,771.5
Closing Oil Reserves (mmbbls)	-	-	-	-	-	48.2	198.1	193.2	373.9	377.3	373.6	375.0	303.2
Closing Total Proven Reserves (mmboe)	-	-	-	-	-	99.2	381.2	383.8	718.7	762.7	746.0	742.5	598.5
% Gas Reserves	-	-	-	-	-	51%	48%	50%	48%	51%	50%	49%	49%
% Oil Reserves	-	-	-	-	-	49%	52%	50%	52%	49%	50%	51%	51%
Proven Reserve Life Index	-	-	-	-	-	47.0	37.0	19.2	19.1	13.6	11.6	14.8	20.1
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	-	167.0	821.4	72.6	1,061.3	369.1	67.9	1,498.4	2,392.4
Oil Additions (mmbbls)	-	-	-	-	-	24.0	157.2	10.9	209.3	34.7	39.8	283.9	452.0
Total Additions (mmboe)	-	-	-	-	-	51.8	294.1	23.0	386.2	96.3	51.1	533.6	850.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	-	11.1	213.5	0.9	63.9	14.5	48.8	127.3	341.8
Net Acquisitions	-	-	-	-	-	0.0	0.0	0.0	168.4	0.3	0.0	168.8	168.8
Revisions of Estimates	-	-	-	-	-	40.7	80.6	22.1	153.9	81.4	2.3	237.6	340.2
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	-	-	21.4%	72.6%	4.1%	16.6%	15.1%	95.5%	23.9%	40.2%
Net Acquisitions	-	-	-	-	-	0.0%	0.0%	0.0%	43.6%	0.4%	0.0%	31.6%	19.8%
Revisions of Estimates	-	-	-	-	-	78.6%	27.4%	95.9%	39.8%	84.6%	4.5%	44.5%	40.0%
Additions as % of Production:													
Gas	-	-	-	-	-	2755.9%	3104.1%	141.1%	1093.0%	252.1%	40.8%	365.5%	490.4%
Oil	-	-	-	-	-	2182.0%	2683.5%	96.7%	986.9%	111.2%	110.2%	320.4%	427.5%
Total	-	-	-	-	-	2456.9%	2864.1%	115.9%	1032.8%	172.9%	80.1%	340.1%	454.9%
Additions as % of Reserves:													
Gas	-	-	-	-	-	54.6%	74.8%	6.3%	51.3%	16.0%	3.0%	68.0%	135.1%
Oil	-	-	-	-	-	49.7%	79.4%	5.6%	56.0%	9.2%	10.7%	75.7%	149.1%
Total	-	-	-	-	-	52.2%	77.2%	6.0%	53.7%	12.6%	6.9%	71.9%	142.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	-	-	-	$0.1	$0.2	$0.0	$12.5	$76.3	$144.1	$232.9	$233.1
Exploration & Development	-	-	-	-	-	$498.2	$970.3	$1,021.1	$726.3	$1,197.1	$1,239.4	$3,162.9	$5,154.3
Net Acquisitions	-	-	-	-	-	$59.5	$35.6	$4.0	$0.0	$0.0	$0.0	$0.0	$39.6
Total Expenditures	-	-	-	-	-	$557.8	$1,006.2	$1,025.1	$738.9	$1,273.4	$1,383.5	$3,395.8	$5,427.0
Expenditures as % of Total:													
Land & Seismic	-	-	-	-	-	0.0%	0.0%	0.0%	1.7%	6.0%	10.4%	6.9%	4.3%
Exploration & Development	-	-	-	-	-	89.3%	96.4%	99.6%	98.3%	94.0%	89.6%	93.1%	95.0%
Net Acquisitions	-	-	-	-	-	10.7%	3.5%	0.4%	0.0%	0.0%	0.0%	0.0%	0.7%
Cashflow (US$million)	-	-	-	-	-	$48.8	$264.3	$324.7	$553.5	$930.9	$1,310.3	$2,794.7	$3,383.6
Cashflow (US$/boe)	-	-	-	-	-	$23.16	$25.73	$16.36	$14.80	$16.72	$20.52	$17.81	$18.09
Recycle Ratio	-	-	-	-	-	2.2x	7.5x	0.4x	7.7x	1.3x	0.8x	2.8x	2.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	-	-	$9.62	$3.30	$44.39	$3.39	$13.27	$27.07	$9.31	$7.90
Net Acquisition Costs	-	-	-	-	-	na	na	na	$0.00	$0.00	na	nm	nm
All Sources (incl. revisions)	-	-	-	-	-	$10.77	$3.42	$44.56	$1.91	$13.23	$27.07	$6.36	$6.38
Exploration & Development (excl. revisions)	-	-	-	-	-	$45.02	$4.55	$1,079.66	$11.56	$87.71	$28.34	$26.68	$15.76
Net Acquisition Costs	-	-	-	-	-	na	na	na	$0.00	$0.00	na	nm	nm
All Sources (excl. revisions)	-	-	-	-	-	$50.40	$4.71	$1,083.92	$3.18	$85.70	$28.34	$11.47	$10.63

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Seven Generations Energy Ltd. (VII - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	-	-	-	-	-	15.38	7.86	6.37	8.50	10.10	11.60	10.33	9.77
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	3.74	1.79	0.96	0.95	0.78	0.69	0.78	0.86
F&D Costs	-	-	-	-	-	10.77	3.42	44.56	1.91	13.23	27.07	6.36	6.38
Return on Capital	-	-	-	-	-	34.75	9.00	57.00	2.45	11.53	19.56	6.03	8.63
Income Taxes	-	-	-	-	-	11.58	4.46	19.00	0.69	3.42	10.36	2.18	3.28
Breakeven Oil Price	-	-	-	-	-	76.23	26.53	127.89	14.50	39.06	69.27	25.69	28.92
Quality Differential	-	-	-	-	-	14.60	24.66	15.86	7.08	8.92	8.95	8.32	13.09
Required Brent Price	-	-	-	-	-	90.83	51.19	143.75	21.58	47.98	78.22	34.00	42.01

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	-	-	-	-	-	15.38	7.86	6.37	8.50	10.10	11.60	10.33	9.77
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	3.74	1.79	0.96	0.95	0.78	0.69	0.78	0.86
F&D Costs	-	-	-	-	-	10.77	3.42	44.56	1.91	13.23	27.07	6.36	6.38
Return on Capital	-	-	-	-	-	34.75	9.00	57.00	2.45	11.53	19.56	6.03	8.63
Income Taxes	-	-	-	-	-	11.58	4.46	19.00	0.69	3.42	10.36	2.18	3.28
Breakeven Oil Price	-	-	-	-	-	76.23	26.53	127.89	14.50	39.06	69.27	25.69	28.92
Quality Differential	-	-	-	-	-	14.60	24.66	15.86	7.08	8.92	8.95	8.32	13.09
Required Brent Price	-	-	-	-	-	90.83	51.19	143.75	21.58	47.98	78.22	34.00	42.01

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	-	-	-	-	-	na	na	na	na	na	na	na	na
Exploration Expense	-	-	-	-	-	na	na	na	na	na	na	na	na
G&A/Other	-	-	-	-	-	na	na	na	na	na	na	na	na
F&D Costs	-	-	-	-	-	na	na	na	na	na	na	na	na
Return on Capital	-	-	-	-	-	na	na	na	na	na	na	na	na
Income Taxes	-	-	-	-	-	na	na	na	na	na	na	na	na
Breakeven Oil Price	-	-	-	-	-	na	na	na	na	na	na	na	na
Quality Differential	-	-	-	-	-	na	na	na	na	na	na	na	na
Required Brent Price	-	-	-	-	-	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Seven Generations Energy Ltd. (VII - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	-	-	-	22.15	10.36	8.33	10.19	12.60	14.99	12.94	12.33
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	5.38	2.35	1.26	1.14	0.97	0.89	0.98	1.08
F&D Costs (1-Year)	-	-	-	-	-	16.38	4.63	62.49	2.32	18.61	30.59	7.86	7.86
Return on Capital	-	-	-	-	-	51.12	11.74	76.68	2.91	15.69	21.24	7.19	7.19
Income Taxes	-	-	-	-	-	17.04	5.82	25.56	0.82	4.66	11.25	2.59	2.59
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**112.07**	**34.91**	**174.31**	**17.37**	**52.54**	**78.97**	**31.57**	**31.06**
Quality Differential	-	-	-	-	-	21.03	32.50	20.75	8.48	11.13	11.57	10.39	12.98
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**133.10**	**67.41**	**195.06**	**25.86**	**63.67**	**90.54**	**41.96**	**44.04**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	-	-	-	22.15	10.36	8.33	10.19	12.60	14.99	12.94	12.33
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	5.38	2.35	1.26	1.14	0.97	0.89	0.98	1.08
F&D Costs (1-Year)	-	-	-	-	-	52.81	42.83	23.98	7.59	17.28	21.20	14.37	17.51
Return on Capital	-	-	-	-	-	212.13	125.65	29.17	9.52	14.45	14.62	13.22	16.18
Income Taxes	-	-	-	-	-	70.71	62.31	9.72	2.69	4.29	7.74	4.77	5.84
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**363.19**	**243.51**	**72.46**	**31.12**	**49.60**	**59.44**	**46.28**	**52.95**
Quality Differential	-	-	-	-	-	21.03	32.50	20.75	8.48	11.13	11.57	10.39	12.98
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**384.21**	**276.01**	**93.21**	**39.60**	**60.73**	**71.00**	**56.67**	**65.93**

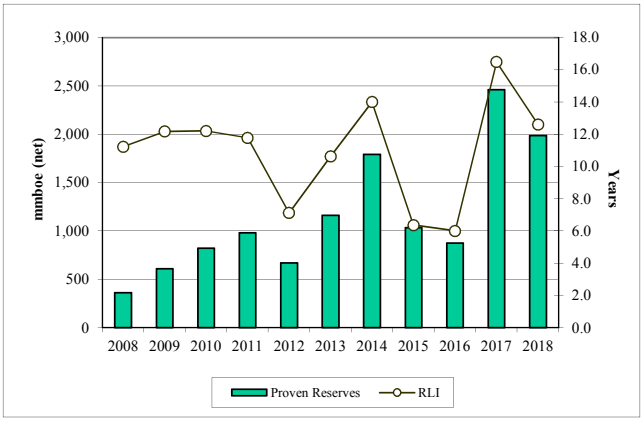
Source: BMO Capital Markets, Company Reports

Southwestern Energy (SWN - NYSE) US$, net

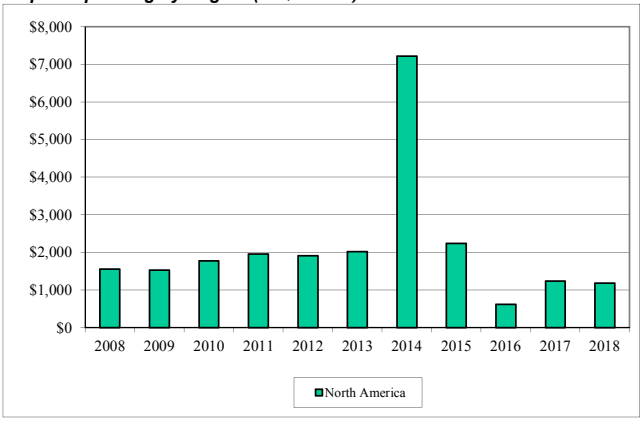
- Southwestern reported results of operations of $4.57/boe in 2018, compared to $3.51/boe in 2017.
- The company's one-year F&D costs came in at $4.62/boe. Excluding revisions, 2018 F&D costs were $7.04/boe. On a realized oil:gas ratio basis, F&D costs were $6.38/boe, while the costs for PD reserves were $3.29/boe.
- We estimate a required Brent breakeven oil price of $38.23/boe on total proved reserves, while its PD costs imply a Brent breakeven of $31.18/boe, one of the lowest in the peer group.
- Southwestern reported return on capital of 12.1% in 2018 versus 17.5% last year.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

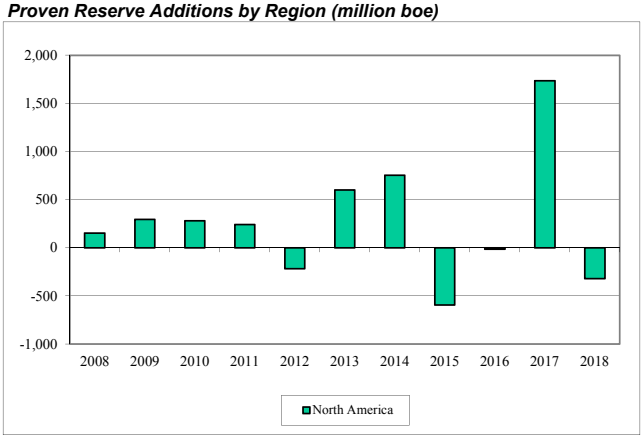
Proven Reserves vs RLI



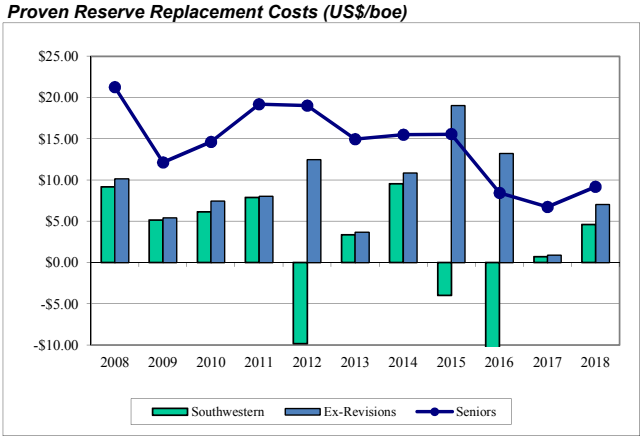
Capital Spending by Region (US$million)



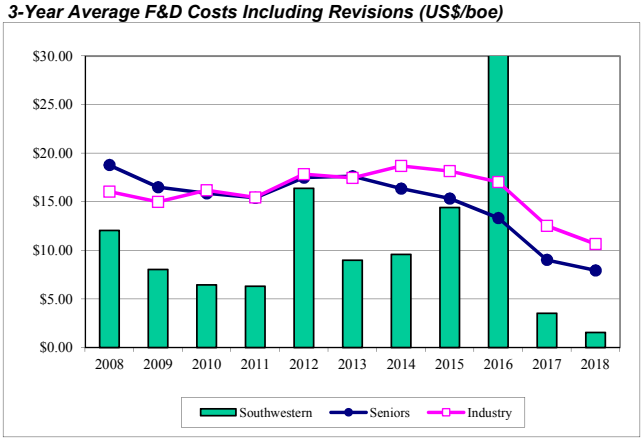
Proven Reserve Additions by Region (million boe)



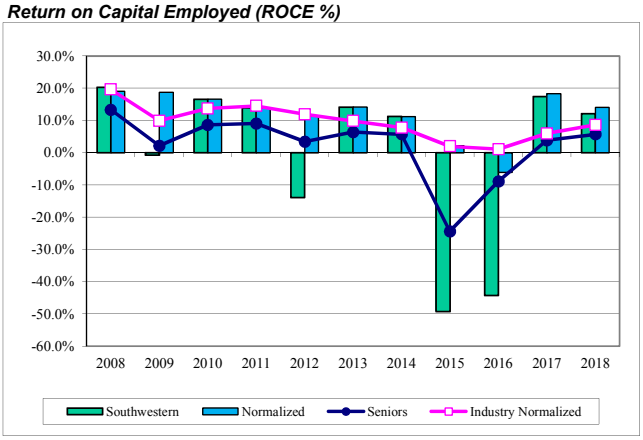
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets

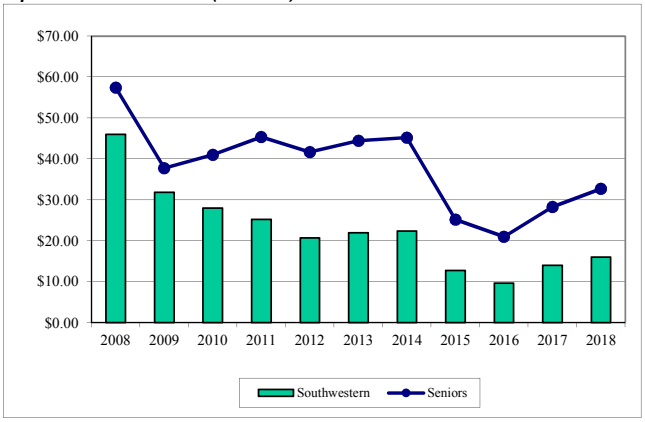
See pages F1 to F4 for analyst coverage.

Southwestern Energy (SWN - NYSE)

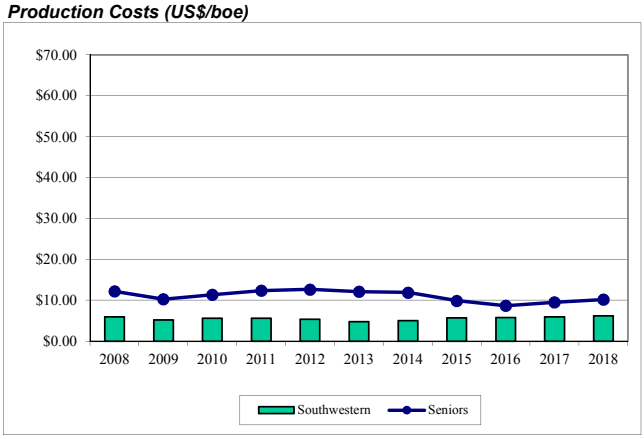
US$/boe, net

North America

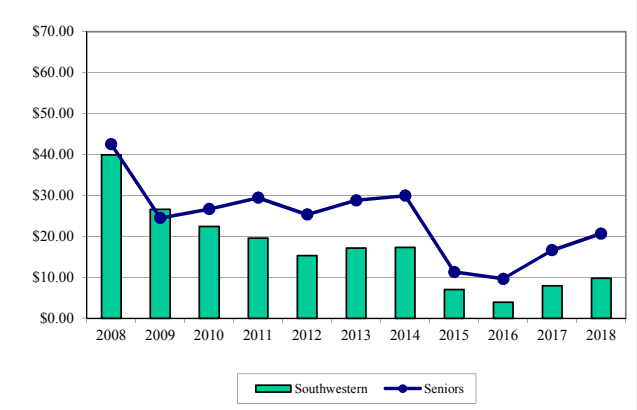
Upstream Net Revenue (US$/boe)



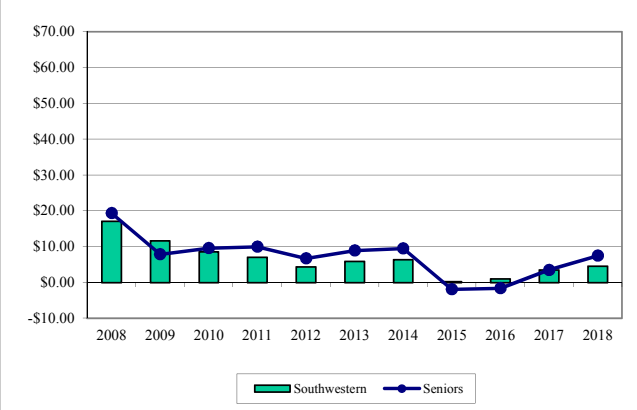
Production Costs (US$/boe)



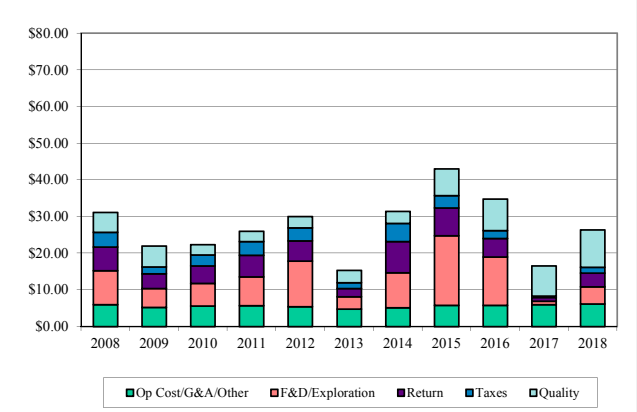
Upstream Operating Earnings (US$/boe)



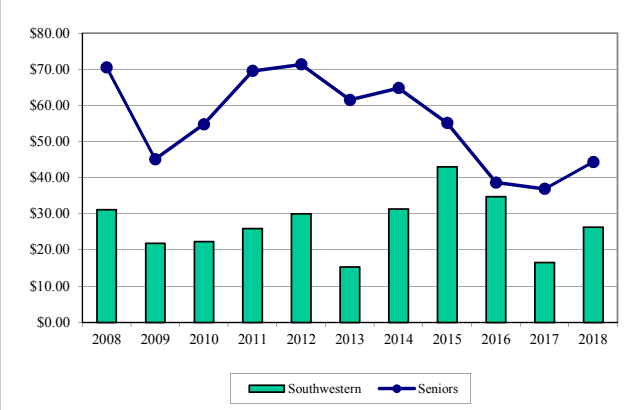
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Southwestern Energy (SWN - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,532	1,585	1,869	2,089	1,950	2,398	2,849	2,095	1,434	2,101	2,546
Midstream / Downstream Revenue	730	563	739	864	765	973	1,189	1,038	1,002	1,098	1,311
Other	50	(2)	2	(1)	-	0	-	-	-	4	5
Total Revenue and Other Income	2,312	2,146	2,611	2,953	2,715	3,371	4,038	3,133	2,436	3,203	3,862
Crude Oil and Product Purchases	772	483	611	709	592	782	980	852	864	976	1,229
Production and Transportation Expenses	108	137	192	241	245	329	427	689	592	671	785
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	
General and Administrative	102	123	146	158	175	191	221	246	247	233	209
Depreciation, Depletion and Amortization	414	494	590	705	811	787	942	1,091	436	504	560
Interest, net	29	19	26	24	36	42	59	56	88	135	124
Other	(32)	944	50	65	2,006	51	(40)	6,760	2,881	(269)	417
Earnings Before Income Tax	920	(52)	995	1,051	(1,150)	1,191	1,449	(6,561)	(2,672)	953	538
Current Income Taxes	122	(65)	12	4	19	(11)	21	(2)	(7)	(22)	1
Future Income Taxes	229	49	380	409	(462)	498	504	(2,003)	(22)	(71)	-
Total Income Taxes	351	(16)	392	413	(443)	487	525	(2,005)	(29)	(93)	1
Minority Interest	(1)	0	0	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	568	(36)	604	638	(707)	704	924	(4,556)	(2,643)	1,046	537
Discontinued Operations	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	568	(36)	604	638	(707)	704	924	(4,556)	(2,643)	1,046	537
Preferred Stock Dividends	-	-	-	-	-	-	-	106	108	231	2
Net Earnings to Common Shareholders	568	(36)	604	638	(707)	704	924	(4,662)	(2,751)	815	535

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	568	(36)	604	638	(707)	704	924	(4,556)	(2,643)	1,046	537
Charges and Credits Not Impacting Cash	645	1,459	972	1,117	353	1,288	1,446	(912)	414	433	731
Other	(46)	18	4	11	1,953	(8)	(100)	6,936	2,826	(341)	45
Cash Flow From Operations	1,167	1,441	1,580	1,766	1,599	1,984	2,270	1,468	597	1,138	1,313
Change in Working Capital / Other	(7)	(82)	63	(26)	55	(75)	65	112	(99)	(41)	(90)
Net Cash From Operating Activities	1,161	1,360	1,643	1,740	1,654	1,909	2,335	1,580	498	1,097	1,223
Total Capital Expenditures	(1,756)	(1,780)	(2,073)	(2,184)	(2,108)	(2,253)	(2,043)	(1,798)	(593)	(1,268)	(1,290)
Acquisitions, net	964	1	350	155	201	18	(5,255)	150	430	10	1,643
Other	(0)	(1)	(3)	5	(0)	19	10	10	1	6	6
Net Cash From Investing Activities	(792)	(1,781)	(1,726)	(2,025)	(1,907)	(2,216)	(7,288)	(1,638)	(162)	(1,252)	359
Net Change in Debt	(252)	263	96	249	282	275	5,027	(2,223)	(121)	(332)	(2,087)
Net Change in Common Stock	-	-	-	-	-	-	-	669	1,247	-	(180)
Net Change in Preferred Stock	-	-	-	-	-	-	-	1,673	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	78	(25)	(9)	35	9	3	-	(99)	(54)	(20)	(30)
Net Cash From Financing Activities	(174)	238	86	284	291	277	4,983	20	1,072	(352)	(2,297)
Effect of Exchange Rate on Cash	-	-	(0)	0	(0)	(1)	-	-	-		
Net Increase/(Decrease) in Cash	194	(183)	3	(0)	38	(31)	30	(38)	1,408	(507)	(715)
Cash and Equivalents, Beginning of Year	2	196	13	16	16	54	23	53	15	1,423	916
Cash and Equivalents, End of Year	196	13	16	16	54	23	53	15	1,423	916	201

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Southwestern Energy (SWN - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	889	565	581	978	809	644	1,115	393	1,872	1,509	956
Net Property, Plant and Equipment	3,714	4,127	5,298	6,645	5,837	7,297	13,712	7,543	4,955	5,772	4,656
Other Assets	157	78	138	279	92	107	98	174	249	240	185
Total Assets	4,760	4,770	6,017	7,903	6,738	8,048	14,925	8,110	7,076	7,521	5,797
Total Current Liabilities	793	536	694	885	768	688	5,428	707	1,064	780	846
Long-term Debt	674	998	1,093	1,342	1,668	1,950	2,466	4,728	4,612	4,391	2,318
Deferred Income Taxes	722	812	1,130	1,587	1,049	1,532	1,951	-	-	-	-
Other Liabilities and Deferred Credits	53	83	135	120	216	255	418	393	483	371	271
Total Liabilities	2,242	2,429	3,053	3,934	3,702	4,426	10,263	5,828	6,159	5,542	3,435
Minority Interests	10	10	-							-	-
Common Shares	3	3	3	3	4	4	4	4	5	5	6
Contributed Surplus (Paid-in Capital)	811	833	862	903	935	971	1,019	3,409	4,677	4,698	4,715
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	1,450	1,414	2,018	2,656	1,949	2,653	3,577	(1,082)	(3,725)	(2,679)	(2,142)
Other / Comprehensive Income (Loss)	243	80	81	406	148	(5)	62	(49)	(40)	(45)	(217)
Total Shareholders' Equity	2,508	2,331	2,965	3,969	3,036	3,622	4,662	2,282	917	1,979	2,362
Total Liabilities and Shareholders' Equity	4,760	4,770	6,017	7,903	6,738	8,048	14,925	8,110	7,076	7,521	5,797
Return on Capital Employed (ROCE)	**20.3%**	**-0.7%**	**16.6%**	**13.9%**	**-13.8%**	**14.2%**	**11.3%**	**-49.3%**	**-44.2%**	**17.5%**	**12.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	1,491	1,593	1,890	2,100	1,948	2,404	2,862	2,074	1,413	2,086	2,525	6,024	10,960
Production Costs	194	260	377	469	505	520	648	935	839	891	974	2,704	4,287
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	399	474	561	666	765	787	942	1,091	371	440	514	1,325	3,358
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	898	860	953	965	678	1,098	1,272	48	203	755	1,037	1,995	3,315
Income Taxes	343	279	371	376	264	449	461	15	62	231	317	610	1,085
Results Of Operations	555	580	581	589	414	649	811	33	141	524	720	1,385	2,230

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,491	1,593	1,890	2,100	1,948	2,404	2,862	2,074	1,413	2,086	2,525	6,024	10,960
Production Costs	194	260	377	469	505	520	648	935	839	891	974	2,704	4,287
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	399	474	561	666	765	787	942	1,091	371	440	514	1,325	3,358
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	898	860	953	965	678	1,098	1,272	48	203	755	1,037	1,995	3,315
Income Taxes	343	279	371	376	264	449	461	15	62	231	317	610	1,085
Results Of Operations	555	580	581	589	414	649	811	33	141	524	720	1,385	2,230

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

Southwestern Energy (SWN - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$45.99	$31.82	$28.03	$25.21	$20.69	$21.96	$22.37	$12.74	$9.68	$13.96	$16.02	$13.30	$14.74
Production Costs	$5.99	$5.18	$5.59	$5.63	$5.37	$4.75	$5.06	$5.74	$5.75	$5.96	$6.18	$5.97	$5.76
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$12.31	$9.47	$8.32	$7.99	$8.13	$7.19	$7.36	$6.70	$2.54	$2.95	$3.26	$2.93	$4.52
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$27.69	$17.17	$14.12	$11.58	$7.20	$10.03	$9.94	$0.29	$1.39	$5.05	$6.58	$4.40	$4.46
Income Taxes	$10.57	$5.58	$5.51	$4.51	$2.80	$4.10	$3.60	$0.09	$0.43	$1.54	$2.01	$1.35	$1.46
Results Of Operations	$17.12	$11.59	$8.62	$7.07	$4.39	$5.93	$6.34	$0.20	$0.97	$3.51	$4.57	$3.06	$3.00

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$45.99	$31.82	$28.03	$25.21	$20.69	$21.96	$22.37	$12.74	$9.68	$13.96	$16.02	$13.30	$14.74
Production Costs	$5.99	$5.18	$5.59	$5.63	$5.37	$4.75	$5.06	$5.74	$5.75	$5.96	$6.18	$5.97	$5.76
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$12.31	$9.47	$8.32	$7.99	$8.13	$7.19	$7.36	$6.70	$2.54	$2.95	$3.26	$2.93	$4.52
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$27.69	$17.17	$14.12	$11.58	$7.20	$10.03	$9.94	$0.29	$1.39	$5.05	$6.58	$4.40	$4.46
Income Taxes	$10.57	$5.58	$5.51	$4.51	$2.80	$4.10	$3.60	$0.09	$0.43	$1.54	$2.01	$1.35	$1.46
Results Of Operations	$17.12	$11.59	$8.62	$7.07	$4.39	$5.93	$6.34	$0.20	$0.97	$3.51	$4.57	$3.06	$3.00

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Southwestern Energy (SWN - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	526.8	821.1	1,105.9	1,368.3	1,546.5	1,796.4	2,095.9	2,463.0	2,158.9	2,183.6	2,211.0	2,184.5	2,222.5
Liquids Production (b/d)	1,055	340	468	266	227	515	1,277	35,526	39,901	45,403	63,323	49,542	37,086
Total Production (boe/d)	88,847	137,188	184,777	228,317	257,983	299,923	350,592	446,028	399,719	409,330	431,816	413,622	407,497
% Gas Production	99%	100%	100%	100%	100%	100%	100%	92%	90%	89%	85%	88%	91%
% Oil Production	1%	0%	0%	0%	0%	0%	0%	8%	10%	11%	15%	12%	9%
Proven Reserves:													
Gas Reserves (bcf)	2,175.5	3,650.3	4,930.0	5,887.2	4,018.8	6,976.1	9,811.1	5,919.1	4,868.1	11,128.1	8,046.1	8,014.1	7,954.5
Oil Reserves (mmbbls)	1.5	1.1	1.2	1.0	0.3	0.5	156.3	49.7	64.4	608.1	646.1	439.5	304.9
Total Proven Reserves (mmboe)	364.1	609.4	822.9	982.2	670.1	1,163.1	1,791.5	1,036.2	875.8	2,462.7	1,987.1	1,775.2	1,630.7
% Gas Reserves	100%	100%	100%	100%	100%	100%	91%	95%	93%	75%	67%	75%	81%
% Oil Reserves	0%	0%	0%	0%	0%	0%	9%	5%	7%	25%	33%	25%	19%
Proven Reserve Life Index	11.2	12.2	12.2	11.8	7.1	10.6	14.0	6.4	6.0	16.5	12.6	11.7	11.1
Proven Reserve Additions:													
Gas Additions (bcf)	970.9	1,774.5	1,683.3	1,456.7	-1,303.9	3,613.0	3,600.0	-2,993.0	-263.0	7,057.0	-2,275.0	4,519.0	5,126.0
Oil Additions (mmbbls)	(7.0)	(0.3)	0.3	-0.1	-0.6	0.3	156.3	-93.6	29.3	560.2	61.1	650.6	713.3
Total Additions (mmboe)	154.8	295.4	280.9	242.7	-217.9	602.5	756.3	-592.5	-14.5	1,736.4	-318.1	1,403.8	1,567.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	153.4	280.6	238.5	243.2	153.3	547.5	282.0	98.6	47.0	1,347.8	168.2	1,563.0	1,943.6
Acquisitions	0.0	0.3	0.0	0.0	0.0	0.7	383.9	19.0	0.0	0.0	0.0	-	402.9
Dispositions	(14.9)	(0.9)	(9.2)	(6.2)	(23.5)	-	(0.0)	(29.8)	(2.5)	-	(573.9)	(576.4)	(606.2)
Revisions of Estimates	16.4	15.5	51.6	5.6	-347.6	54.3	90.4	-680.4	-59.0	388.6	87.6	417.2	(172.8)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	99.1%	95.0%	84.9%	100.2%	-70.3%	90.9%	37.3%	-16.6%	-323.7%	77.6%	-52.9%	111.3%	124.0%
Acquisitions	0.0%	0.1%	0.0%	0.0%	0.0%	0.1%	50.8%	-3.2%	0.0%	0.0%	0.0%	0.0%	25.7%
Dispositions	-9.6%	-0.3%	-3.3%	-2.6%	10.8%	0.0%	0.0%	5.0%	17.5%	0.0%	180.4%	-41.1%	-38.7%
Revisions of Estimates	10.6%	5.2%	18.4%	2.3%	159.5%	9.0%	12.0%	114.8%	406.3%	22.4%	-27.6%	29.7%	-11.0%
Additions as % of Production:													
Gas	505.0%	592.1%	417.0%	291.7%	-231.0%	551.0%	470.6%	-332.9%	-33.4%	885.4%	-281.9%	188.9%	126.4%
Oil	-1823.4%	-261.3%	193.6%	-129.9%	-700.0%	168.6%	33540.1%	-722.2%	201.3%	3380.5%	264.3%	1199.3%	1053.9%
Total	477.4%	590.0%	416.5%	291.2%	-231.4%	550.4%	591.0%	-363.9%	-9.9%	1162.2%	-201.8%	309.9%	210.8%
Additions as % of Reserves:													
Gas	44.6%	48.6%	34.1%	24.7%	-32.4%	51.8%	36.7%	-50.6%	-5.4%	63.4%	-28.3%	56.4%	64.4%
Oil	-465.8%	-30.6%	27.2%	-12.7%	-175.0%	68.8%	100.0%	-188.5%	45.5%	92.1%	9.5%	148.0%	233.9%
Total	42.5%	48.5%	34.1%	24.7%	-32.5%	51.8%	42.2%	-57.2%	-1.7%	70.5%	-16.0%	79.1%	96.1%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$245.4	$52.2	$27.1	$63.4	$197.3	$192.2	$232.0	$50.0	$17.0	$22.0	$5.0	$44.0	$326.0
Development	$1,217.0	$1,358.1	$1,524.5	$1,633.8	$1,492.8	$1,662.1	$1,600.0	$1,417.0	$433.0	$1,024.0	$1,014.0	$2,471.0	$5,488.0
Acquisitions	$97.6	$119.6	$229.9	$262.9	$220.8	$168.4	$5,389.0	$773.0	$171.0	$194.0	$164.0	$529.0	$6,691.0
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$1,560.0	$1,529.9	$1,781.4	$1,960.1	$1,910.9	$2,022.7	$7,221.0	$2,240.0	$621.0	$1,240.0	$1,183.0	$3,044.0	$12,505.0
Expenditures as % of Total:													
Exploration	15.7%	3.4%	1.5%	3.2%	10.3%	9.5%	3.2%	2.2%	2.7%	1.8%	0.4%	1.4%	2.6%
Development	78.0%	88.8%	85.6%	83.4%	78.1%	82.2%	22.2%	63.3%	69.7%	82.6%	85.7%	81.2%	43.9%
Acquisitions	6.3%	7.8%	12.9%	13.4%	11.6%	8.3%	74.6%	34.5%	27.5%	15.6%	13.9%	17.4%	53.5%
Cashflow (US$million)	$954.4	$1,054.4	$1,142.2	$1,255.3	$1,178.9	$1,435.4	$1,753.1	$1,124.3	$512.0	$964.3	$1,234.1	$2,710.3	$5,587.8
Cashflow (US$/boe)	$29.43	$21.06	$16.94	$15.06	$12.52	$13.11	$13.70	$6.91	$3.51	$6.45	$7.83	$5.98	$7.51
Recycle Ratio	3.2x	4.1x	2.8x	1.9x	-1.3x	3.9x	1.4x	0.4x	0.3x	7.0x	1.1x	3.9x	1.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$8.62	$4.76	$5.35	$6.82	-$8.70	$3.08	$4.92	-$2.52	-$37.56	$0.60	$3.98	$1.27	$3.28
Acquisition Costs	na	$399.74	na	nm	na	$245.61	$14.04	$40.62	na	na	na	na	$16.61
All Sources (incl. revisions)	$9.19	$5.16	$6.14	$7.88	-$9.83	$3.36	$9.55	-$3.98	-$51.83	$0.71	$4.62	$1.54	$5.75
Exploration & Development (excl. revisions)	$9.54	$5.03	$6.50	$6.98	$11.03	$3.39	$6.50	$14.87	$9.58	$0.78	$6.06	$1.61	$2.99
Acquisition Costs	na	$399.74	na	nm	na	$245.61	$14.04	$40.62	na	na	na	na	$16.61
All Sources (excl. revisions)	$10.17	$5.45	$7.47	$8.06	$12.47	$3.69	$10.84	$19.04	$13.21	$0.92	$7.04	$1.95	$5.33
Geographically Segmented Costs													
North America	$9.19	$5.16	$6.14	$7.88	-$9.83	$3.36	$9.55	-$3.98	-$51.83	$0.71	$4.62	$1.54	$5.75

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Southwestern Energy (SWN - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	5.99	5.18	5.59	5.63	5.37	4.75	5.06	5.74	5.75	5.96	6.18	5.97	5.76
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	9.19	5.16	6.14	7.88	12.47	3.36	9.55	19.04	13.21	0.92	4.62	6.25	9.47
Return on Capital	6.51	3.99	4.76	5.87	5.55	2.25	8.59	7.58	4.99	1.00	3.71	4.61	6.69
Income Taxes	4.01	1.92	3.04	3.75	3.54	1.55	4.88	3.34	2.20	0.44	1.63	2.03	3.26
Breakeven Oil Price	25.70	16.26	19.53	23.13	26.93	11.91	28.08	35.70	26.16	8.32	16.15	18.86	25.18
Quality Differential	5.45	5.66	2.83	2.85	3.10	3.39	3.29	7.32	8.61	8.23	10.19	9.01	7.53
Required Brent Price	31.16	21.91	22.35	25.98	30.03	15.29	31.37	43.03	34.77	16.56	26.35	27.88	32.71

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	5.99	5.18	5.59	5.63	5.37	4.75	5.06	5.74	5.75	5.96	6.18	5.97	5.76
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	9.19	5.16	6.14	7.88	12.47	3.36	9.55	19.04	13.21	0.92	4.62	6.25	9.47
Return on Capital	6.51	3.99	4.76	5.87	5.55	2.25	8.59	7.58	4.99	1.00	3.71	4.61	6.69
Income Taxes	4.01	1.92	3.04	3.75	3.54	1.55	4.88	3.34	2.20	0.44	1.63	2.03	3.26
Breakeven Oil Price	25.70	16.26	19.53	23.13	26.93	11.91	28.08	35.70	26.16	8.32	16.15	18.86	25.18
Quality Differential	5.45	5.66	2.83	2.85	3.10	3.39	3.29	7.32	8.61	8.23	10.19	9.01	7.53
Required Brent Price	31.16	21.91	22.35	25.98	30.03	15.29	31.37	43.03	34.77	16.56	26.35	27.88	32.71

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Southwestern Energy (SWN - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.63	14.16	18.11	24.70	38.60	25.60	10.81	5.72	6.55	7.90	8.95	7.73	7.48
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	21.28	14.19	19.96	34.75	47.51	18.19	16.55	18.98	14.60	1.12	6.38	7.37	11.53
Return on Capital	14.99	11.11	15.69	25.89	21.76	12.08	16.49	7.56	5.49	1.27	5.65	5.79	8.52
Income Taxes	9.25	5.34	10.02	16.52	13.89	8.36	9.37	3.33	2.42	0.56	2.49	2.55	4.14
Breakeven Oil Price	**59.16**	**44.81**	**63.78**	**101.86**	**121.76**	**64.24**	**53.22**	**35.59**	**29.06**	**10.85**	**23.47**	**23.44**	**31.67**
Quality Differential	12.41	15.45	9.16	12.52	22.31	18.26	7.01	7.30	9.81	10.91	14.76	11.83	9.96
Required Brent Price	**71.57**	**60.26**	**72.94**	**114.38**	**144.07**	**82.50**	**60.23**	**42.89**	**38.87**	**21.76**	**38.23**	**35.26**	**41.63**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.63	14.16	18.11	24.70	38.60	25.60	10.81	5.72	6.55	7.90	8.95	7.73	7.48
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	32.80	26.92	29.52	47.96	127.97	38.60	33.21	13.74	13.40	2.64	3.29	3.48	13.26
Return on Capital	22.98	20.76	22.80	35.80	56.66	25.63	33.08	5.51	5.04	2.99	2.90	2.73	9.87
Income Taxes	14.18	9.99	14.56	22.85	36.16	17.74	18.80	2.42	2.22	1.32	1.28	1.20	4.80
Breakeven Oil Price	**83.59**	**71.83**	**84.99**	**131.30**	**259.39**	**107.57**	**95.89**	**27.40**	**27.21**	**14.86**	**16.42**	**15.14**	**35.41**
Quality Differential	12.41	15.45	9.16	12.52	22.31	18.26	7.01	7.30	9.81	10.91	14.76	11.83	9.96
Required Brent Price	**96.00**	**87.28**	**94.15**	**143.82**	**281.70**	**125.83**	**102.90**	**34.70**	**37.01**	**25.77**	**31.18**	**26.97**	**45.37**

Source: BMO Capital Markets, Company Reports

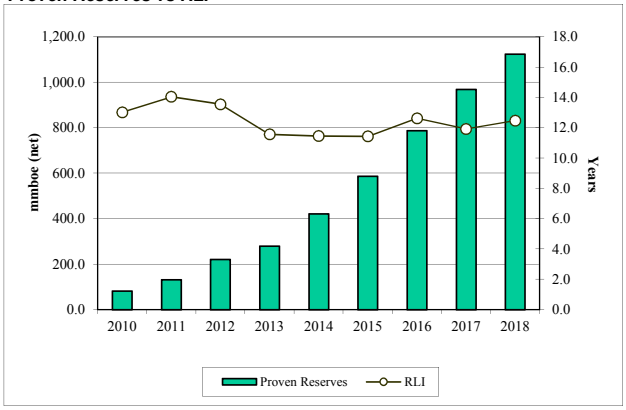
Tourmaline Oil Corp. (TOU - TSX)

US$, net

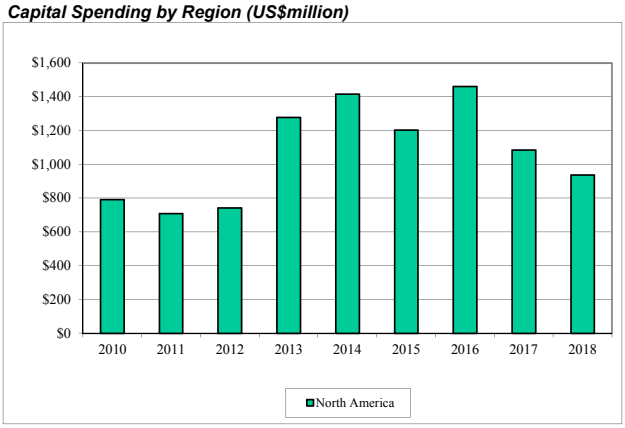
- Tourmaline reported results of operations of $3.72/boe in 2018, compared to $3.53/boe in 2017.
- The company reported a 2018 reserve replacement cost of $4.08/boe, similar to $4.17/boe last year. On a realized oil:gas basis, F&D costs were flat at $8.22/boe versus $8.38/boe in 2017, while costs for PD reserves increased to $16.31/boe from $12.14/boe.
- Tourmaline's 2018 results imply a required Brent breakeven oil price of $55.14/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a breakeven oil price of $71.87/boe.
- Return on capital employed was 4.9% in 2018.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure; all financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

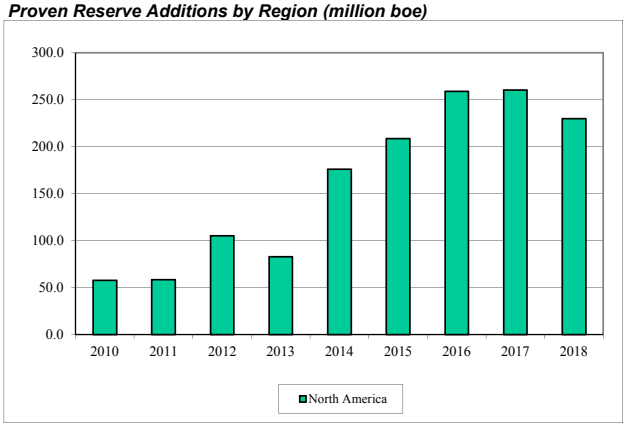
Proven Reserves vs RLI



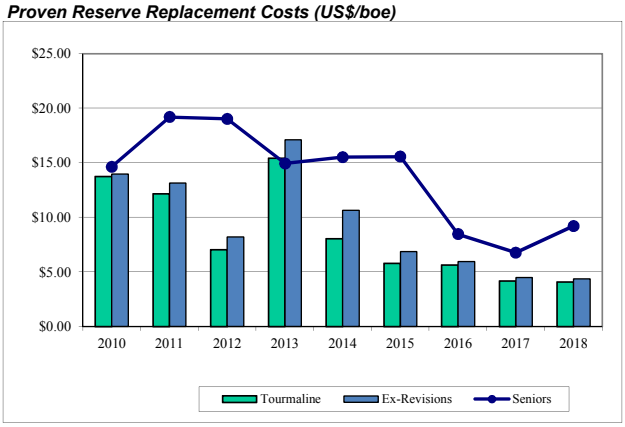
Capital Spending by Region (US$million)



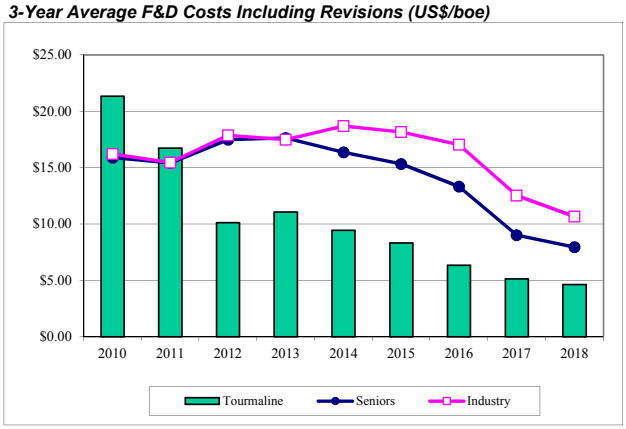
Proven Reserve Additions by Region (million boe)



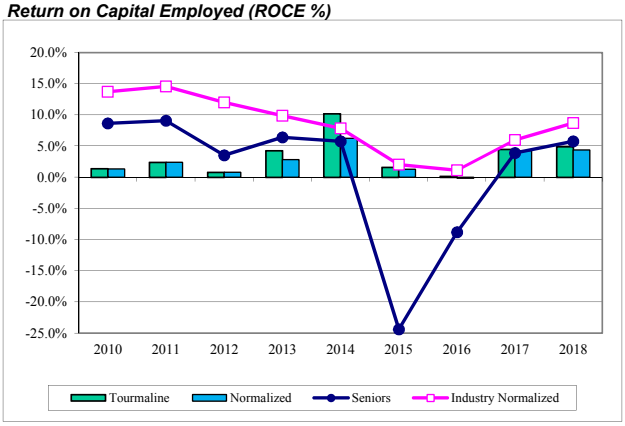
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

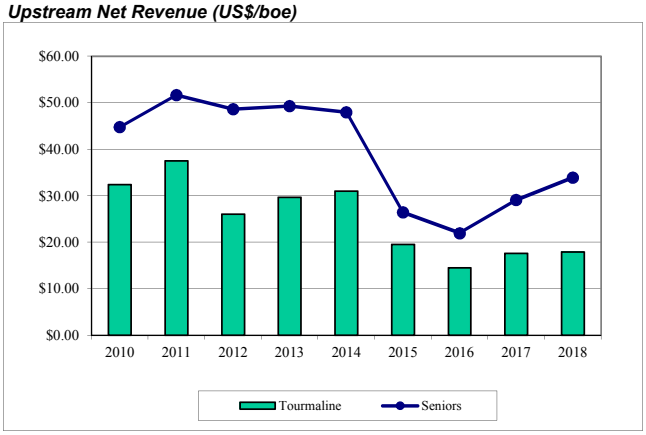
See pages F1 to F4 for analyst coverage.

Tourmaline Oil Corp. (TOU - TSX)

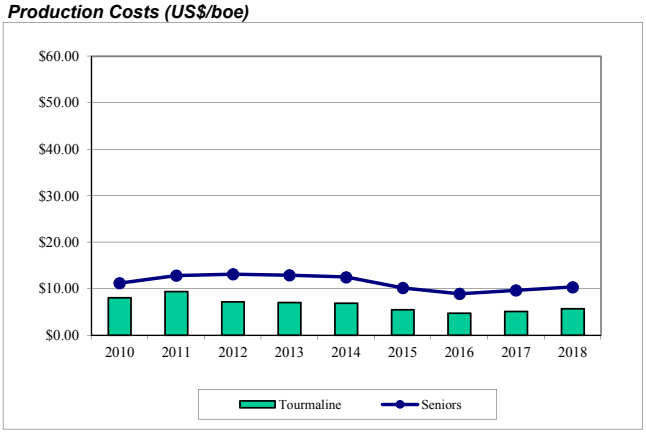
US$/boe, net

North America

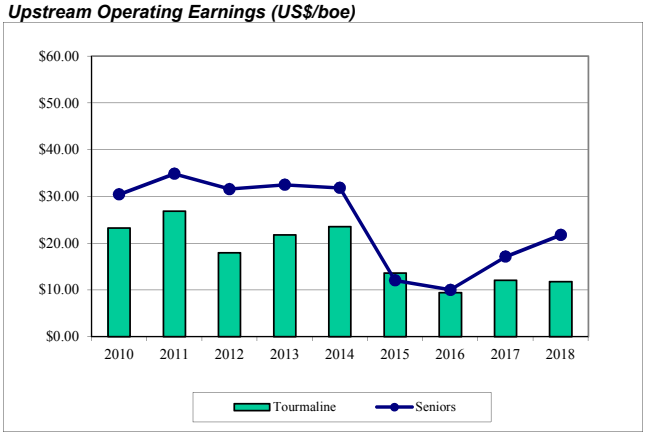
Upstream Net Revenue (US$/boe)



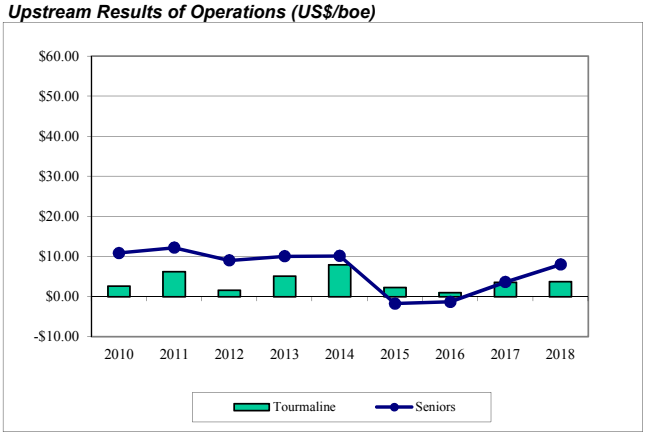
Production Costs (US$/boe)



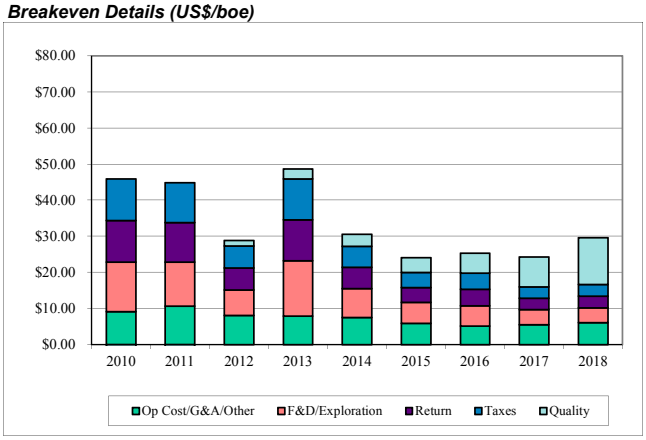
Upstream Operating Earnings (US$/boe)



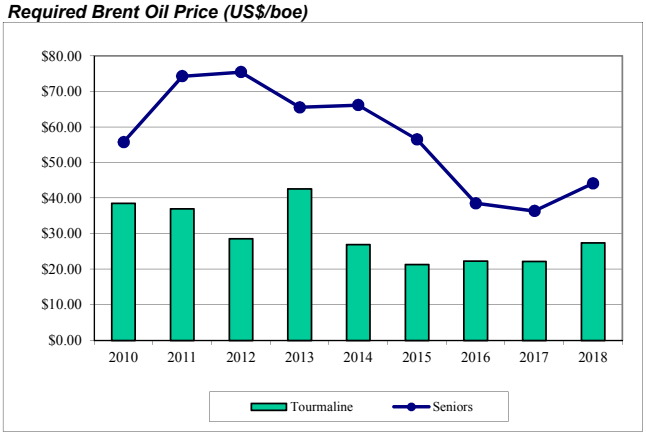
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Tourmaline Oil Corp. (TOU - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	28	174	323	412	681	1,140	805	813	1,208	1,257
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	3	32	27	16	25	32	197	13	272	367
Total Revenue and Other Income	-	31	206	350	427	707	1,172	1,002	826	1,480	1,624
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	9	51	88	117	170	253	283	294	418	512
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	18
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	3	7	12	15	20	23	20	23	31	37
Depreciation, Depletion and Amortization	-	20	123	160	243	346	467	541	503	597	616
Interest, net	-	0	1	6	13	15	26	35	37	41	44
Other	-	1	3	15	7	(56)	(217)	(3)	(4)	9	(40)
Earnings Before Income Tax	-	(2)	21	69	33	212	621	127	(27)	385	438
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	-	0	6	25	16	67	167	65	(2)	117	128
Total Income Taxes	-	0	6	25	16	67	167	65	(2)	117	128
Minority Interest	-	(0)	(0)	(1)	(1)	(2)	(11)	1	1	(0)	0
Earnings From Continuing Operations	-	(2)	14	43	16	144	443	63	(24)	267	310
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(2)	14	43	16	144	443	63	(24)	267	310
Preferred Stock Dividends	-	-	-								
Net Earnings to Common Shareholders	-	(2)	14	43	16	144	443	63	(24)	267	310

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	(2)	14	43	16	144	443	63	(24)	267	310
Charges and Credits Not Impacting Cash	-	20	129	185	259	413	634	606	501	714	744
Other	-	1	(12)	16	6	(45)	(235)	(3)	76	(52)	(46)
Cash Flow From Operations	-	19	131	244	280	512	841	666	553	930	1,008
Change in Working Capital / Other	-	(20)	9	(13)	(7)	(46)	(12)	(11)	(26)	(18)	(28)
Net Cash From Operating Activities	-	(0)	141	231	274	465	829	655	527	912	980
Total Capital Expenditures	-	(130)	(480)	(216)	(666)	(1,133)	(1,840)	(1,136)	(571)	(1,052)	(974)
Acquisitions, net	-	(310)	(312)	(108)	(76)	(145)	424	(67)	(890)	(33)	36
Other	-	49	59	(473)	(0)	146	222	(153)	(49)	31	58
Net Cash From Investing Activities	-	(391)	(733)	(797)	(742)	(1,132)	(1,194)	(1,356)	(1,509)	(1,053)	(879)
Net Change in Debt	-	(2)	(6)	63	247	223	271	283	106	99	(45)
Net Change in Common Stock	-	295	468	437	232	460	344	220	911	42	22
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	(78)
Other	-	-	-	-	(10)	(17)	(12)	(8)	(35)	-	-
Net Cash From Financing Activities	-	293	462	500	469	666	603	495	983	141	(101)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	(99)	(131)	(66)	(0)	-	238	(206)	-	0	-
Cash and Equivalents, Beginning of Year	-	275	194	66	(0)	(0)	(0)	206	-	-	-
Cash and Equivalents, End of Year	-	176	63	(0)	(0)	(0)	238	-	-	0	-

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tourmaline Oil Corp. (TOU - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	219	139	67	127	139	465	180	161	231	242
Net Property, Plant and Equipment	-	665	1,591	2,047	2,812	3,739	4,951	5,313	6,389	7,604	8,030
Other Assets	-	1	5	628	643	683	582	491	519	16	12
Total Assets	-	884	1,735	2,743	3,582	4,561	5,998	5,984	7,070	7,851	8,284
Total Current Liabilities	-	77	176	215	226	377	637	374	330	400	419
Long-term Debt	-	-	14	11	361	573	832	992	1,063	1,183	1,139
Deferred Income Taxes	-	1	25	109	176	257	382	381	360	497	636
Other Liabilities and Deferred Credits	-	6	13	145	83	82	112	140	203	207	246
Total Liabilities	-	84	228	481	846	1,290	1,963	1,887	1,956	2,287	2,440
Minority Interests	-	12	13	15	16	17	27	22	21	21	22
Common Shares	-	788	1,474	2,166	2,601	2,974	3,274	3,341	4,396	4,539	4,561
Contributed Surplus (Paid-in Capital)	-	2	8	48	71	89	113	135	143	171	195
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	(1)	12	33	48	190	620	599	554	833	1,066
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	-	789	1,494	2,247	2,720	3,254	4,007	4,075	5,093	5,543	5,822
Total Liabilities and Shareholders' Equity	-	884	1,735	2,743	3,582	4,561	5,998	5,984	7,070	7,851	8,284
Return on Capital Employed (ROCE)	**-**	**-0.3%**	**1.4%**	**2.4%**	**0.8%**	**4.3%**	**10.2%**	**1.6%**	**0.2%**	**4.5%**	**4.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	205	349	425	717	1,141	1,002	904	1,428	1,611	3,944	6,087
Production Costs	-	-	51	88	117	170	253	283	294	418	512	1,223	1,759
Exploration	-	-	0	0	0	0	0	0	0	0	0	0	0
DD&A	-	-	123	160	243	346	467	541	503	597	616	1,717	2,725
G&A/Other	-	-	11	33	35	-21	-169	51	56	81	40	177	60
Pre-tax Results Of Operations	-	-	19	68	30	222	589	127	51	333	443	827	1,543
Income Taxes	-	-	6	25	16	67	167	65	-2	117	128	242	474
Results Of Operations	-	-	13	44	14	155	422	62	53	216	315	584	1,069

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	205	349	425	717	1,141	1,002	904	1,428	1,611	3,944	6,087
Production Costs	-	-	51	88	117	170	253	283	294	418	512	1,223	1,759
Exploration	-	-	0	0	0	0	0	0	0	0	0	0	0
DD&A	-	-	123	160	243	346	467	541	503	597	616	1,717	2,725
G&A/Other	-	-	11	33	35	-21	-169	51	56	81	40	177	60
Pre-tax Results Of Operations	-	-	19	68	30	222	589	127	51	333	443	827	1,543
Income Taxes	-	-	6	25	16	67	167	65	-2	117	128	242	474
Results Of Operations	-	-	13	44	14	155	422	62	53	216	315	584	1,069

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Tourmaline Oil Corp. (TOU - TSX)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	-	-	$32.41	$37.52	$26.06	$29.66	$30.99	$19.51	$14.50	$17.59	$17.87	$16.87	$18.91
Production Costs	-	-	$8.10	$9.40	$7.18	$7.05	$6.87	$5.50	$4.71	$5.14	$5.67	$5.23	$5.46
Exploration	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	$19.52	$17.19	$14.88	$14.32	$12.69	$10.53	$8.07	$7.35	$6.84	$7.35	$8.47
G&A/Other	-	-	$1.05	$1.25	$0.90	$0.81	$0.61	$0.39	$0.37	$0.39	$0.41	$0.39	$0.41
Pre-tax Results Of Operations	-	-	$3.74	$9.68	$3.09	$7.48	$10.81	$3.09	$1.35	$4.71	$4.95	$3.91	$4.57
Income Taxes	-	-	$1.12	$3.48	$1.51	$2.35	$2.91	$0.77	$0.34	$1.18	$1.24	$0.98	$1.16
Results Of Operations	-	-	$2.62	$6.20	$1.59	$5.13	$7.91	$2.32	$1.01	$3.53	$3.72	$2.93	$3.41

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	-	-	$32.41	$37.52	$26.06	$29.66	$30.99	$19.51	$14.50	$17.59	$17.87	$16.87	$18.91
Production Costs	-	-	$8.10	$9.40	$7.18	$7.05	$6.87	$5.50	$4.71	$5.14	$5.67	$5.23	$5.46
Exploration	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	$19.52	$17.19	$14.88	$14.32	$12.69	$10.53	$8.07	$7.35	$6.84	$7.35	$8.47
G&A / Other	-	-	$1.05	$1.25	$0.90	$0.81	$0.61	$0.39	$0.37	$0.39	$0.41	$0.39	$0.41
Pre-tax Results of Operations	-	-	$3.74	$9.68	$3.09	$7.48	$10.81	$3.09	$1.35	$4.71	$4.95	$3.91	$4.57
Income Taxes	-	-	$1.12	$3.48	$1.51	$2.35	$2.91	$0.77	$0.34	$1.18	$1.24	$0.98	$1.16
Results of Operations	-	-	$2.62	$6.20	$1.59	$5.13	$7.91	$2.32	$1.01	$3.53	$3.72	$2.93	$3.41

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Tourmaline Oil Corp. (TOU - TSX)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	94.7	138.6	239.3	356.2	529.5	745.8	903.2	1,133.5	1,231.1	1,089.3	908.6
Liquids Production (b/d)	-	-	1,531	2,400	4,779	6,826	12,622	16,436	20,220	33,568	41,901	31,896	24,949
Total Production (boe/d)	-	-	17,311	25,506	44,667	66,190	100,867	140,740	170,762	222,483	247,085	213,443	176,387
% Gas Production	-	-	91%	91%	89%	90%	87%	88%	88%	85%	83%	85%	86%
% Oil Production	-	-	9%	9%	11%	10%	13%	12%	12%	15%	17%	15%	14%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	438.4	700.1	1,187.7	1,454.8	2,188.2	3,076.4	4,068.9	4,849.0	5,554.4	4,824.1	3,947.4
Closing Oil Reserves (mmbbls)	-	-	9.2	14.1	22.9	36.8	57.0	74.4	108.6	160.4	198.8	155.9	119.9
Closing Total Proven Reserves (mmboe)	-	-	82.3	130.8	220.9	279.3	421.8	587.2	786.8	968.6	1,124.5	959.9	777.7
% Gas Reserves	-	-	89%	89%	90%	87%	86%	87%	86%	83%	82%	84%	85%
% Oil Reserves	-	-	11%	11%	10%	13%	14%	13%	14%	17%	18%	16%	15%
Proven Reserve Life Index	-	-	13.1	14.1	13.5	11.6	11.5	11.4	12.6	11.9	12.5	12.4	12.0
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	306.2	314.9	569.9	403.6	912.5	1,115.1	1,317.1	1,183.1	1,073.6	3,573.7	5,601.3
Oil Additions (mmbbls)	-	-	6.7	5.9	10.3	15.6	23.8	22.7	39.3	63.1	51.0	153.4	199.9
Total Additions (mmboe)	-	-	57.7	58.4	105.3	82.9	175.9	208.6	258.8	260.3	229.9	749.0	1,133.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	25.0	41.7	56.8	70.5	118.8	147.5	106.4	230.8	208.5	545.7	812.1
Net Acquisitions	-	-	31.7	12.2	33.8	4.1	14.0	27.5	138.6	11.4	5.9	155.9	197.4
Revisions of Estimates	-	-	1.0	4.5	14.7	8.3	43.1	33.5	13.8	18.1	15.5	47.4	124.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	43.3%	71.3%	54.0%	85.1%	67.5%	70.7%	41.1%	88.7%	90.7%	72.9%	71.6%
Net Acquisitions	-	-	55.0%	21.0%	32.1%	4.9%	8.0%	13.2%	53.5%	4.4%	2.6%	20.8%	17.4%
Revisions of Estimates	-	-	1.7%	7.7%	14.0%	10.0%	24.5%	16.1%	5.3%	7.0%	6.7%	6.3%	10.9%
Additions as % of Production:													
Gas	-	-	886.2%	622.2%	652.3%	310.4%	472.2%	409.6%	399.5%	286.0%	238.9%	299.6%	337.8%
Oil	-	-	1194.6%	676.2%	591.3%	628.0%	517.1%	378.9%	532.3%	515.2%	333.2%	439.1%	439.1%
Total	-	-	913.4%	627.3%	645.8%	343.2%	477.8%	406.0%	415.2%	320.5%	254.9%	320.5%	352.1%
Additions as % of Reserves:													
Gas	-	-	69.9%	45.0%	48.0%	27.7%	41.7%	36.2%	32.4%	24.4%	19.3%	74.1%	141.9%
Oil	-	-	72.5%	42.1%	45.0%	42.5%	41.8%	30.5%	36.2%	39.4%	25.6%	98.4%	166.8%
Total	-	-	70.1%	44.7%	47.7%	29.7%	41.7%	35.5%	32.9%	26.9%	20.4%	78.0%	145.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	$28.7	$34.8	$13.0	$7.1	$7.3	$9.4	$30.5	$15.0	$26.2	$12.4	$53.7	$93.6
Exploration & Development	-	$101.1	$445.0	$587.9	$659.0	$1,125.7	$1,830.3	$1,105.9	$555.9	$1,025.3	$961.4	$2,542.6	$5,478.8
Net Acquisitions	-	$309.9	$312.4	$108.5	$76.0	$144.6	-$423.5	$66.6	$889.6	$33.1	-$36.4	$886.3	$529.3
Total Expenditures	-	$439.8	$792.3	$709.4	$742.1	$1,277.5	$1,416.1	$1,203.0	$1,460.6	$1,084.6	$937.3	$3,482.5	$6,101.7
Expenditures as % of Total (US$million):													
Land & Seismic	-	6.5%	4.4%	1.8%	1.0%	0.6%	0.7%	2.5%	1.0%	2.4%	1.3%	1.5%	1.5%
Exploration & Development	-	23.0%	56.2%	82.9%	88.8%	88.1%	129.2%	91.9%	38.1%	94.5%	102.6%	73.0%	89.8%
Net Acquisitions	-	70.5%	39.4%	15.3%	10.2%	11.3%	-29.9%	5.5%	60.9%	3.0%	-3.9%	25.4%	8.7%
Cashflow (US$million)	-	na	$140.7	$231.1	$273.6	$465.4	$829.1	$654.5	$526.5	$912.1	$979.8	$2,418.4	$3,902.0
Cashflow (US$/boe)	-	na	$22.26	$24.82	$16.78	$19.27	$22.52	$12.74	$8.45	$11.23	$10.86	$10.35	$12.12
Recycle Ratio	-	na	1.6x	2.0x	2.4x	1.3x	2.8x	2.2x	1.5x	2.7x	2.7x	2.2x	2.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	na	$18.47	$13.02	$9.31	$14.37	$11.37	$6.28	$4.75	$4.23	$4.35	$4.38	$5.95
Net Acquisition Costs	-	na	$9.84	$8.87	$2.25	$35.36	-$30.16	$2.42	$6.42	$2.90	-$6.18	$5.69	$2.68
All Sources (incl. revisions)	-	na	$13.73	$12.15	$7.05	$15.41	$8.05	$5.77	$5.64	$4.17	$4.08	$4.65	$5.38
Exploration & Development (excl. revisions)	-	na	$19.19	$14.42	$11.72	$16.06	$15.48	$7.70	$5.37	$4.56	$4.67	$4.76	$6.86
Net Acquisition Costs	-	na	$9.84	$8.87	$2.25	$35.36	-$30.16	$2.42	$6.42	$2.90	-$6.18	$5.69	$2.68
All Sources (excl. revisions)	-	na	$13.96	$13.16	$8.19	$17.12	$10.66	$6.87	$5.96	$4.48	$4.37	$4.96	$6.04

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tourmaline Oil Corp. (TOU - TSX)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	-	-	8.10	9.40	7.18	7.05	6.87	5.50	4.71	5.14	5.67	5.23	5.46
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	1.05	1.25	0.90	0.81	0.61	0.39	0.37	0.39	0.41	0.39	0.41
F&D Costs	-	-	13.73	12.15	7.05	15.41	8.05	5.77	5.64	4.17	4.08	4.65	5.38
Return on Capital	-	-	11.50	11.04	6.11	11.30	5.83	4.18	4.55	3.15	3.23	3.62	4.09
Income Taxes	-	-	4.95	6.19	5.80	5.19	2.14	1.39	1.52	1.05	1.08	1.21	1.39
Breakeven Oil Price	-	-	39.33	40.03	27.04	39.76	23.51	17.23	16.78	13.89	14.46	15.10	16.75
Quality Differential	-	-	(0.80)	(3.01)	1.54	2.83	3.40	4.08	5.50	8.31	12.99	8.93	6.85
Required Brent Price	-	-	38.53	37.02	28.58	42.59	26.92	21.30	22.28	22.20	27.45	24.03	23.60

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	-	-	8.10	9.40	7.18	7.05	6.87	5.50	4.71	5.14	5.67	5.23	5.46
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	1.05	1.25	0.90	0.81	0.61	0.39	0.37	0.39	0.41	0.39	0.41
F&D Costs	-	-	13.73	12.15	7.05	15.41	8.05	5.77	5.64	4.17	4.08	4.65	5.38
Return on Capital	-	-	11.50	11.04	6.11	11.30	5.83	4.18	4.55	3.15	3.23	3.62	4.09
Income Taxes	-	-	4.95	6.19	5.80	5.19	2.14	1.39	1.52	1.05	1.08	1.21	1.39
Breakeven Oil Price	-	-	39.33	40.03	27.04	39.76	23.51	17.23	16.78	13.89	14.46	15.10	16.75
Quality Differential	-	-	(0.80)	(3.01)	1.54	2.83	3.40	4.08	5.50	8.31	12.99	8.93	6.85
Required Brent Price	-	-	38.53	37.02	28.58	42.59	26.92	21.30	22.28	22.20	27.45	24.03	23.60

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Tourmaline Oil Corp. (TOU - TSX)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	19.30	27.23	25.84	20.78	14.48	11.48	10.01	11.78	12.27	11.48	11.84
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	2.50	3.62	3.23	2.40	1.29	0.80	0.78	0.88	0.88	0.85	0.90
F&D Costs (1-Year)	-	-	31.41	34.65	26.05	38.32	16.74	12.14	11.50	8.38	8.22	9.40	11.01
Return on Capital	-	-	27.07	32.32	22.38	29.65	12.28	8.89	9.49	6.47	6.58	7.45	8.52
Income Taxes	-	-	11.64	18.12	21.26	13.61	4.51	2.96	3.16	2.16	2.19	2.48	2.90
Breakeven Oil Price	**-**	**-**	**91.91**	**115.93**	**98.75**	**104.76**	**49.31**	**36.29**	**34.94**	**29.67**	**30.14**	**31.67**	**35.15**
Quality Differential	-	-	(1.91)	(8.71)	5.54	8.34	7.17	8.50	11.68	19.03	25.00	18.57	20.87
Required Brent Price	**-**	**-**	**90.00**	**107.22**	**104.29**	**113.10**	**56.47**	**44.79**	**46.62**	**48.70**	**55.14**	**50.24**	**56.02**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	19.30	27.23	25.84	20.78	14.48	11.48	10.01	11.78	12.27	11.48	11.84
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	2.50	3.62	3.23	2.40	1.29	0.80	0.78	0.88	0.88	0.85	0.90
F&D Costs (1-Year)	-	-	27.16	43.49	63.46	59.25	39.26	18.45	21.07	12.14	16.31	16.15	21.45
Return on Capital	-	-	23.44	40.52	54.41	46.20	28.66	13.48	17.39	9.40	13.06	12.91	16.59
Income Taxes	-	-	10.08	22.72	51.69	21.20	10.54	4.49	5.80	3.13	4.35	4.30	5.64
Breakeven Oil Price	**-**	**-**	**82.48**	**137.58**	**198.63**	**149.83**	**94.23**	**48.70**	**55.05**	**37.33**	**46.87**	**45.69**	**56.41**
Quality Differential	-	-	(1.91)	(8.71)	5.54	8.34	7.17	8.50	11.68	19.03	25.00	18.57	20.87
Required Brent Price	**-**	**-**	**80.56**	**128.87**	**204.17**	**158.17**	**101.40**	**57.20**	**66.73**	**56.36**	**71.87**	**64.26**	**77.28**

Source: BMO Capital Markets, Company Reports

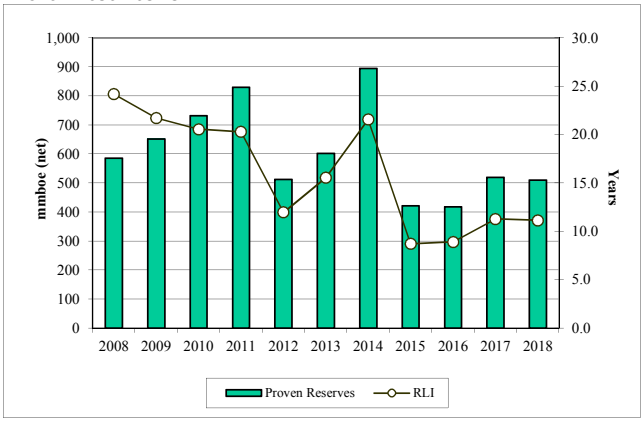
See pages F1 to F4 for analyst coverage.

Ultra Petroleum (UPL - NYSE) US$, net

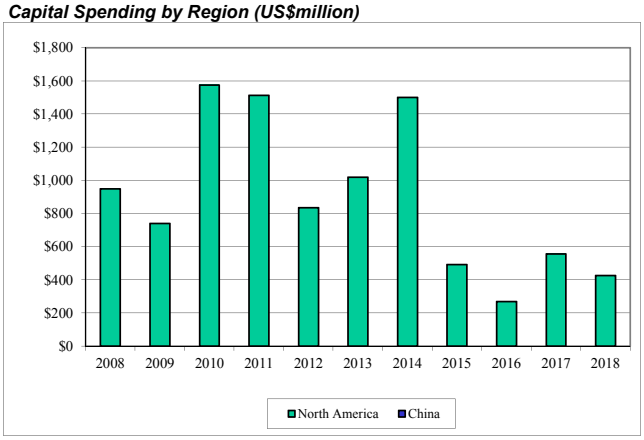
- Ultra Petroleum's results of operations were flat at $5.70/boe in 2018 from $5.84/boe last year.
- The company's one-year F&D cost came in higher at $10.47/boe in 2018 from $3.43/boe in 2017 (adjusted last year). On a realized oil:gas price ratio basis, F&D costs were $34.13/boe versus $9.55/boe last year, while the costs for PD reserves were $32.47/boe up from $52.16/boe.
- Ultra Petroleum's 2018 results imply a required Brent breakeven oil price of $96.52/boe on a realized ratio basis, while its PD costs imply a breakeven of $93.16/boe.
- Ultra reported ROCE of 12.9% in 2018 versus a normalized 2017 ROCE of 29.2%.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

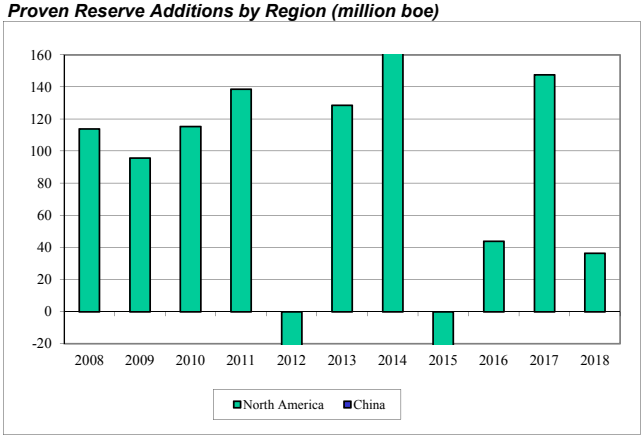
Proven Reserves vs RLI



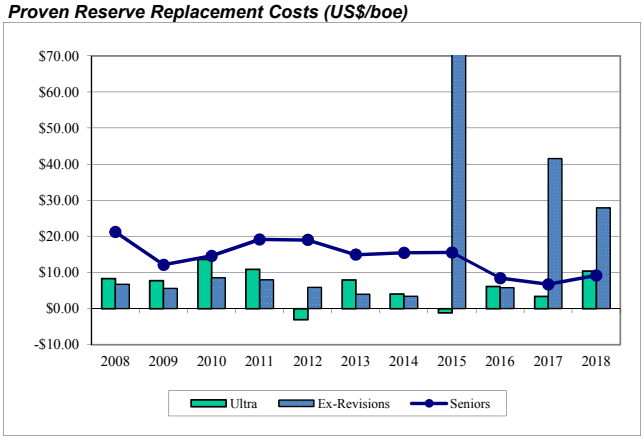
Capital Spending by Region (US$million)



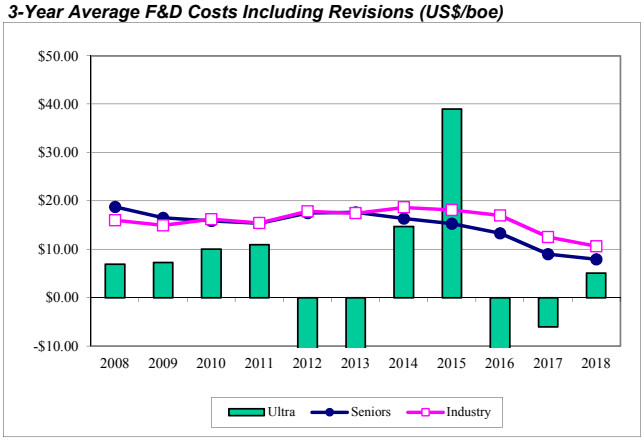
Proven Reserve Additions by Region (million boe)



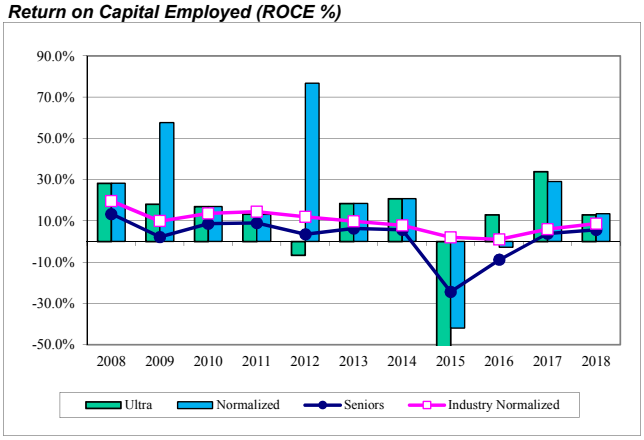
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

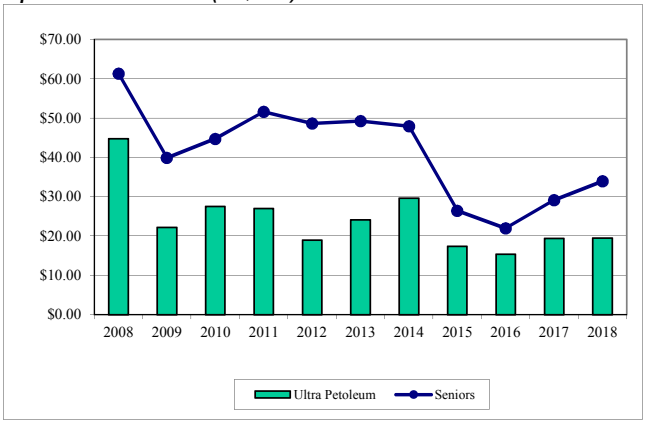
See pages F1 to F4 for analyst coverage.

Ultra Petroleum (UPL - NYSE)

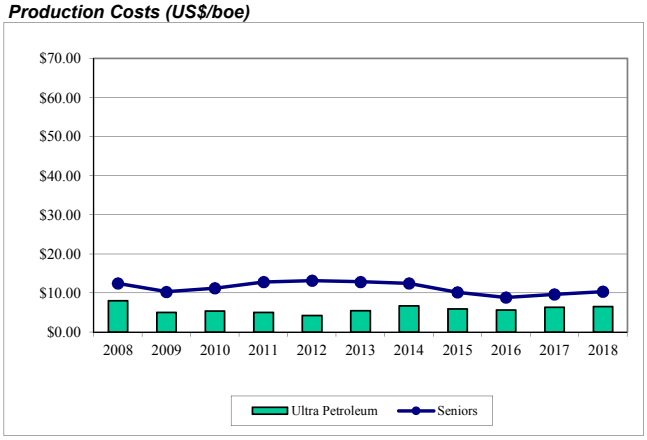
US$/boe, net

Worldwide

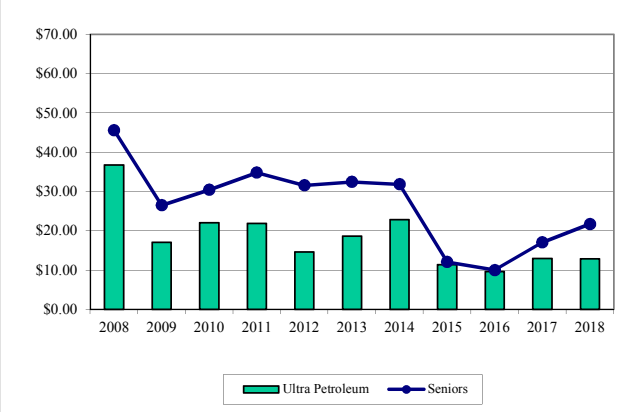
Upstream Net Revenue (US$/boe)



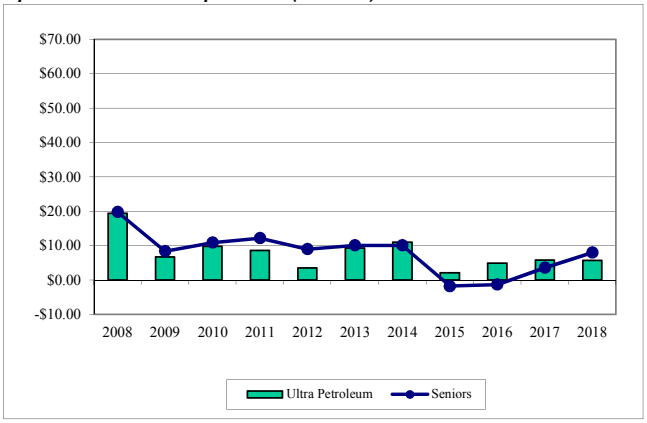
Production Costs (US$/boe)



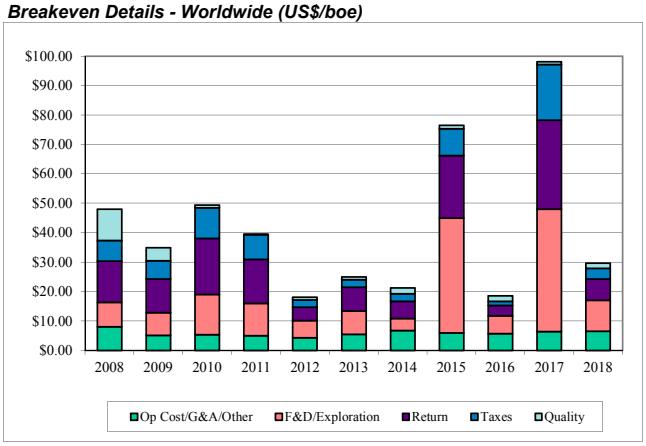
Upstream Operating Earnings (US$/boe)



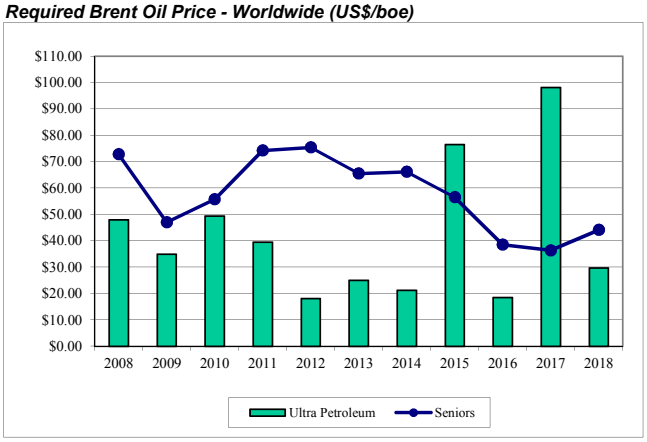
Upstream Results Of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



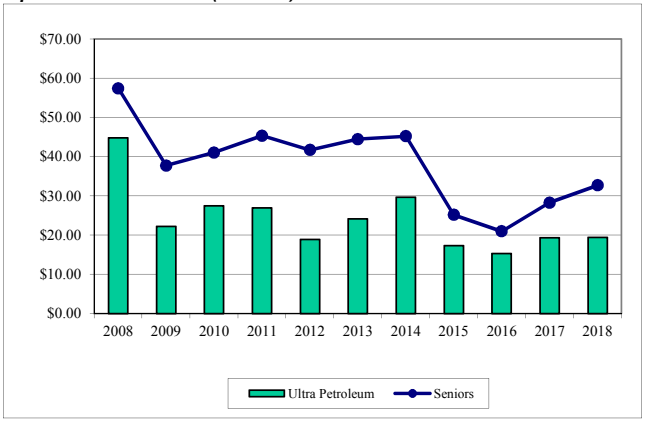
Source: BMO Capital Markets, Company Reports

Ultra Petroleum (UPL - NYSE)

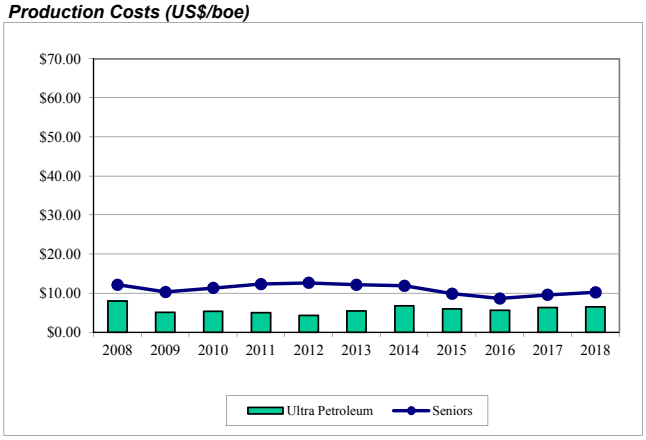
US$/boe, net

North America

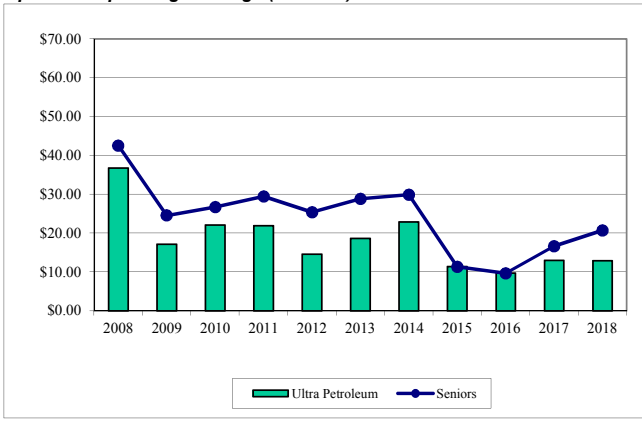
Upstream Net Revenue (US$/boe)



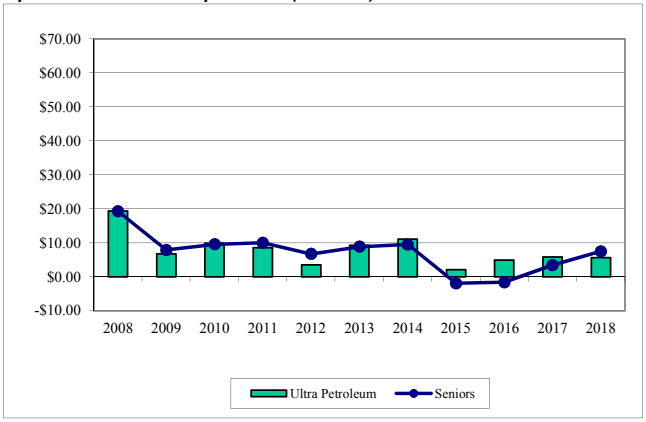
Production Costs (US$/boe)



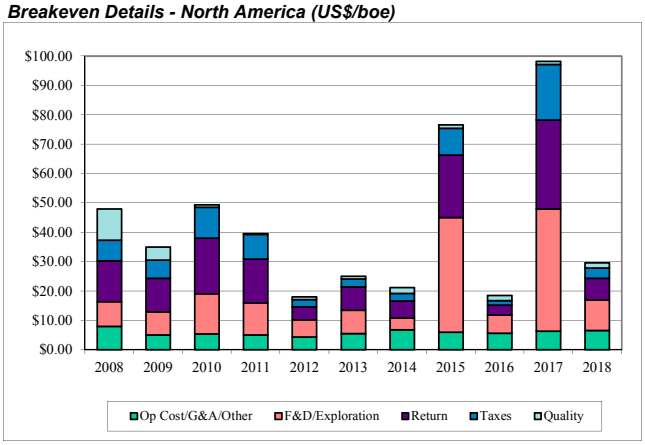
Upstream Operating Earnings (US$/boe)



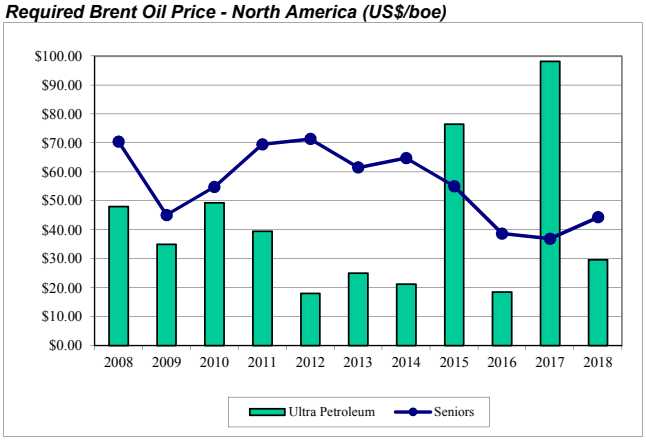
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Ultra Petroleum (UPL - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,084	667	979	1,102	810	933	1,230	839	721	892	892
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-					
Total Revenue and Other Income	1,084	667	979	1,102	810	933	1,230	839	721	892	892
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	241	211	257	270	269	295	221	200	180	205	210
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	17	20	24	26	14	13	19	7	9	40	25
Depreciation, Depletion and Amortization	185	202	242	346	389	243	293	401	125	162	204
Interest, net	21	37	49	63	88	101	126	172	67	361	148
Other	(33)	893	(316)	(314)	2,927	(14)	34	3,270	285	(40)	220
Earnings Before Income Tax	654	(696)	723	711	(2,877)	295	537	(3,212)	55	164	86
Current Income Taxes	5	9	5	6	12	(4)	(6)	(4)	(1)	(13)	0
Future Income Taxes	235	(254)	254	251	(713)	(0)	-	-	0	-	-
Total Income Taxes	241	(245)	259	258	(700)	(4)	(6)	(4)	(1)	(13)	0
Minority Interest	-	-	-	-						-	-
Earnings From Continuing Operations	414	(451)	464	453	(2,177)	298	543	(3,207)	56	177	85
Discontinued Operations/Extraordinary Items	0	733	(128)	(64)	1,932	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	414	282	336	389	(245)	298	543	(3,207)	56	177	85
Preferred Stock Dividends	-	-	-	-						-	-
Net Earnings to Common Shareholders	414	282	336	389	(245)	298	543	(3,207)	56	177	85

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	414	(451)	464	453	(2,177)	298	543	(3,207)	56	177	85
Charges and Credits Not Impacting Cash	420	985	496	598	2,649	243	294	3,545	125	162	204
Other	(87)	91	(212)	(91)	249	27	(139)	107	44	(435)	75
Cash Flow From Operations	746	624	748	960	721	569	698	445	226	(96)	364
Change in Working Capital / Other	94	(32)	77	74	(66)	(96)	14	71	82	161	(53)
Net Cash From Operating Activities	840	593	825	1,033	655	473	713	516	308	65	311
Total Capital Expenditures	(950)	(741)	(1,241)	(1,520)	(835)	(376)	(607)	(494)	(269)	(557)	(426)
Acquisitions, net	1	-	(404)	6	224	(650)	(863)	4	-	114	57
Other	34	(79)	116	105	34	(68)	(131)	(23)	(10)	7	(33)
Net Cash From Investing Activities	(915)	(821)	(1,529)	(1,409)	(577)	(1,094)	(1,601)	(513)	(279)	(435)	(402)
Net Change in Debt	280	225	765	343	(66)	633	895	12	369	(357)	94
Net Change in Common Stock	(279)	-	(24)	(36)	(7)	(5)	(9)	(3)	(0)	564	(2)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	77	3	20	9	(3)	(9)	1	(17)	-	(224)	-
Net Cash From Financing Activities	78	228	761	316	(76)	619	886	(8)	369	(17)	92
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	3	0	57	(60)	2	(2)	(2)	(5)	397	(387)	1
Cash and Equivalents, Beginning of Year	11	14	14	71	11	13	11	9	4	405	18
Cash and Equivalents, End of Year	14	14	71	11	13	11	9	4	401	17	19

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Ultra Petroleum (UPL - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	198	154	361	420	126	129	277	111	521	167	215
Net Property, Plant and Equipment	2,356	1,868	3,225	4,436	1,658	2,639	3,879	851	1,010	1,335	1,509
Other Assets	4	38	10	14	224	18	70	10	9	11	9
Total Assets	2,558	2,060	3,596	4,870	2,007	2,785	4,226	971	1,541	1,513	1,733
Total Current Liabilities	348	291	418	671	514	407	446	3,671	138	248	267
Long-term Debt	570	795	1,560	1,903	1,837	2,470	3,278	-	-	2,116	2,208
Deferred Income Taxes	504	239	421	635	-	-	-	-	-	-	-
Other Liabilities and Deferred Credits	46	86	58	67	234	239	290	292	4,331	303	307
Total Liabilities	1,467	1,412	2,457	3,276	2,585	3,117	4,014	3,963	4,469	2,668	2,782
Minority Interests	-									-	-
Common Shares	301	367	427	463	474	487	496	502	510	2,116	2,137
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-		
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	774	281	712	1,145	(1,052)	(817)	(278)	(3,494)	(3,438)	(3,271)	(3,186)
Other / Comprehensive Income (Loss)	16	-	-	(15)	(0)	(2)	(6)	(0)	(0)	(0)	(0)
Total Shareholders' Equity	1,091	648	1,139	1,594	(578)	(331)	212	(2,992)	(2,928)	(1,155)	(1,049)
Total Liabilities and Shareholders' Equity	2,558	2,060	3,596	4,870	2,007	2,785	4,226	971	1,541	1,513	1,733
Return on Capital Employed (ROCE)	**28.3%**	**18.1%**	**17.0%**	**13.2%**	**-6.6%**	**18.5%**	**20.8%**	**-146.1%**	**12.9%**	**33.8%**	**12.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	1,084	667	979	1,102	810	933	1,230	839	721	892	892	2,505	4,575
Production Costs	194	153	192	205	184	213	281	288	266	292	299	858	1,427
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	185	202	242	346	389	243	293	401	125	162	204	491	1,185
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	705	312	546	550	237	477	656	150	330	438	389	1,156	1,962
Income Taxes	235	110	194	197	85	116	197	45	99	168	128	395	637
Results Of Operations	470	203	352	353	152	361	460	105	231	269	261	761	1,326

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,084	667	979	1,102	810	933	1,230	839	721	892	892	2,505	4,575
Production Costs	194	153	192	205	184	213	281	288	266	292	299	858	1,427
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	185	202	242	346	389	243	293	401	125	162	204	491	1,185
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	705	312	546	550	237	477	656	150	330	438	389	1,156	1,962
Income Taxes	235	110	194	197	85	116	197	45	99	168	128	395	637
Results Of Operations	470	203	352	353	152	361	460	105	231	269	261	761	1,326

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	0	0	0	0	0	0	0	0	0	0	0	0	0
Production Costs	0	0	0	0	0	0	0	0	0	0	0	0	0
Exploration	0	0	0	0	0	0	0	0	0	0	0	0	0
DD&A	0	0	0	0	0	0	0	0	0	0	0	0	0
G&A/Other	0	0	0	0	0	0	0	0	0	0	0	0	0
Pre-tax Results Of Operations	0	0	0	0	0	0	0	0	0	0	0	0	0
Income Taxes	0	0	0	0	0	0	0	0	0	0	0	0	0
Results Of Operations	0	0	0	0	0	0	0	0	0	0	0	0	0

Note: Based on FASB 69 disclosure.
Source: BMO Capital Markets, Company Reports

Ultra Petroleum (UPL - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$44.78	$22.21	$27.51	$26.95	$18.91	$24.13	$29.64	$17.35	$15.36	$19.34	$19.47	$18.04	$20.00
Production Costs	$8.02	$5.09	$5.39	$5.02	$4.30	$5.50	$6.76	$5.96	$5.67	$6.33	$6.53	$6.18	$6.24
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$7.63	$6.72	$6.79	$8.47	$9.08	$6.29	$7.06	$8.30	$2.66	$3.51	$4.46	$3.54	$5.18
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$29.13	$10.40	$15.32	$13.45	$5.53	$12.34	$15.82	$3.10	$7.02	$9.50	$8.48	$8.32	$8.58
Income Taxes	$9.71	$3.65	$5.44	$4.83	$1.98	$3.00	$4.75	$0.93	$2.11	$3.65	$2.78	$2.84	$2.78
Results Of Operations	$19.42	$6.75	$9.88	$8.62	$3.54	$9.34	$11.07	$2.17	$4.91	$5.84	$5.70	$5.48	$5.80

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$44.78	$22.21	$27.51	$26.95	$18.91	$24.13	$29.64	$17.35	$15.36	$19.34	$19.47	$18.04	$20.00
Production Costs	$8.02	$5.09	$5.39	$5.02	$4.30	$5.50	$6.76	$5.96	$5.67	$6.33	$6.53	$6.18	$6.24
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$7.63	$6.72	$6.79	$8.47	$9.08	$6.29	$7.06	$8.30	$2.66	$3.51	$4.46	$3.54	$5.18
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results Of Operations	$29.13	$10.40	$15.32	$13.45	$5.53	$12.34	$15.82	$3.10	$7.02	$9.50	$8.48	$8.32	$8.58
Income Taxes	$9.71	$3.65	$5.44	$4.83	$1.98	$3.00	$4.75	$0.93	$2.11	$3.65	$2.78	$2.84	$2.78
Results Of Operations	$19.42	$6.75	$9.88	$8.62	$3.54	$9.34	$11.07	$2.17	$4.91	$5.84	$5.70	$5.48	$5.80

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Ultra Petroleum (UPL - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	379.6	471.8	563.3	648.9	683.0	616.2	626.1	736.9	724.0	712.4	713.4	716.6	702.6
Liquids Production (b/d)	3,073	3,616	3,655	3,858	3,512	3,277	9,340	9,679	7,978	7,603	6,690	7,424	8,258
Total Production (boe/d)	66,344	82,242	97,542	112,000	117,353	105,976	113,685	132,489	128,653	126,328	125,597	126,860	125,351
% Gas Production	95%	96%	96%	97%	97%	97%	92%	93%	94%	94%	95%	94%	93%
% Oil Production	5%	4%	4%	3%	3%	3%	8%	7%	6%	6%	5%	6%	7%
Proven Reserves:													
Gas Reserves (bcf)	3,355.8	3,736.6	4,200.2	4,778.6	2,966.4	3,409.7	4,831.2	2,336.3	2,321.6	2,956.0	2,921.8	2,733.1	3,073.4
Oil Reserves (mmbbls)	27.0	29.2	31.7	33.1	18.1	34.1	89.8	32.0	31.4	27.2	23.4	27.3	40.8
Total Proven Reserves (mmboe)	586.3	652.0	731.7	829.5	512.5	602.4	895.0	421.4	418.3	519.9	510.4	482.9	553.0
% Gas Reserves	95%	96%	96%	96%	96%	94%	90%	92%	92%	95%	95%	94%	93%
% Oil Reserves	5%	4%	4%	4%	4%	6%	10%	8%	8%	5%	5%	6%	7%
Proven Reserve Life Index	24.2	21.7	20.6	20.3	12.0	15.6	21.6	8.7	8.9	11.3	11.1	10.4	12.3
Proven Reserve Additions:													
Gas Additions (bcf)	651.7	553.0	669.2	815.2	-1,562.8	668.2	1,650.0	-2,226.0	249.6	894.4	226.2	1,370.2	794.3
Oil Additions (mmbbls)	5.3	3.5	3.8	2.8	-13.7	17.2	59.0	-54.2	2.3	-1.4	-1.3	(0.4)	4.4
Total Additions (mmboe)	113.9	95.7	115.4	138.7	-274.1	128.5	334.0	-425.2	43.9	147.7	36.4	227.9	136.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	140.4	132.3	183.2	189.9	142.1	246.3	178.9	3.1	46.0	9.5	15.3	70.8	252.7
Acquisitions	0.0	0.0	0.0	0.0	0.0	10.1	255.4	0.0	0.0	3.9	0.0	3.9	259.3
Dispositions	0.0	0.0	0.0	0.0	0.0	0.0	-39.9	0.0	0.0	-14.9	-4.3	(19.2)	(59.1)
Revisions of Estimates	(26.5)	(36.7)	(67.8)	(51.3)	(416.2)	(127.8)	(60.4)	(428.3)	(2.1)	149.1	25.4	172.5	(316.2)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	123.3%	138.3%	158.8%	137.0%	-51.8%	191.6%	53.6%	-0.7%	104.8%	6.4%	42.0%	31.0%	184.8%
Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	7.9%	76.5%	0.0%	0.0%	2.6%	0.0%	1.7%	189.6%
Dispositions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-11.9%	0.0%	0.0%	-10.1%	-11.9%	-8.4%	-43.2%
Revisions of Estimates	-23.3%	-38.3%	-58.8%	-37.0%	151.8%	-99.4%	-18.1%	100.7%	-4.8%	101.0%	69.9%	75.7%	-231.2%
Additions as % of Production:													
Gas	470.3%	321.2%	325.4%	344.2%	-626.8%	297.1%	722.0%	-827.6%	94.5%	344.0%	86.9%	174.6%	61.9%
Oil	472.4%	265.0%	287.3%	199.2%	-1065.7%	1436.3%	1732.2%	-1534.4%	78.1%	-51.0%	-53.3%	-5.4%	29.2%
Total	470.4%	318.7%	324.0%	339.2%	-640.0%	332.3%	805.0%	-879.3%	93.4%	320.2%	79.4%	164.1%	59.8%
Additions as % of Reserves:													
Gas	19.4%	14.8%	15.9%	17.1%	-52.7%	19.6%	34.2%	-95.3%	10.8%	30.3%	7.7%	50.1%	25.8%
Oil	19.6%	12.0%	12.1%	8.5%	-75.3%	50.3%	65.8%	-169.3%	7.3%	-5.2%	-5.6%	-1.6%	10.8%
Total	19.4%	14.7%	15.8%	16.7%	-53.5%	21.3%	37.3%	-100.9%	10.5%	28.4%	7.1%	47.2%	24.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$396.0	$102.2	$249.0	$49.0	$199.6	$184.0	$197.7	$18.2	$224.3	$510.7	$156.7	$891.7	$1,107.5
Development	$534.9	$606.0	$855.1	$1,372.8	$587.6	$186.8	$383.0	$461.5	$44.3	$35.9	$266.9	$347.1	$1,191.6
Acquisitions	$18.8	$33.2	$472.3	$92.0	$48.0	$649.0	$921.3	$13.8	$1.0	$10.5	$2.6	$14.1	$949.2
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	na	na
Total Expenditures	$949.7	$741.4	$1,576.5	$1,513.8	$835.2	$1,019.7	$1,501.9	$493.5	$269.6	$557.2	$426.2	$1,252.9	$3,248.3
Expenditures as % of Total:													
Exploration	41.7%	13.8%	15.8%	3.2%	23.9%	18.0%	13.2%	3.7%	83.2%	91.7%	36.8%	71.2%	34.1%
Development	56.3%	81.7%	54.2%	90.7%	70.4%	18.3%	25.5%	93.5%	16.4%	6.4%	62.6%	27.7%	36.7%
Acquisitions	2.0%	4.5%	30.0%	6.1%	5.7%	63.6%	61.3%	2.8%	0.4%	1.9%	0.6%	1.1%	29.2%
Cashflow (US$million)	$746.4	$624.4	$747.7	$959.6	$721.2	$569.0	$698.2	$444.9	$225.7	-$95.9	$364.2	$493.9	$1,637.0
Cashflow (US$/boe)	$30.83	$20.80	$21.00	$23.47	$16.84	$14.71	$16.83	$9.20	$4.81	-$2.08	$7.94	$3.56	$7.16
Recycle Ratio	3.7x	2.7x	1.5x	2.2x	-5.5x	1.9x	4.2x	-7.9x	0.8x	-0.6x	0.8x	0.7x	0.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$8.17	$7.40	$9.57	$10.25	-$2.87	$3.13	$4.90	-$1.13	$6.12	$3.45	$10.40	$5.09	-$36.22
Acquisition Costs	na	na	na	na	na	$64.16	$3.61	na	na	$2.71	na	na	na
All Sources (incl. revisions)	$8.34	$7.75	$13.67	$10.92	-$3.05	$7.93	$4.02	-$1.16	$6.14	$3.43	$10.47	$5.07	$16.59
Exploration & Development (excl. revisions)	$6.63	$5.35	$6.03	$7.49	$5.54	$1.51	$3.25	$156.15	$5.84	$57.53	$27.72	$17.50	$9.10
Acquisition Costs	na	na	na	na	na	$64.16	$3.61	na	na	$2.71	na	na	na
All Sources (excl. revisions)	$6.76	$5.60	$8.60	$7.97	$5.88	$3.98	$3.46	$160.66	$5.86	$41.62	$27.89	$16.78	$6.34
Geographically Segmented Costs													
North America	$8.34	$7.75	$13.67	$10.92	-$3.05	$7.93	$4.02	-$1.16	$6.14	$3.43	$10.47	$5.07	$20.83
China	na	na	na	na	na	na	na	na	na	na	na	na	na

Note: Reserve estimates reported after royalties.
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Ultra Petroleum (UPL - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	8.02	5.09	5.39	5.02	4.30	5.50	6.76	5.96	5.67	6.33	6.53	6.18	6.24
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	8.34	7.75	13.67	10.92	5.88	7.93	4.02	39.02	6.14	41.62	10.47	19.41	20.25
Return on Capital	13.98	11.48	19.01	14.98	4.46	8.04	5.90	21.27	3.41	30.30	7.30	12.73	15.87
Income Taxes	6.99	6.21	10.46	8.39	2.50	2.59	2.53	9.12	1.46	18.93	3.56	6.60	7.62
Breakeven Oil Price	37.32	30.53	48.53	39.31	17.13	24.06	19.21	75.37	16.69	97.18	27.85	44.92	49.98
Quality Differential	10.67	4.44	0.86	0.19	0.90	0.93	2.01	1.18	1.81	0.99	1.79	1.53	1.56
Required Brent Price	48.00	34.96	49.40	39.50	18.03	24.99	21.21	76.55	18.50	98.17	29.64	46.45	51.54

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	8.02	5.09	5.39	5.02	4.30	5.50	6.76	5.96	5.67	6.33	6.53	6.18	6.24
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs	8.34	7.75	13.67	10.92	5.88	7.93	4.02	39.02	6.14	41.62	10.47	19.41	20.25
Return on Capital	13.98	11.48	19.01	14.98	4.46	8.04	5.90	21.27	3.41	30.30	7.30	12.73	15.87
Income Taxes	6.99	6.21	10.46	8.39	2.50	2.59	2.53	9.12	1.46	18.93	3.56	6.60	7.62
Breakeven Oil Price	37.32	30.53	48.53	39.31	17.13	24.06	19.21	75.37	16.69	97.18	27.85	44.92	49.98
Quality Differential	10.67	4.44	0.86	0.19	0.90	0.93	2.01	1.18	1.81	0.99	1.79	1.53	1.56
Required Brent Price	48.00	34.96	49.40	39.50	18.03	24.99	21.21	76.55	18.50	98.17	29.64	46.45	51.54

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Ultra Petroleum (UPL - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.67	11.41	13.66	15.80	20.27	20.81	17.43	13.85	14.11	15.72	21.52	16.70	16.16
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	16.29	17.55	34.86	35.45	26.84	23.19	9.16	11.26	15.53	9.55	34.13	19.74	15.93
Return on Capital	27.44	25.98	48.91	49.86	21.25	25.40	13.90	6.16	8.99	6.69	23.50	12.88	12.57
Income Taxes	13.72	14.05	26.92	27.92	11.90	8.17	5.96	2.64	3.85	4.18	11.48	6.68	6.04
Breakeven Oil Price	**73.11**	**68.99**	**124.36**	**129.02**	**80.26**	**77.56**	**46.43**	**33.91**	**42.48**	**36.14**	**90.62**	**56.00**	**50.70**
Quality Differential	20.86	9.95	2.19	0.60	4.25	3.52	5.17	2.74	4.51	2.46	5.89	4.29	4.15
Required Brent Price	**93.96**	**78.94**	**126.55**	**129.62**	**84.51**	**81.08**	**51.60**	**36.65**	**46.99**	**38.60**	**96.52**	**60.29**	**54.85**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.67	11.41	13.66	15.80	20.27	20.81	17.43	13.85	14.11	15.72	21.52	16.70	16.16
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	22.73	32.79	71.98	53.67	13.81	55.12	20.74	23.39	15.53	52.16	32.47	30.44	28.86
Return on Capital	37.83	46.11	97.37	72.20	10.71	60.58	29.74	12.80	8.84	36.65	22.36	19.89	22.80
Income Taxes	18.91	24.94	53.59	40.44	6.00	19.49	12.74	5.48	3.79	22.90	10.92	10.31	10.95
Breakeven Oil Price	**95.14**	**115.25**	**236.60**	**182.11**	**50.78**	**155.99**	**80.65**	**55.52**	**42.27**	**127.43**	**87.27**	**77.34**	**78.77**
Quality Differential	20.86	9.95	2.19	0.60	4.25	3.52	5.17	2.74	4.51	2.46	5.89	4.29	4.15
Required Brent Price	**116.00**	**125.20**	**238.79**	**182.71**	**55.02**	**159.51**	**85.82**	**58.26**	**46.78**	**129.89**	**93.16**	**81.63**	**82.93**

Source: BMO Capital Markets, Company Reports

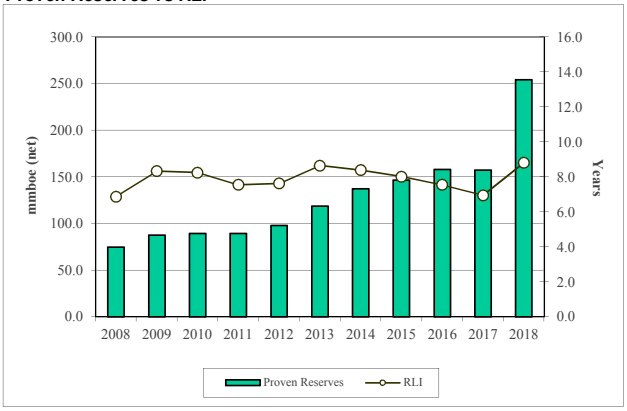
Vermilion Energy Inc. (VET - TSX)

US$, net

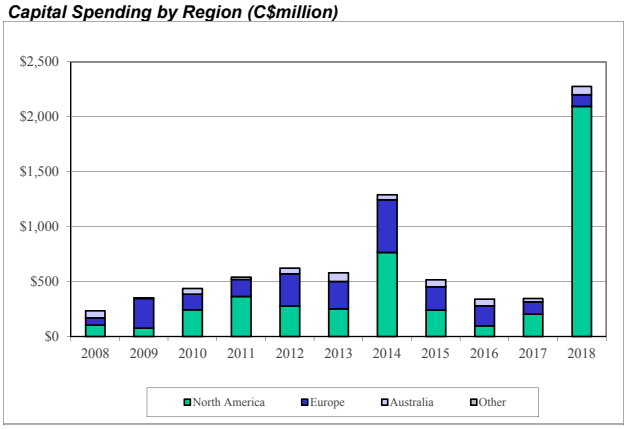
- Vermillion reported results of operations of $7.06/boe in 2018 versus $5.36/boe in 2017.
- One-year F&D costs came in at $14.22/boe, up from $13.57/boe last year. On a realized oil:gas price ratio basis, F&D costs dropped to $16.60/boe compared to $20.65/boe, while costs for PD reserves increased to $22.02/boe compared to $17.35/boe the previous year.
- Vermillion's 2018 results imply a required Brent breakeven oil price of $53.25/boe on a realized ratio basis on total proved reserves, and $62.97/boe on proved developed reserves.
- The company reported a return on capital of 8.4% in 2018 versus 3.1% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

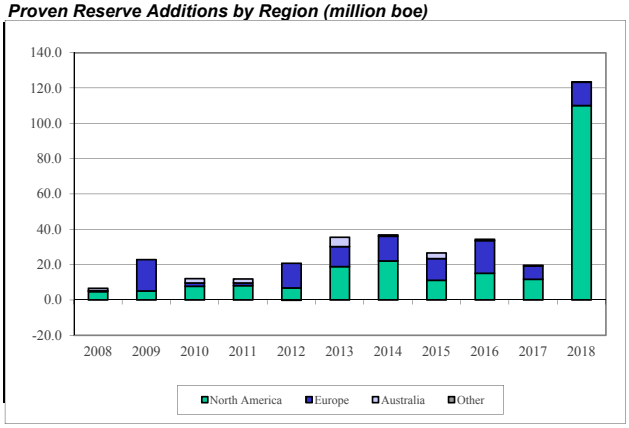
Proven Reserves vs RLI



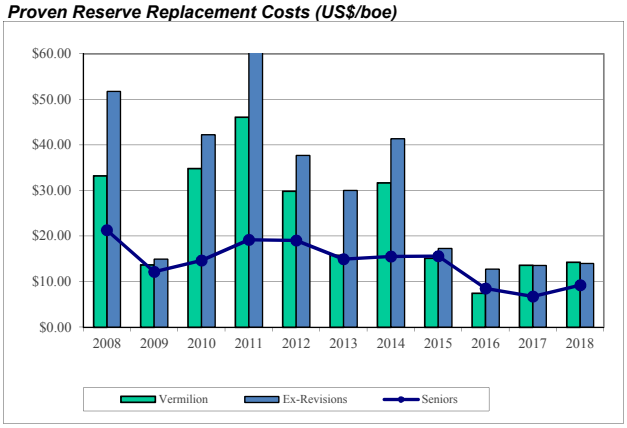
Capital Spending by Region (C$million)



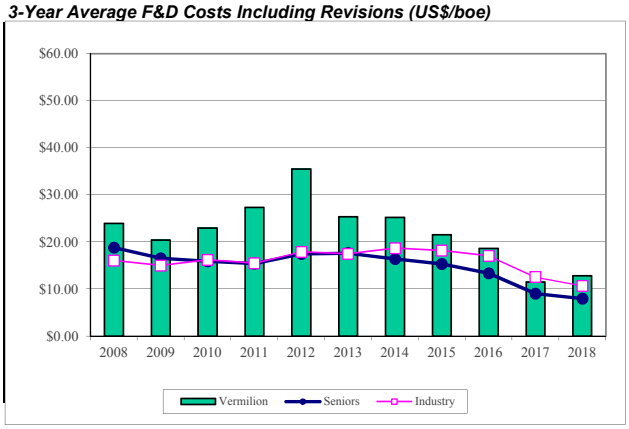
Proven Reserve Additions by Region (million boe)



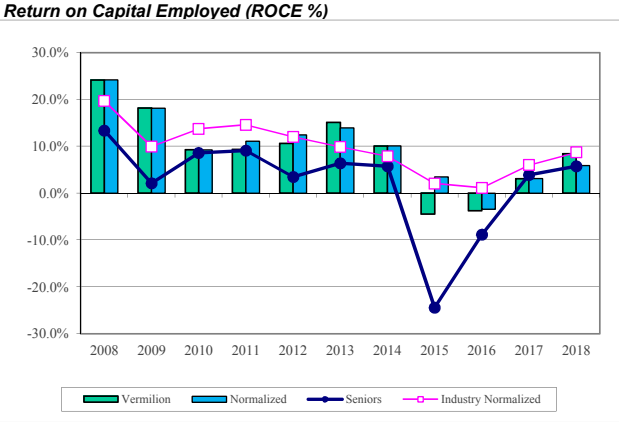
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



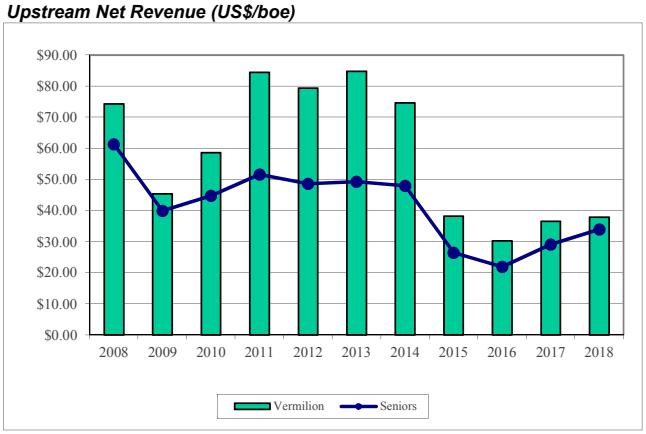
Source: BMO Capital Markets, Company Reports

Vermilion Energy Inc. (VET - TSX)

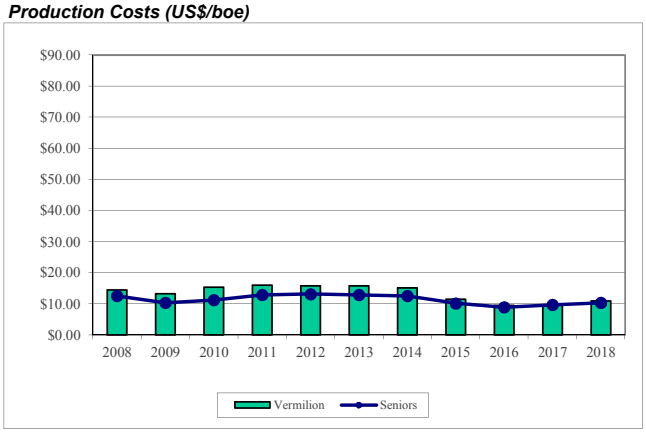
US$/boe, net

Worldwide

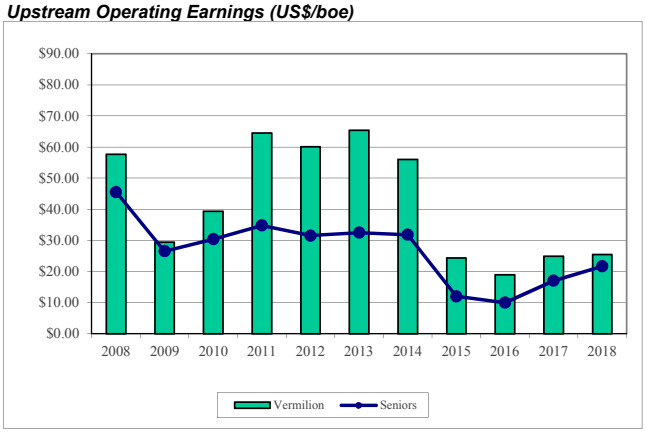
Upstream Net Revenue (US$/boe)



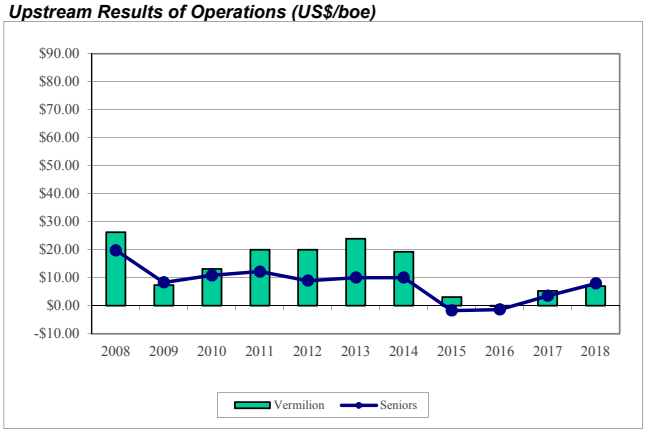
Production Costs (US$/boe)



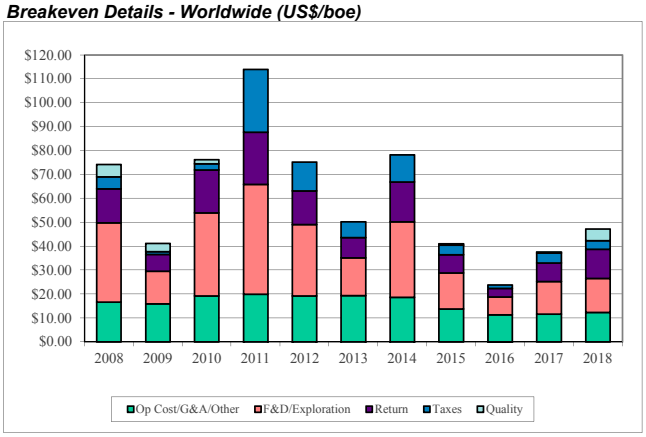
Upstream Operating Earnings (US$/boe)



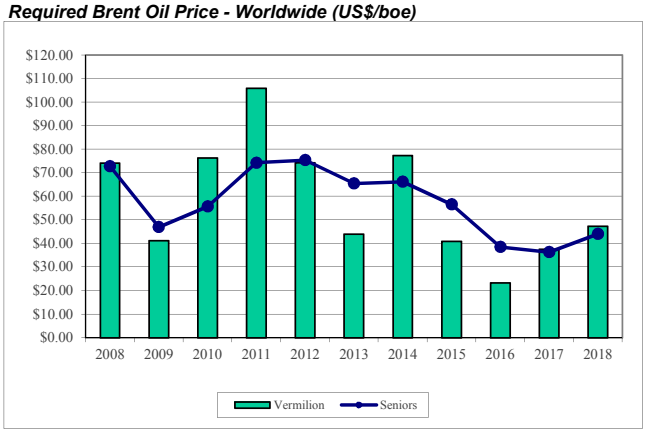
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Note: Vermilion does not disclose all necessary segmented information to determine netbacks or breakeven costs on a regional basis.
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Vermilion Energy Inc. (VET - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	822	478	626	989	1,032	1,171	1,188	684	626	790	1,178
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	(7)	(2)	58	66	(55)	3	(1)
Total Revenue and Other Income	822	478	626	989	1,025	1,169	1,246	751	571	793	1,176
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	158	140	166	190	203	218	249	210	198	220	316
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	23	27	42	45	44	48	56	42	40	42	40
Depreciation, Depletion and Amortization	241	219	264	239	296	313	386	359	399	379	470
Interest, net	15	12	13	25	28	37	45	47	43	44	56
Other	64	(30)	8	169	78	(35)	79	242	41	(10)	(4)
Earnings Before Income Tax	320	110	133	319	353	564	410	(168)	(169)	96	274
Current Income Taxes	79	26	71	222	182	212	142	(37)	15	25	34
Future Income Taxes (Recovery)	4	(27)	(54)	(47)	(19)	34	24	40	(63)	23	30
Total Income Taxes	83	(1)	17	175	163	246	166	3	(48)	48	64
Minority Interest	(21)	52	(8)	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	216	163	108	144	191	318	244	(170)	(121)	48	210
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	216	163	108	144	191	318	244	(170)	(121)	48	210
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	216	163	108	144	191	318	244	(170)	(121)	48	210

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	216	163	108	144	191	318	244	(170)	(121)	48	210
Charges and Credits Not Impacting Cash	245	192	210	258	300	371	431	537	403	372	501
Other	80	(76)	35	78	67	(41)	54	37	104	45	(63)
Cash Flow From Operations	541	279	353	480	558	648	729	404	386	465	647
Change in Working Capital / Other	81	(77)	56	(28)	(61)	36	(12)	(56)	(1)	(7)	(17)
Net Cash From Operating Activities	623	203	409	452	497	685	717	348	385	458	630
Total Capital Expenditures	(176)	(171)	(420)	(496)	(453)	(535)	(623)	(381)	(183)	(247)	(400)
Acquisitions, net	(45)	(141)	(6)	(51)	(304)	(24)	(359)	(23)	(74)	(21)	(213)
Other	(20)	113	77	(6)	17	(40)	11	(20)	(9)	0	43
Net Cash From Investing Activities	(241)	(199)	(349)	(554)	(740)	(600)	(971)	(424)	(267)	(268)	(570)
Net Change in Debt	(244)	(33)	139	(152)	266	337	178	108	(17)	(49)	179
Net Issuance of Shares	21	212	40	315	-	-	-	-	-	-	-
Net Change in Preferred Stock/Convertibles	-	-	-	223	-	-	-	-	-	-	-
Cash Dividends Paid	(149)	(145)	(183)	(209)	(151)	(164)	(173)	(100)	(79)	(154)	(255)
Other	(1)	-	-	-	-	-	-	(2)	(3)	-	-
Net Cash From Financing Activities	(374)	34	(4)	177	114	173	5	7	(99)	(203)	(76)
Effect of Exchange Rate on Cash	10	(10)	(11)	(1)	(3)	21	5	8	(3)	1	1
Net Increase/(Decrease) in Cash	18	28	45	75	(132)	279	(244)	(62)	16	(13)	(15)
Cash and Equivalents, Beginning of Year	45	59	96	163	235	99	353	94	31	48	36
Cash and Equivalents, End of Year	63	87	141	237	102	378	109	33	47	36	21

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Vermilion Energy Inc. (VET - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	227	226	333	441	321	571	306	223	171	202	332
Net Property, Plant and Equipment	1,328	1,416	1,973	2,233	2,564	2,852	3,525	2,957	2,801	2,799	4,338
Other Assets	142	194	201	93	193	180	141	117	116	64	170
Total Assets	1,696	1,836	2,507	2,767	3,078	3,602	3,972	3,296	3,088	3,065	4,840
Total Current Liabilities	236	192	331	497	356	337	331	394	220	280	435
Long-term Debt	186	141	294	378	642	962	1,121	911	1,029	980	1,458
Deferred Income Taxes	232	193	240	230	289	319	372	278	214	195	246
Other Liabilities and Deferred Credits	250	307	379	315	371	317	318	258	432	421	528
Total Liabilities	904	832	1,244	1,420	1,659	1,935	2,142	1,841	1,895	1,875	2,665
Minority Interests	80	89	-	-	-	-	-	-	-	-	-
Shareholder Capital	419	627	1,016	1,384	1,482	1,572	1,774	1,708	1,853	2,044	3,094
Contributed Surplus (Paid-in Capital)	28	27	39	57	70	73	83	85	77	65	61
Preferred Stock/Convertibles	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	265	262	209	(60)	(100)	(24)	(32)	(426)	(760)	(975)	(1,071)
Accumulated Cash Distributions / Other	-	-	-	(34)	(32)	46	5	89	23	55	91
Total Shareholder Equity	712	915	1,263	1,347	1,420	1,667	1,831	1,456	1,193	1,190	2,174
Total Liabilities and Shareholder Equity	1,696	1,836	2,507	2,767	3,078	3,602	3,972	3,296	3,088	3,065	4,840
Return on Capital Employed (ROCE)	**24.1%**	**18.2%**	**9.3%**	**9.3%**	**10.6%**	**15.1%**	**10.1%**	**-4.4%**	**-3.7%**	**3.1%**	**8.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$74.32	$45.35	$58.62	$84.47	$79.32	$84.77	$74.63	$38.17	$30.29	$36.57	$37.83	$35.26	$41.78
Production Costs	$14.47	$13.24	$15.34	$16.05	$15.78	$15.84	$15.19	$11.46	$9.45	$9.74	$10.93	$10.13	$11.13
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$22.13	$20.77	$24.32	$20.22	$23.05	$22.80	$23.54	$19.64	$19.07	$16.77	$16.29	$17.24	$18.61
G&A / Other	$2.15	$2.61	$3.84	$3.81	$3.41	$3.53	$3.41	$2.29	$1.91	$1.85	$1.39	$1.68	$2.05
Pre-tax Results of Operations	$35.57	$8.73	$15.12	$44.39	$37.08	$42.61	$32.49	$4.78	-$0.14	$8.21	$9.22	$6.20	$9.98
Income Taxes	$9.21	$1.31	$1.91	$24.31	$17.07	$18.59	$13.18	$1.67	-$0.04	$2.84	$2.16	$1.78	$3.23
Results of Operations	$26.36	$7.42	$13.21	$20.08	$20.01	$24.02	$19.31	$3.11	-$0.10	$5.36	$7.06	$4.41	$6.75

Source: BMO Capital Markets, Company Reports

Vermilion Energy Inc. (VET - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	71.2	65.8	69.9	73.7	72.3	77.7	101.4	124.2	180.0	197.4	231.0	202.8	166.8
Liquids Production (b/d)	17,969	17,936	18,063	20,161	23,144	24,676	27,971	29,415	27,302	29,052	40,581	32,312	30,864
Total Production (boe/d)	29,831	28,895	29,707	32,447	35,192	37,630	44,874	50,116	57,304	61,955	79,084	66,114	58,667
% Gas Production	40%	38%	39%	38%	34%	34%	38%	41%	52%	53%	49%	51%	47%
% Oil Production	60%	62%	61%	62%	66%	66%	62%	59%	48%	47%	51%	49%	53%
Proven Reserves:													
Closing Gas Reserves (bcf)	140.8	244.6	237.1	230.8	233.9	295.4	345.6	369.2	396.4	405.6	524.0	442.0	408.1
Closing Oil Reserves (mmbbls)	51.5	47.1	49.9	51.0	59.0	69.6	79.8	85.2	91.9	89.7	167.0	116.2	102.7
Closing Total Proven Reserves (mmboe)	74.9	87.9	89.4	89.5	98.0	118.9	137.4	146.8	158.0	157.3	254.4	189.9	170.8
% Gas Reserves	31%	46%	44%	43%	40%	41%	42%	42%	42%	43%	34%	39%	40%
% Oil Reserves	69%	54%	56%	57%	60%	59%	58%	58%	58%	57%	66%	61%	60%
Proven Reserve Life Index	6.9	8.3	8.2	7.5	7.6	8.6	8.4	8.0	7.6	9.2	13.3	10.0	9.3
Proven Reserve Additions:													
Gas Additions (bcf)	23.3	120.3	15.7	20.8	28.5	90.3	95.0	68.6	104.2	78.1	195.5	377.8	541.4
Oil Additions (mmbbls)	2.8	2.8	9.6	8.4	16.1	20.6	21.0	15.3	17.1	6.8	91.0	114.9	151.3
Total Additions (mmboe)	6.7	22.9	12.2	11.9	20.9	35.6	36.9	26.7	34.5	19.8	123.6	177.9	241.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	3.1	5.6	10.1	8.0	6.3	18.2	11.9	22.7	10.6	19.3	32.4	62.2	96.7
Net Acquisitions	1.2	15.3	0.0	-0.1	10.2	0.6	16.4	0.7	9.6	0.5	93.3	103.5	120.6
Revisions of Estimates	2.4	2.0	2.2	4.0	4.3	16.9	8.6	3.3	14.3	0.0	-2.1	12.2	24.2
Components as % of Total Additions:													
Extensions, Discoveries and Additions	46.1%	24.3%	82.4%	67.4%	30.3%	51.0%	32.2%	85.0%	30.6%	97.4%	26.2%	35.0%	40.1%
Net Acquisitions	18.0%	66.8%	0.0%	-1.0%	48.9%	1.7%	44.4%	2.6%	27.9%	2.6%	75.5%	58.2%	49.9%
Revisions of Estimates	35.9%	8.9%	17.6%	33.6%	20.8%	47.4%	23.4%	12.4%	41.5%	0.0%	-1.7%	6.9%	10.0%
Additions as % of Production:													
Gas	89.5%	501.3%	61.6%	77.2%	107.9%	318.4%	256.6%	151.3%	158.6%	108.4%	231.8%	170.1%	177.8%
Oil	42.8%	43.3%	145.9%	114.6%	190.8%	228.7%	206.1%	142.4%	171.9%	63.8%	614.7%	324.9%	268.5%
Total	61.4%	217.0%	112.8%	100.5%	162.4%	259.6%	225.1%	146.0%	164.9%	87.5%	428.3%	245.7%	281.9%
Additions as % of Reserves:													
Gas	16.5%	49.2%	6.6%	9.0%	12.2%	30.6%	27.5%	18.6%	26.3%	19.3%	37.3%	85.5%	132.6%
Oil	5.5%	6.0%	19.3%	16.5%	27.3%	29.6%	26.4%	17.9%	18.6%	7.5%	54.5%	98.9%	147.2%
Total	8.9%	26.1%	13.7%	13.3%	21.3%	30.0%	26.8%	18.2%	21.8%	12.6%	48.6%	93.7%	141.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$15.3	$15.6	$100.8	$80.5	$39.3	$19.7	$25.8	$9.4	$9.1	$27.1	$16.1	$52.3	$87.5
Exploration & Development	$161.0	$155.9	$318.9	$416.0	$413.5	$515.8	$597.0	$371.9	$174.1	$220.0	$383.9	$777.9	$1,746.8
Net Acquisitions	$45.5	$140.5	$6.5	$51.5	$169.8	$27.3	$545.1	$22.6	$74.4	$21.3	$1,358.0	$1,453.7	$2,021.4
Total Expenditures	$221.7	$312.0	$426.1	$548.0	$622.6	$562.7	$1,168.0	$403.9	$257.6	$268.4	$1,757.9	$2,283.9	$3,855.8
Expenditures as % of Total:													
Land & Seismic	6.9%	5.0%	23.7%	14.7%	6.3%	3.5%	2.2%	2.3%	3.5%	10.1%	0.9%	2.3%	2.3%
Exploration & Development	72.6%	50.0%	74.8%	75.9%	66.4%	91.7%	51.1%	92.1%	67.6%	82.0%	21.8%	34.1%	45.3%
Net Acquisitions	20.5%	45.0%	1.5%	9.4%	27.3%	4.8%	46.7%	5.6%	28.9%	7.9%	77.2%	63.6%	52.4%
Cashflow (C$million)	$541.4	$279.4	$353.0	$479.9	$558.1	$648.3	$729.0	$404.2	$385.9	$464.6	$647.3	$1,497.8	$2,631.0
Cashflow (C$/boe)	$49.72	$26.50	$32.55	$40.52	$43.45	$47.20	$44.51	$22.10	$18.45	$20.55	$22.42	$20.69	$24.57
Recycle Ratio	1.5x	1.9x	0.9x	0.9x	1.5x	3.0x	1.4x	1.5x	2.5x	1.5x	1.6x	1.6x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$32.16	$22.59	$34.31	$41.32	$42.44	$15.28	$30.37	$14.65	$7.36	$12.83	$13.20	$11.16	$15.17
Net Acquisition Costs	$37.81	$9.19	na	-$436.57	$16.65	$45.30	$33.31	$32.57	$7.73	$40.65	$14.55	$14.05	$16.77
All Sources (incl. revisions)	$33.18	$13.63	$34.83	$46.06	$29.84	$15.79	$31.68	$15.12	$7.47	$13.57	$14.22	$12.84	$15.97
Exploration & Development (excl. revisions)	$57.19	$30.87	$41.63	$61.94	$71.54	$29.48	$52.50	$16.80	$17.34	$12.83	$12.36	$13.35	$18.96
Net Acquisition Costs	$37.81	$9.19	na	-$436.57	$16.65	$45.30	$33.31	$32.57	$7.73	$40.65	$14.55	$14.05	$16.77
All Sources (excl. revisions)	$51.75	$14.96	$42.27	$69.38	$37.67	$29.99	$41.38	$17.27	$12.76	$13.56	$13.99	$13.79	$17.74
Geographically Segmented Costs													
North America	$20.71	$13.18	$29.92	$44.70	$39.73	$13.07	$31.18	$16.84	$4.93	$13.27	$14.69	$15.28	$17.58
Europe	$101.59	$13.42	$77.38	$113.15	$21.30	$21.22	$31.43	$13.57	$7.45	$11.94	$6.27	$9.36	$15.28
Australia	$44.72	na	$19.70	$9.29	-$1,288.15	$13.90	$49.63	$14.98	$52.71	$42.06	$167.50	$84.61	$42.09

Note: Reserve estimates reported after royalties.
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Vermilion Energy Inc. (VET - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	14.47	13.24	15.34	16.05	15.78	15.84	15.19	11.46	9.45	9.74	10.93	10.13	11.13
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.15	2.61	3.84	3.81	3.41	3.53	3.41	2.29	1.91	1.85	1.39	1.68	2.05
F&D Costs	33.18	13.63	34.83	46.06	29.84	15.79	31.68	15.12	7.47	13.57	14.22	12.84	15.97
Return on Capital	14.22	7.05	17.91	21.74	14.16	8.52	16.60	7.52	3.52	7.82	12.13	8.06	9.21
Income Taxes	4.97	1.24	2.60	26.31	12.08	6.59	11.33	4.05	1.39	4.14	3.71	3.25	4.41
Breakeven Oil Price	68.99	37.77	74.52	113.97	75.27	50.26	78.21	40.43	23.73	37.13	42.38	35.97	42.77
Quality Differential	5.18	3.46	1.74	(8.08)	(1.05)	(6.26)	(0.94)	0.55	(0.41)	0.39	4.87	1.62	0.89
Required Brent Price	74.17	41.23	76.26	105.89	74.22	43.99	77.27	40.98	23.33	37.52	47.25	37.58	43.66

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	14.47	13.24	15.34	16.05	15.78	15.84	15.19	11.46	9.45	9.74	10.93	10.13	11.13
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.15	2.61	3.84	3.81	3.41	3.53	3.41	2.29	1.91	1.85	1.39	1.68	2.05
F&D Costs	33.18	13.63	34.83	46.06	29.84	15.79	31.68	15.12	7.47	13.57	14.22	12.84	15.97
Return on Capital	14.22	7.05	17.91	21.74	14.16	8.52	16.60	7.52	3.52	7.82	12.13	8.06	9.21
Income Taxes	4.97	1.24	2.60	26.31	12.08	6.59	11.33	4.05	1.39	4.14	3.71	3.25	4.41
Breakeven Oil Price	68.99	37.77	74.52	113.97	75.27	50.26	78.21	40.43	23.73	37.13	42.38	35.97	42.77
Quality Differential	5.18	3.46	1.74	(8.08)	(1.05)	(6.26)	(0.94)	0.55	(0.41)	0.39	4.87	1.62	0.89
Required Brent Price	74.17	41.23	76.26	105.89	74.22	43.99	77.27	40.98	23.33	37.52	47.25	37.58	43.66

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Vermilion Energy Inc. (VET - TSX)

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.47	16.42	19.95	20.90	20.09	20.03	19.77	14.38	12.94	13.47	14.88	13.88	14.90
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.60	3.23	4.99	4.96	4.34	4.46	4.44	2.88	2.61	2.56	1.89	2.31	2.75
F&D Costs (1-Year)	44.25	24.66	39.86	56.05	34.80	21.23	43.04	19.15	10.08	20.65	16.60	15.81	20.01
Return on Capital	19.90	12.14	19.73	25.43	15.76	10.87	21.79	9.55	5.11	9.55	10.16	8.32	10.37
Income Taxes	6.96	2.14	2.86	30.78	13.44	8.41	14.86	5.14	2.02	5.06	3.10	3.36	4.97
Breakeven Oil Price	**91.17**	**58.60**	**87.39**	**138.11**	**88.43**	**65.00**	**103.90**	**51.11**	**32.76**	**51.29**	**46.63**	**43.68**	**53.00**
Quality Differential	6.25	4.28	2.27	(10.52)	(1.33)	(7.92)	(1.23)	0.68	(0.56)	0.54	6.62	2.20	1.21
Required Brent Price	**97.42**	**62.89**	**89.66**	**127.60**	**87.09**	**57.08**	**102.68**	**51.79**	**32.21**	**51.83**	**53.25**	**45.88**	**54.21**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.47	16.42	19.95	20.90	20.09	20.03	19.77	14.38	12.94	13.47	14.88	13.88	14.90
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.60	3.23	4.99	4.96	4.34	4.46	4.44	2.88	2.61	2.56	1.89	2.31	2.75
F&D Costs (1-Year)	43.25	59.18	68.87	67.00	37.33	36.05	54.84	13.53	11.11	17.35	22.02	19.27	23.77
Return on Capital	19.45	29.01	34.11	30.21	17.06	18.46	27.68	6.74	5.63	8.09	13.46	10.19	12.32
Income Taxes	6.80	5.12	4.94	36.57	14.55	14.28	18.89	3.63	2.22	4.28	4.11	4.12	5.90
Breakeven Oil Price	**89.57**	**112.97**	**132.85**	**159.64**	**93.37**	**93.28**	**125.62**	**41.15**	**34.52**	**45.75**	**56.35**	**49.76**	**59.63**
Quality Differential	6.25	4.28	2.27	(10.52)	(1.33)	(7.92)	(1.23)	0.68	(0.56)	0.54	6.62	2.20	1.21
Required Brent Price	**95.82**	**117.25**	**135.12**	**149.13**	**92.03**	**85.36**	**124.39**	**41.84**	**33.96**	**46.29**	**62.97**	**51.96**	**60.84**

Source: BMO Capital Markets, Company Reports

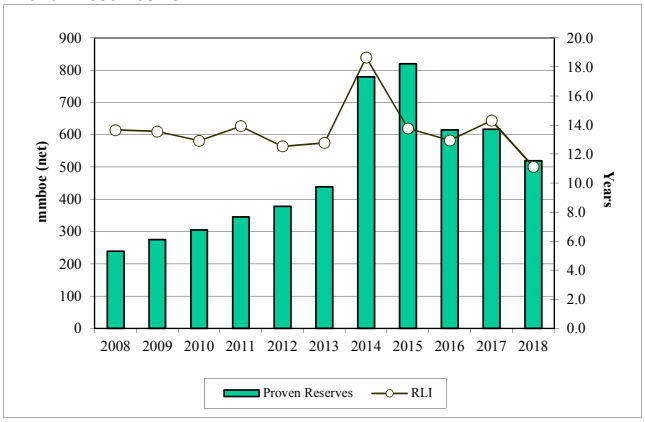
See pages F1 to F4 for analyst coverage.

Whiting Petroleum (WLL - NYSE) US$, net

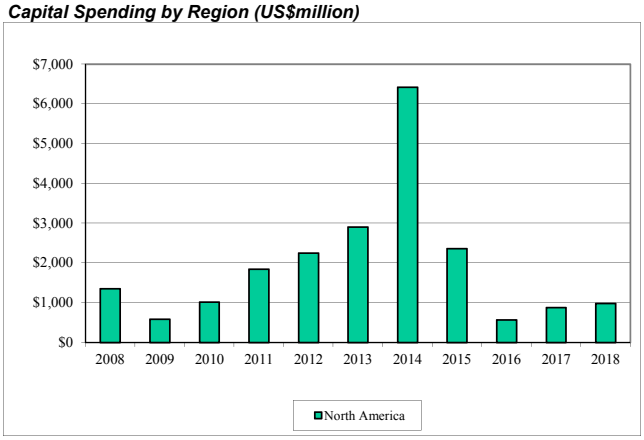
- Whiting reported results from operations of $9.08/boe in 2018 from a loss of $3.06/boe in 2017.
- One-year F&D costs were not meaningful in 2018 due to negative revisions. The company's F&D costs ex-revisions were $16.31/boe compared to $14.88/boe last year. On a realized oil:gas price ratio basis, F&D costs jumped to $19.50/boe from $17.94/boe in 2017, while the costs for PD reserves rose slightly to $15.93/boe from $15.74/boe the previous year.
- Whiting's 2018 results imply a required Brent breakeven oil price of $75.71/boe on total proved reserves, and $68.95/boe on proved developed costs.
- The company reported a ROCE of 7.6% in in 2018 versus a normalized loss of 2.6% in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

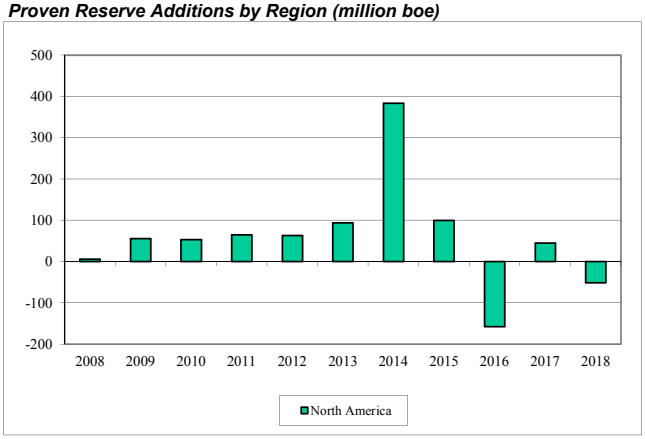
Proven Reserves vs RLI



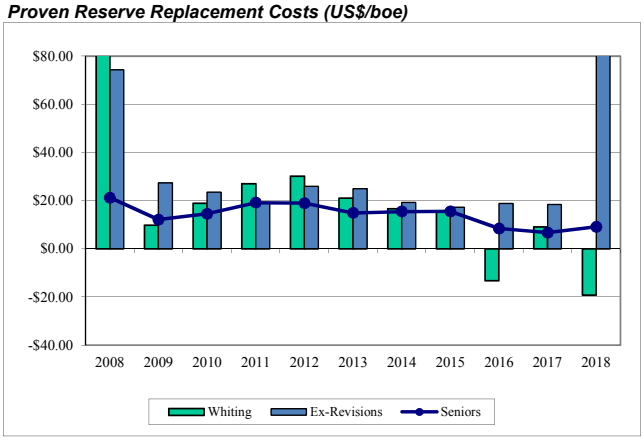
Capital Spending by Region (US$million)



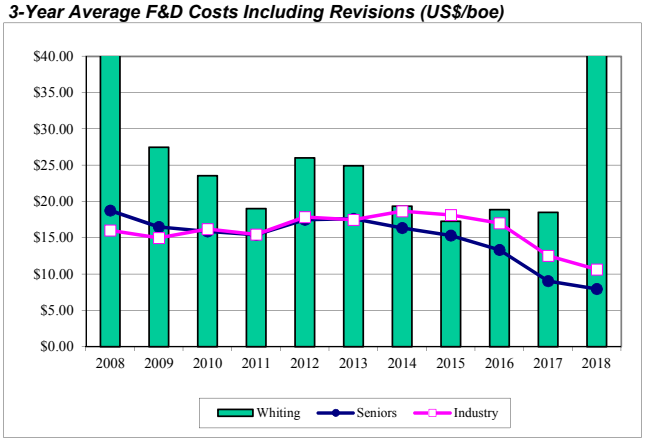
Proven Reserve Additions by Region (million boe)



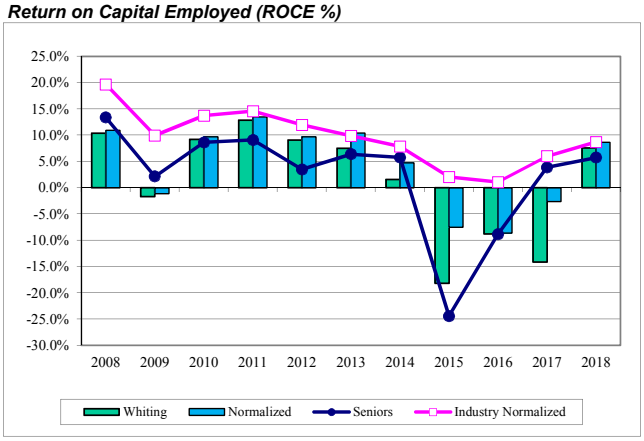
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

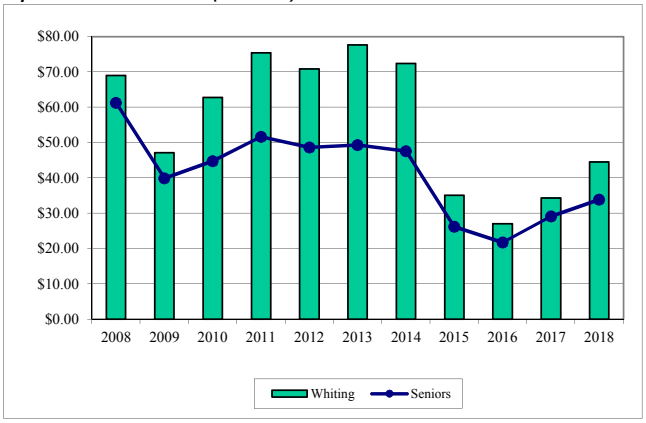
See pages F1 to F4 for analyst coverage.

Whiting Petroleum (WLL - NYSE)

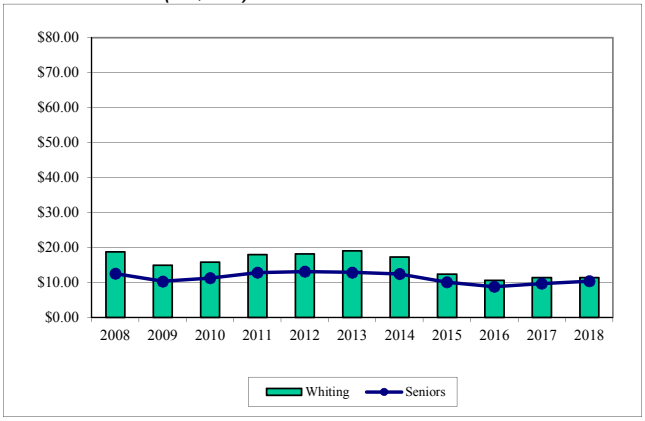
US$/boe, net

North America

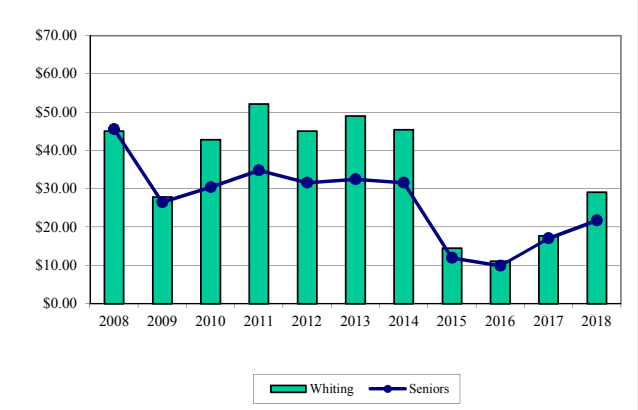
Upstream Net Revenue (US$/boe)



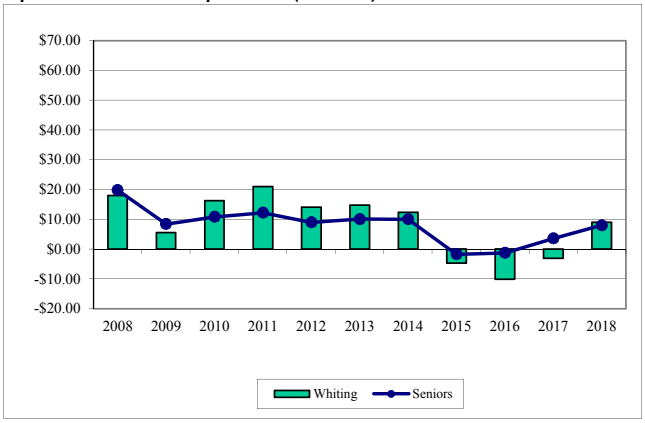
Production Costs (US$/boe)



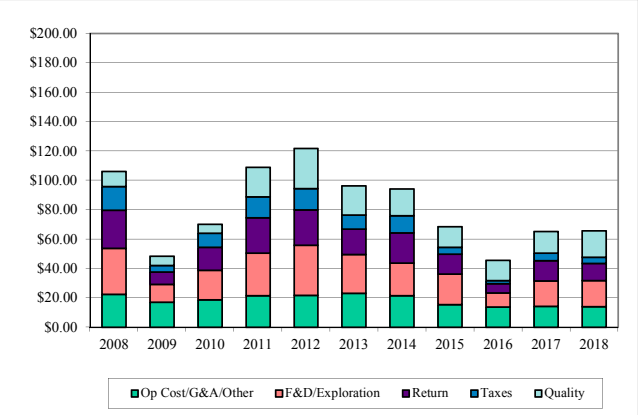
Upstream Operating Earnings (US$/boe)



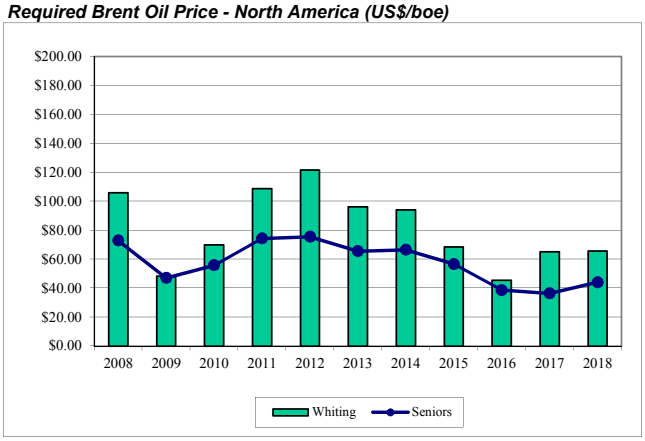
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Whiting Petroleum (WLL - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,316	918	1,475	1,860	2,138	2,667	3,025	2,092	1,285	1,481	2,081
Midstream / Downstream Revenue	-	-	-	-							
Other	(94)	62	41	39	36	162	60	(42)	(169)	(123)	(17)
Total Revenue and Other Income	1,222	979	1,516	1,899	2,173	2,828	3,085	2,051	1,116	1,359	2,064
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	329	302	372	445	548	656	750	738	504	490	532
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	29	47	33	46	120	186	225	320	108	101	67
General and Administrative	62	42	65	85	109	138	177	173	147	124	123
Depreciation, Depletion and Amortization	277	395	394	468	685	892	1,090	1,243	1,172	949	781
Interest, net	65	65	59	63	75	113	171	334	558	191	197
Other	51	292	52	13	(25)	272	528	2,236	55	1,223	19
Earnings Before Income Tax	409	(163)	541	780	662	572	144	(2,993)	(1,427)	(1,721)	344
Current Income Taxes	2	0	5	4	(1)	1	3	(0)	(7)	(7)	-
Future Income Taxes	154	(56)	200	285	249	205	77	(774)	(80)	(476)	1
Total Income Taxes	157	(56)	205	289	248	206	79	(774)	(88)	(483)	1
Minority Interest	-	-			0	0	0	0	0	0	-
Earnings From Continuing Operations	252	(107)	337	491	414	366	65	(2,219)	(1,339)	(1,238)	342
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	252	(107)	337	491	414	366	65	(2,219)	(1,339)	(1,238)	342
Preferred Stock Dividends	-	(10)	64	1	(1)	1	-	-	-	-	-
Net Earnings to Common Shareholders	252	(97)	273	490	415	366	65	(2,219)	(1,339)	(1,238)	342

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	252	(107)	337	491	414	366	65	(2,219)	(1,339)	(1,238)	342
Charges and Credits Not Impacting Cash	432	357	598	758	952	1,125	1,192	479	1,091	473	783
Other	31	245	3	(47)	(18)	193	678	2,738	790	1,465	(96)
Cash Flow From Operations	715	495	937	1,203	1,348	1,685	1,935	998	542	700	1,029
Change in Working Capital / Other	48	(41)	61	(11)	53	60	(120)	54	53	(123)	63
Net Cash From Operating Activities	763	454	997	1,192	1,401	1,745	1,815	1,051	595	577	1,092.003
Total Capital Expenditures	(1,331)	(604)	(924)	(1,804)	(2,171)	(2,395)	(2,888)	(2,484)	(544)	(852)	(957)
Acquisitions, net	1	80	9	69	69	546	62	515	313	930	5
Other	194	-	-	(25)	322	(53)	(34)	(13)	8	(5)	(1)
Net Cash From Investing Activities	(1,135)	(524)	(915)	(1,760)	(1,780)	(1,902)	(2,861)	(1,982)	(223)	73	(953)
Net Change in Debt	-	311	(44)	(6)	420	850	475	(190)	(250)	162	(990)
Net Change in Common Stock	-	235	-	-	-	-	-	1,111	-	-	-
Net Change in Preferred Stock	-	(10)	(16)	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	(1)	(1)	(1)	-	-	-	-	-
Other	367	(463)	(15)	572	(11)	(37)	(51)	(53)	(65)	(6)	(15)
Net Cash From Financing Activities	367	72	(76)	565	408	812	424	869	(315)	156	(1,005)
Effect of Exchange Rate on Cash	(0)	-	-	-	-	-	-	-	-	0	-
Net Increase/(Decrease) in Cash	(5)	2	7	(3)	29	655	(621)	(62)	57	806	(866)
Cash and Equivalents, Beginning of Year	15	10	12	19	16	45	699	78	16	73	879
Cash and Equivalents, End of Year	10	12	19	16	45	699	78	16	73	879	14

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Whiting Petroleum (WLL - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	217	176	234	299	384	1,070	843	535	623	1,190	398
Net Property, Plant and Equipment	3,735	3,798	4,355	5,639	6,764	7,595	12,143	10,750	9,143	7,183	7,326
Other Assets	77	55	60	108	124	169	1,034	104	110	30	35
Total Assets	4,029	4,030	4,649	6,046	7,272	8,833	14,020	11,389	9,876	8,403	7,760
Total Current Liabilities	351	283	459	567	637	778	1,209	600	478	1,553	537
Long-term Debt	1,240	780	800	1,380	1,800	2,654	5,629	5,198	3,535	2,765	2,792
Deferred Income Taxes	391	341	539	824	1,064	1,278	1,231	594	476	-	1
Other Liabilities and Deferred Credits	238	356	319	246	319	287	249	239	238	166	159
Total Liabilities	2,220	1,759	2,117	3,016	3,819	4,997	8,316	6,630	4,727	4,484	3,489
Minority Interests	-	-	-	8	8	8	8	8	8	-	-
Common Shares	0	0	0	0	0	0	0	0	0	0	0
Contributed Surplus (Paid-in Capital)	971	1,547	1,550	1,554	1,567	1,584	3,385	4,660	6,389	6,405	6,414
Preferred Stock	-	0	-	-	-	-	-	-	-	-	-
Retained Earnings	820	703	976	1,466	1,879	2,245	2,310	91	(1,249)	(2,486)	(2,144)
Other / Comprehensive Income (Loss)	17	20	6	0	-	-	-	-	-	-	-
Total Shareholders' Equity	1,809	2,270	2,531	3,021	3,446	3,829	5,695	4,751	5,141	3,919	4,270
Total Liabilities and Shareholders' Equity	4,029	4,030	4,649	6,046	7,274	8,833	14,020	11,389	9,876	8,403	7,760
Return on Capital Employed (ROCE)	**10.4%**	**-1.7%**	**9.2%**	**12.9%**	**9.1%**	**7.5%**	**1.6%**	**-18.2%**	**-8.8%**	**-14.1%**	**7.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide													
Net Revenue	1,209	956	1,480	1,869	2,140	2,665	3,025	2,093	1,285	1,481	2,081	4,848	9,965
Production Costs	329	302	372	445	548	656	723	738	504	490	532	1,526	2,987
Exploration	29	47	33	46	120	186	225	320	108	101	67	277	822
DD&A	278	395	394	468	685	892	1,090	1,243	1,172	949	781	2,902	5,235
G&A/Other	62	42	65	85	109	138	177	173	147	124	123	394	744
Pre-tax Results Of Operations	512	170	617	825	679	793	810	-382	-646	-183	578	-251	177
Income Taxes	196	59	233	305	254	286	291	-99	-167	-51	154	-65	128
Results Of Operations	316	112	384	520	424	508	518	-283	-479	-132	424	-187	49

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America													
Net Revenue	1,209	956	1,480	1,869	2,140	2,665	3,025	2,093	1,285	1,481	2,081	4,848	9,965
Production Costs	329	302	372	445	548	656	723	738	504	490	532	1,526	2,987
Exploration	29	47	33	46	120	186	225	320	108	101	67	277	822
DD&A	278	395	394	468	685	892	1,090	1,243	1,172	949	781	2,902	5,235
G&A/Other	62	42	65	85	109	138	177	173	147	124	123	394	744
Pre-tax Results Of Operations	512	170	617	825	679	793	810	-382	-646	-183	578	-251	177
Income Taxes	196	59	233	305	254	286	291	-99	-167	-51	154	-65	128
Results Of Operations	316	112	384	520	424	508	518	-283	-479	-132	424	-187	49

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Whiting Petroleum (WLL - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$69.01	$47.18	$62.74	$75.42	$70.84	$77.59	$72.35	$35.13	$27.03	$34.36	$44.56	$35.29	$41.74
Production Costs	$18.76	$14.90	$15.77	$17.94	$18.14	$19.09	$17.29	$12.40	$10.60	$11.37	$11.38	$11.11	$12.51
Exploration	$1.68	$2.31	$1.39	$1.85	$3.98	$5.42	$5.39	$5.37	$2.28	$2.35	$1.44	$2.02	$3.44
DD&A	$15.84	$19.48	$16.69	$18.89	$22.67	$25.96	$26.06	$20.87	$24.64	$22.01	$16.73	$21.12	$21.93
G&A/Other	$3.52	$2.09	$2.74	$3.43	$3.59	$4.02	$4.24	$2.90	$3.09	$2.88	$2.64	$2.87	$3.12
Pre-tax Results Of Operations	$29.21	$8.40	$26.14	$33.30	$22.46	$23.10	$19.37	-$6.40	-$13.58	-$4.25	$12.37	-$1.83	$0.74
Income Taxes	$11.19	$2.89	$9.89	$12.32	$8.41	$8.32	$6.97	-$1.66	-$3.51	-$1.19	$3.29	-$0.47	$0.54
Results Of Operations	$18.02	$5.51	$16.25	$20.98	$14.05	$14.78	$12.39	-$4.75	-$10.07	-$3.06	$9.08	-$1.36	$0.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$69.01	$47.18	$62.74	$75.42	$70.84	$77.59	$72.35	$35.13	$27.03	$34.36	$44.56	$35.29	$41.74
Production Costs	$18.76	$14.90	$15.77	$17.94	$18.14	$19.09	$17.29	$12.40	$10.60	$11.37	$11.38	$11.11	$12.51
Exploration	$1.68	$2.31	$1.39	$1.85	$3.98	$5.42	$5.39	$5.37	$2.28	$2.35	$1.44	$2.02	$3.44
DD&A	$15.84	$19.48	$16.69	$18.89	$22.67	$25.96	$26.06	$20.87	$24.64	$22.01	$16.73	$21.12	$21.93
G&A/Other	$3.52	$2.09	$2.74	$3.43	$3.59	$4.02	$4.24	$2.90	$3.09	$2.88	$2.64	$2.87	$3.12
Pre-tax Results Of Operations	$29.21	$8.40	$26.14	$33.30	$22.46	$23.10	$19.37	-$6.40	-$13.58	-$4.25	$12.37	-$1.83	$0.74
Income Taxes	$11.19	$2.89	$9.89	$12.32	$8.41	$8.32	$6.97	-$1.66	-$3.51	-$1.19	$3.29	-$0.47	$0.54
Results Of Operations	$18.02	$5.51	$16.25	$20.98	$14.05	$14.78	$12.39	-$4.75	-$10.07	-$3.06	$9.08	-$1.36	$0.20

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Whiting Petroleum (WLL - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	83.3	80.4	75.0	72.4	70.8	73.7	82.8	112.7	113.5	113.0	128.2	118.3	110.1
Liquids Production (b/d)	34,104	42,140	52,140	55,816	70,973	81,797	100,734	144,425	111,326	99,285	106,605	105,739	112,475
Total Production (boe/d)	47,994	55,534	64,647	67,891	82,766	94,088	114,532	163,205	130,247	118,126	127,980	125,451	130,818
% Gas Production	29%	24%	19%	18%	14%	13%	12%	12%	15%	16%	17%	16%	14%
% Oil Production	71%	76%	81%	82%	86%	87%	88%	88%	85%	84%	83%	84%	86%
Proven Reserves:													
Gas Reserves (bcf)	354.8	307.4	303.5	285.0	224.3	277.5	492.0	665.7	715.7	846.5	731.1	764.4	690.2
Oil Reserves (mmbbls)	180.0	223.8	254.3	297.8	341.4	392.3	698.3	709.6	496.3	476.5	398.2	457.0	555.8
Total Proven Reserves (mmboe)	239.1	275.0	304.9	345.2	378.8	438.5	780.3	820.6	615.5	617.6	520.1	584.4	670.8
% Gas Reserves	25%	19%	17%	14%	10%	11%	11%	14%	19%	23%	23%	22%	17%
% Oil Reserves	75%	81%	83%	86%	90%	89%	89%	86%	81%	77%	77%	78%	83%
Proven Reserve Life Index	13.7	13.6	12.9	13.9	12.5	12.8	18.7	13.8	12.9	14.3	11.1	12.8	14.2
Proven Reserve Additions:													
Gas Additions (bcf)	58.5	(18.1)	23.5	7.9	-34.9	80.2	244.7	214.8	91.4	172.1	-68.6	194.9	654.4
Oil Additions (mmbbls)	(3.9)	59.2	49.5	63.8	69.5	80.8	342.8	64.0	-172.7	16.5	-39.4	(195.6)	211.2
Total Additions (mmboe)	5.9	56.2	53.4	65.2	63.7	94.1	383.6	99.8	-157.5	45.2	-50.8	-163.1	320.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	29.9	32.1	33.3	48.6	81.5	108.8	174.8	189.3	76.7	58.3	34.2	169.2	533.3
Acquisitions	15.6	3.9	0.8	0.4	0.0	17.1	195.6	0.0	0.0	0.2	25.7	25.9	221.5
Dispositions	(6.3)	(2.9)	(0.3)	(2.8)	(10.6)	(43.8)	(2.1)	(53.2)	(114.4)	(50.4)	-	(164.8)	(220.1)
Revisions of Estimates	-33.3	23.1	19.7	19.0	-7.1	12.0	15.3	-36.3	-119.8	37.1	-110.7	(193.4)	(214.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	508.6%	57.2%	62.3%	74.5%	127.9%	115.6%	45.6%	189.6%	-48.7%	129.1%	-67.3%	-103.7%	166.5%
Acquisitions	264.7%	6.9%	1.4%	0.7%	0.0%	18.2%	51.0%	0.0%	0.0%	0.5%	-50.5%	-15.9%	69.2%
Dispositions	-107.1%	-5.3%	-0.6%	-4.4%	-16.7%	-46.6%	-0.6%	-53.3%	72.6%	-111.6%	0.0%	101.0%	-68.7%
Revisions of Estimates	-566.2%	41.2%	36.9%	29.2%	-11.2%	12.8%	4.0%	-36.4%	76.1%	82.0%	217.8%	118.6%	-67.0%
Additions as % of Production:													
Gas	192.2%	-61.5%	85.9%	29.8%	-135.1%	297.8%	809.9%	522.2%	220.7%	417.0%	-146.5%	150.5%	325.8%
Oil	-31.0%	384.7%	260.2%	313.4%	268.4%	270.5%	932.3%	121.5%	-425.1%	45.6%	-101.2%	-168.9%	102.9%
Total	33.6%	277.1%	226.5%	263.0%	210.9%	274.1%	917.6%	167.6%	-331.3%	104.8%	-108.8%	-118.7%	134.2%
Additions as % of Reserves:													
Gas	16.5%	-5.9%	7.8%	2.8%	-15.6%	28.9%	49.7%	32.3%	12.8%	20.3%	-9.4%	25.5%	94.8%
Oil	-2.1%	26.4%	19.5%	21.4%	20.4%	20.6%	49.1%	9.0%	-34.8%	3.5%	-9.9%	-42.8%	38.0%
Total	2.5%	20.4%	17.5%	18.9%	16.8%	21.5%	49.2%	12.2%	-25.6%	7.3%	-9.8%	-27.9%	47.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$42.6	$51.0	$114.0	$400.8	$436.1	$363.2	$216.6	$192.4	$45.8	$50.2	$32.9	$129.0	$538.0
Development	$914.6	$436.7	$723.7	$1,245.2	$1,667.2	$2,132.8	$2,891.9	$2,137.8	$518.6	$799.5	$803.1	$2,121.2	$7,150.8
Acquisitions	$392.9	$91.7	$178.2	$195.8	$139.0	$406.7	$3,314.3	$29.1	$4.4	$21.7	$140.2	$166.3	$3,509.7
Dispositions	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$1,350.1	$579.4	$1,015.9	$1,841.8	$2,242.2	$2,902.7	$6,422.8	$2,359.2	$568.9	$871.4	$976.2	$2,416.5	$11,198.5
Expenditures as % of Total:													
Exploration	3.2%	8.8%	11.2%	21.8%	19.4%	12.5%	3.4%	8.2%	8.1%	5.8%	3.4%	5.3%	4.8%
Development	67.7%	75.4%	71.2%	67.6%	74.4%	73.5%	45.0%	90.6%	91.2%	91.7%	82.3%	87.8%	63.9%
Acquisitions	29.1%	15.8%	17.5%	10.6%	6.2%	14.0%	51.6%	1.2%	0.8%	2.5%	14.4%	6.9%	31.3%
Cashflow (C$million)	$715.1	$494.7	$936.7	$1,202.5	$1,348.0	$1,684.7	$1,935.4	$997.7	$542.2	$700.4	$1,028.8	$2,271.4	$5,204.6
Cashflow (C$/boe)	$40.82	$24.40	$39.70	$48.53	$44.62	$49.06	$46.30	$16.75	$11.40	$16.24	$22.02	$16.53	$21.80
Recycle Ratio	0.4x	2.5x	2.1x	1.8x	1.5x	2.3x	2.8x	1.1x	-0.9x	1.8x	-1.1x	0.0x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-$282.48	$8.83	$15.81	$24.37	$28.30	$20.66	$16.35	$15.23	-$13.10	$8.91	-$10.93	-$92.95	$24.11
Acquisition Costs	$25.24	$23.69	$234.73	$439.85	na	$23.72	$16.94	na	na	$93.08	$5.46	$6.42	$15.84
All Sources (incl. revisions)	$110.86	$9.80	$18.90	$27.09	$30.16	$21.04	$16.65	$15.42	-$13.20	$9.11	-$19.22	$1,417.58	$20.72
Exploration & Development (excl. revisions)	$32.00	$15.19	$25.16	$33.90	$25.81	$22.95	$17.78	$12.31	$7.36	$14.57	$24.46	$13.30	$14.42
Acquisition Costs	$25.24	$23.69	$234.73	$439.85	na	$23.72	$16.94	na	na	$93.08	$5.46	$6.42	$15.84
All Sources (excl. revisions)	$29.69	$16.10	$29.84	$37.59	$27.52	$23.05	$17.34	$12.46	$7.42	$14.88	$16.31	$12.38	$14.84

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Whiting Petroleum (WLL - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	18.76	14.90	15.77	17.94	18.14	19.09	17.29	12.40	10.60	11.37	11.38	11.11	12.51
Exploration Expense	1.68	2.31	1.39	1.85	3.98	5.42	5.39	5.37	2.28	2.35	1.44	2.02	3.44
G&A/Other	3.52	2.09	2.74	3.43	3.59	4.02	4.24	2.90	3.09	2.88	2.64	2.87	3.12
F&D Costs	29.69	9.80	18.90	27.09	30.16	21.04	16.65	15.42	7.42	14.88	16.31	12.87	14.14
Return on Capital	25.94	8.53	15.59	24.20	24.05	17.13	20.71	13.59	6.12	13.69	11.63	10.50	13.01
Income Taxes	16.12	4.47	9.48	14.21	14.40	9.64	11.65	4.74	2.13	5.34	4.21	3.65	34.23
Breakeven Oil Price	95.71	42.10	63.88	88.73	94.32	76.34	75.94	54.42	31.64	50.51	47.61	43.01	80.45
Quality Differential	10.24	6.12	6.07	20.10	27.36	19.87	18.14	14.08	13.76	14.58	18.09	15.48	15.73
Required Brent Price	105.95	48.22	69.96	108.82	121.68	96.21	94.08	68.50	45.40	65.10	65.70	58.49	96.18

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	18.76	14.90	15.77	17.94	18.14	19.09	17.29	12.40	10.60	11.37	11.38	11.11	12.51
Exploration Expense	1.68	2.31	1.39	1.85	3.98	5.42	5.39	5.37	2.28	2.35	1.44	2.02	3.44
G&A/Other	3.52	2.09	2.74	3.43	3.59	4.02	4.24	2.90	3.09	2.88	2.64	2.87	3.12
F&D Costs	29.69	9.80	18.90	27.09	30.16	21.04	16.65	15.42	7.42	14.88	16.31	12.87	14.14
Return on Capital	25.94	8.53	15.59	24.20	24.05	17.13	20.71	13.59	6.12	13.69	11.63	10.50	13.01
Income Taxes	16.12	4.47	9.48	14.21	14.40	9.64	11.65	4.74	2.13	5.34	4.21	3.65	34.23
Breakeven Oil Price	95.71	42.10	63.88	88.73	94.32	76.34	75.94	54.42	31.64	50.51	47.61	43.01	80.45
Quality Differential	10.24	6.12	6.07	20.10	27.36	19.87	18.14	14.08	13.76	14.58	18.09	15.48	15.73
Required Brent Price	105.95	48.22	69.96	108.82	121.68	96.21	94.08	68.50	45.40	65.10	65.70	58.49	96.18

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Whiting Petroleum (WLL - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.72	17.28	17.79	20.30	20.28	21.06	18.57	13.40	11.84	12.86	13.16	12.60	13.89
Exploration Expense	1.94	2.68	1.57	2.09	4.44	5.98	5.79	5.80	2.55	2.65	1.67	2.29	3.82
G&A/Other	4.08	2.42	3.09	3.88	4.02	4.43	4.55	3.13	3.45	3.26	3.05	3.26	3.46
F&D Costs (1-Year)	39.80	9.55	19.77	27.87	29.15	22.87	17.74	14.01	8.69	17.94	19.50	15.38	15.58
Return on Capital	35.72	8.67	16.84	26.32	24.13	19.05	22.29	12.18	6.85	15.55	12.79	11.97	13.71
Income Taxes	22.19	4.54	10.24	15.45	14.45	10.72	12.54	4.25	2.39	6.07	4.64	4.16	36.06
Breakeven Oil Price	**125.44**	**45.15**	**69.30**	**95.92**	**96.47**	**84.12**	**81.48**	**52.78**	**35.76**	**58.34**	**54.80**	**49.66**	**86.51**
Quality Differential	11.86	7.10	6.85	22.73	30.59	21.92	19.48	15.23	15.38	16.49	20.90	17.59	17.50
Required Brent Price	**137.30**	**52.24**	**76.16**	**118.65**	**127.06**	**106.03**	**100.97**	**68.01**	**51.14**	**74.83**	**75.71**	**67.25**	**104.01**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.72	17.28	17.79	20.30	20.28	21.06	18.57	13.40	11.84	12.86	13.16	12.60	13.89
Exploration Expense	1.94	2.68	1.57	2.09	4.44	5.98	5.79	5.80	2.55	2.65	1.67	2.29	3.82
G&A/Other	4.08	2.42	3.09	3.88	4.02	4.43	4.55	3.13	3.45	3.26	3.05	3.26	3.46
F&D Costs (1-Year)	116.78	14.67	17.65	38.96	52.78	42.27	33.88	24.28	40.79	15.74	15.93	24.15	26.12
Return on Capital	104.54	13.23	14.71	36.04	43.72	35.14	42.58	21.12	32.31	13.59	10.45	18.59	23.05
Income Taxes	64.96	6.93	8.95	21.16	26.17	19.77	23.96	7.37	11.27	5.30	3.79	6.46	60.63
Breakeven Oil Price	**314.02**	**57.21**	**63.76**	**122.44**	**151.41**	**128.65**	**129.34**	**75.10**	**102.22**	**53.40**	**48.04**	**67.35**	**130.97**
Quality Differential	11.86	7.10	6.85	22.73	30.59	21.92	19.48	15.23	15.38	16.49	20.90	17.59	17.50
Required Brent Price	**325.87**	**64.30**	**70.61**	**145.18**	**182.00**	**150.57**	**148.83**	**90.33**	**117.59**	**69.89**	**68.95**	**84.94**	**148.47**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

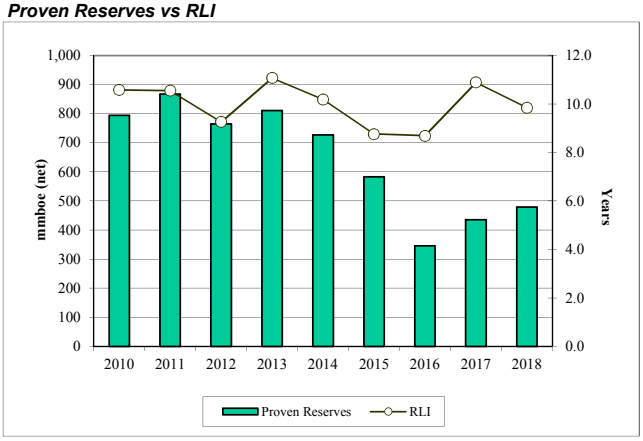
WPX Energy (WPX - NYSE)

US$, net

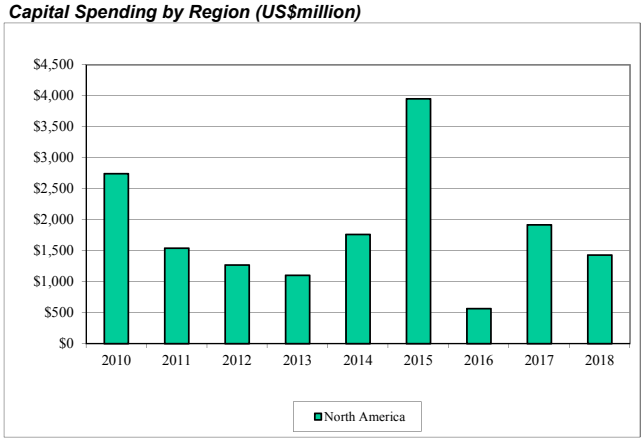
- WPX reported results from operations of $7.16/boe in 2018 from a loss of $0.41/boe in 2017.
- One-year F&D costs came in at $9.97/boe compared to $10.40/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $11.94/boe versus $12.28/boe, while costs for PD reserves also came in lower at $12.93/boe compared to $20.24/boe.
- WPX's 2018 operations imply a required Brent breakeven oil price of $63.90/boe on total proved reserves, while its PD cost assessment implies a breakeven of $65.66/boe.
- WPX reported a return on capital of 3.9% in 2018 versus 1.4% in in 2017.

Notes: All upstream financial figures, as well as reserve and production values are based upon FASB Statement No. 69 disclosure.

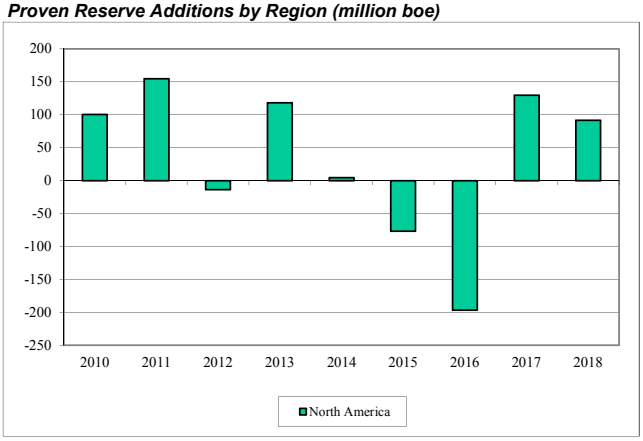
Proven Reserves vs RLI



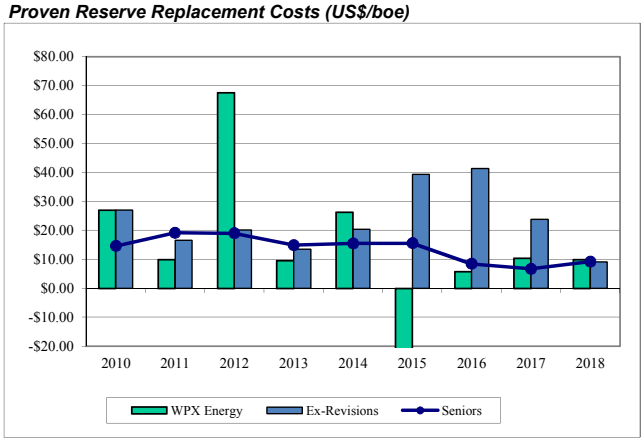
Capital Spending by Region (US$million)



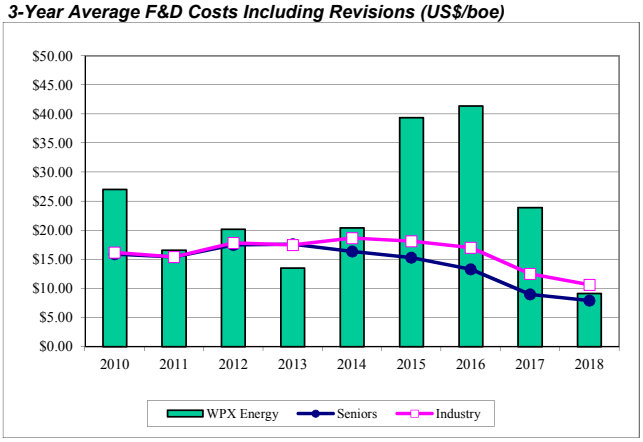
Proven Reserve Additions by Region (million boe)



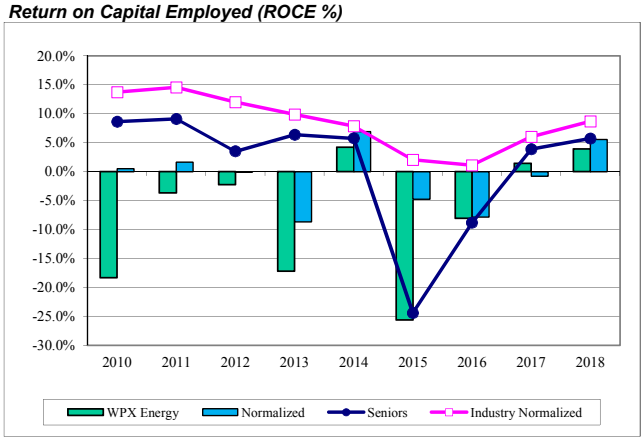
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

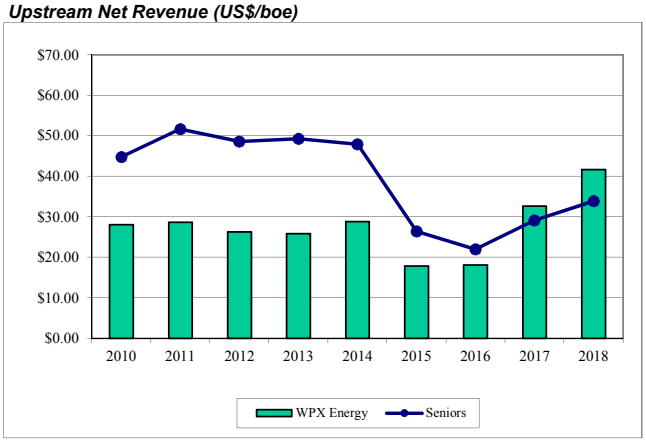
See pages F1 to F4 for analyst coverage.

WPX Energy (WPX - NYSE)

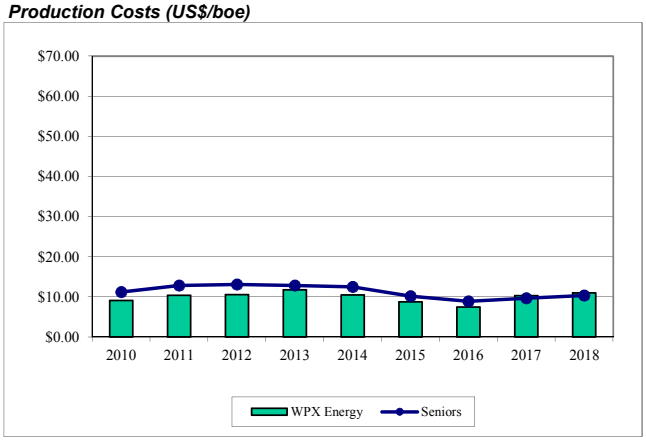
US$/boe, net

North America

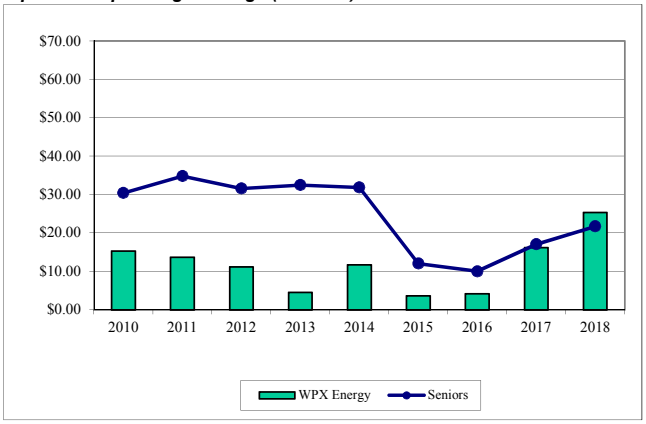
Upstream Net Revenue (US$/boe)



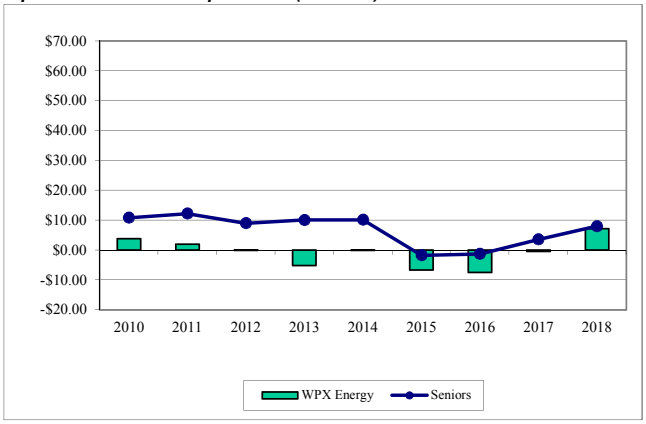
Production Costs (US$/boe)



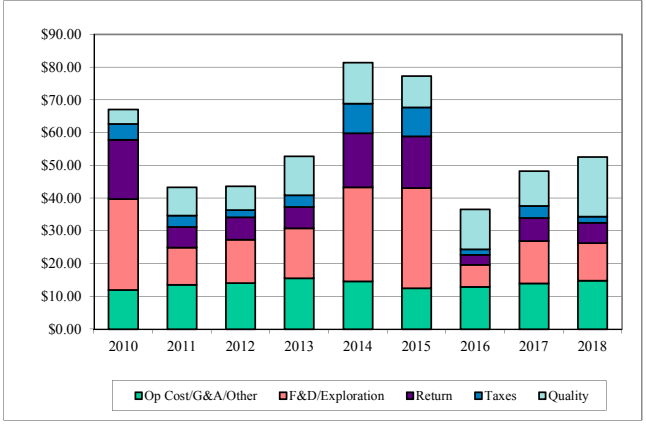
Upstream Operating Earnings (US$/boe)



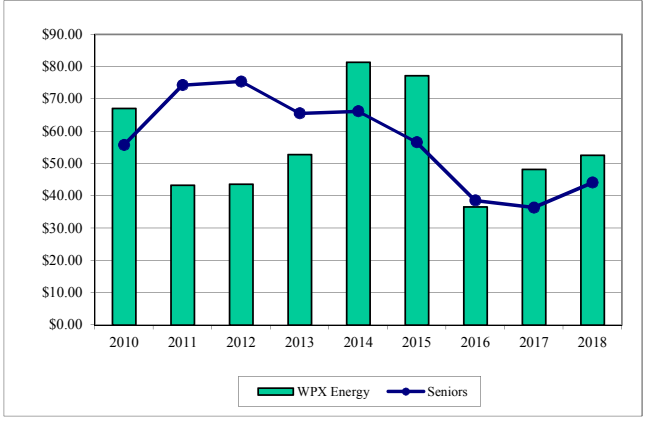
Upstream Results Of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

WPX Energy (WPX - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties			2,225	2,518	2,154	1,972	1,931	1,173	722	1,307	2,025
Midstream / Downstream Revenue			1,742	1,428	949	891	1,120	288	177	-	-
Other			67	42	86	(102)	442	427	(206)	29	285
Total Revenue and Other Income	-	-	4,034	3,988	3,189	2,761	3,493	1,888	693	1,336	2,310
Production and Transportation Expenses			737	934	900	882	698	577	299	414	536
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs			73	134	83	431	173	111	42	101	75
General and Administrative			253	285	287	289	271	249	214	174	182
Depreciation, Depletion and Amortization			875	949	966	940	810	940	623	673	777
Interest, net			87	82	102	98	122	187	207	188	163
Other			3,433	2,021	1,195	1,967	1,093	2,378	245	(55)	261
Earnings Before Income Tax	-	-	(1,424)	(417)	(344)	(1,846)	326	(2,554)	(937)	(159)	316
Current Income Taxes	-	-	(105)	(5)	65	(10)	-	3	(33)	(17)	(10)
Future Income Taxes			(44)	(140)	(176)	(645)	75	(918)	(292)	(131)	84
Total Income Taxes			(149)	(145)	(111)	(655)	75	(915)	(325)	(148)	74
Minority Interest	-	-	(8)	(10)	(12)	6	(87)	(1)	-	-	-
Earnings From Continuing Operations	-	-	(1,283)	(282)	(245)	(1,185)	164	(1,640)	(612)	(11)	242
Discontinued Operations/Extraordinary Items	-	-	(8)	(20)	22	-	-	(87)	11	(5)	(91)
Cumulative Change in Accounting Principle										-	-
Net Earnings	-	-	(1,291)	(302)	(223)	(1,185)	164	(1,727)	(601)	(16)	151
Preferred Stock Dividends								9	40	15	8
Net Earnings to Common Shareholders	-	-	(1,291)	(302)	(223)	(1,185)	164	(1,736)	(641)	(31)	143

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	(1,283)	(282)	(245)	(1,185)	164	(1,640)	(612)	(11)	242
Charges and Credits Not Impacting Cash	-	-	2,450	1,469	1,101	1,778	1,145	2,361	350	697	942
Other			(22)	(6)	31	(15)	239	(355)	579	(125)	(159)
Cash Flow From Operations	-	-	1,145	1,181	887	578	1,548	366	317	561	1,025
Change in Working Capital / Other	-	-	(89)	25	(93)	58	(478)	445	(55)	(54)	(142)
Net Cash From Operating Activities	-	-	1,056	1,206	794	636	1,070	811	262	507	883
Total Capital Expenditures	-	-	(1,856)	(1,572)	(1,521)	(1,154)	(1,807)	(1,124)	(578)	(1,160)	(1,476)
Acquisitions, net			(456)	15	310	49	374	1,019	889	(1,159)	682
Other			(25)	1	7	(6)	(4)	(1,211)	(1)	881	(102)
Net Cash From Investing Activities	-	-	(2,337)	(1,556)	(1,204)	(1,111)	(1,437)	(1,316)	310	(1,438)	(896)
Net Change in Debt			-	1,502	6	410	370	(115)	(621)	(19)	(172)
Net Change in Common Stock			-	-	3	6	16	295	540	672	10
Net Change in Preferred Stock			-	-	-	-	-	339	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	(15)	(11)
Other	-	-	1,284	(663)	28	10	(42)	(46)	(33)	(14)	3
Net Cash From Financing Activities	-	-	1,284	839	37	426	344	473	(114)	624	(170)
Effect of Exchange Rate on Cash	-	-	-	-	-	(5)	(6)	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	3	489	(373)	(54)	(29)	(32)	458	(307)	(183)
Cash and Equivalents, Beginning of Year	-	-	34	37	526	153	99	70	38	496	201
Cash and Equivalents, End of Year	-	-	37	526	153	99	70	38	496	189	18

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

WPX Energy (WPX - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	958	1,674	772	922	1,869	850	754	638	739
Net Property, Plant and Equipment	-	-	8,449	8,222	8,416	7,241	6,842	7,401	6,474	7,454	7,266
Other Assets			439	536	268	266	87	99	36	115	198
Total Assets	-	-	9,846	10,432	9,456	8,429	8,798	8,350	7,264	8,207	8,203
Total Current Liabilities			3,167	1,156	726	1,007	1,209	690	677	839	715
Long-term Debt			-	1,503	1,508	1,916	2,280	3,189	2,575	2,575	2,485
Deferred Income Taxes			1,645	1,556	1,401	788	621	465	251	117	201
Other Liabilities and Deferred Credits	-	-	550	458	450	508	260	471	295	549	501
Total Liabilities	-	-	5,362	4,673	4,085	4,219	4,370	4,815	3,798	4,080	3,902
Minority Interests	-	-	-							-	-
Common Shares			-	2	2	2	2	3	3	4	4
Contributed Surplus (Paid-in Capital)			-	5,457	5,487	5,516	5,561	6,164	6,803	7,479	7,734
Preferred Stock			-	-	-	-	-	339	232	232	-
Retained Earnings			-	-	(223)	(1,408)	(1,244)	(2,971)	(3,572)	(3,588)	(3,437)
Other / Comprehensive Income (Loss)			4,484	300	105	100	109	-	-	-	-
Total Shareholders' Equity	-	-	4,484	5,759	5,371	4,210	4,428	3,535	3,466	4,127	4,301
Total Liabilities and Shareholders' Equity	-	-	9,846	10,432	9,456	8,429	8,798	8,350	7,264	8,207	8,203
Return on Capital Employed (ROCE)	**na**	**na**	**-18.3%**	**-3.7%**	**-2.3%**	**-17.2%**	**4.2%**	**-25.6%**	**-8.1%**	**1.4%**	**3.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Results of Operations from Oil & Gas Producing Activities (US$million)

	2008	2009	2010	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
Worldwide												
Net Revenue	0	0	2,166	2,228	1,937	2,094	1,188	722	1,307	2,025	4,054	7,336
Production Costs	0	0	703	900	882	764	584	299	414	536	1,249	2,597
Exploration	0	0	57	83	431	177	111	42	101	75	218	506
DD&A	0	0	811	966	940	852	940	623	673	777	2,073	3,865
G&A/Other	0	0	223	295	282	299	250	214	144	182	540	1,089
Pre-tax Results Of Operations	0	0	372	-16	-598	2	-697	-456	-25	455	-26	-721
Income Taxes	0	0	78	-4	-213	2	-252	-158	-9	107	-60	-310
Results Of Operations	0	0	294	-12	-385	0	-445	-298	-17	348	34	-411

	2008	2009	2010	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
North America												
Net Revenue	0	0	2,077	2,091	1,785	1,931	1,173	722	1,307	2,025	4,054	7,158
Production Costs	0	0	668	842	818	698	577	299	414	536	1,249	2,524
Exploration	0	0	51	72	424	173	111	42	101	75	218	502
DD&A	0	0	794	939	906	810	940	623	673	777	2,073	3,823
G&A/Other	0	0	214	281	268	271	249	214	144	182	540	1,060
Pre-tax Results Of Operations	0	0	350	-43	-631	-21	-704	-456	-25	455	-26	-751
Income Taxes	0	0	70	-14	-224	-5	-252	-158	-9	107	-60	-317
Results Of Operations	0	0	280	-29	-407	-16	-452	-298	-17	348	34	-434

	2008	2009	2010	2012	2013	2014	2015	2016	2017	2018	Cumulative 3-Year	Cumulative 5-Year
International												
Net Revenue	0	0	89	137	152	163	15	0	0	0	0	178
Production Costs	0	0	35	58	64	66	7	0	0	0	0	73
Exploration	0	0	6	11	7	4	0	0	0	0	0	4
DD&A	0	0	17	27	34	42	0	0	0	0	0	42
G&A/Other	0	0	9	14	14	28	1	0	0	0	0	29
Pre-tax Results Of Operations	0	0	22	27	33	23	7	0	0	0	0	30
Income Taxes	0	0	8	10	11	7	0	0	0	0	0	7
Results Of Operations	0	0	14	17	22	16	7	0	0	0	0	23

Note: Based on FASB 69 disclosure
Source: BMO Capital Markets, Company Reports

WPX Energy (WPX - NYSE)

Exhibit 5: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	-	-	$28.03	$28.68	$26.27	$25.85	$28.83	$17.85	$18.11	$32.63	$41.64	$31.54	$27.40
Production Costs	-	-	$9.10	$10.44	$10.61	$11.77	$10.52	$8.77	$7.50	$10.34	$11.02	$9.72	$9.70
Exploration	-	-	$0.74	$1.49	$0.98	$5.75	$2.44	$1.67	$1.05	$2.52	$1.54	$1.70	$1.89
DD&A	-	-	$10.50	$10.67	$11.39	$12.54	$11.73	$14.12	$15.63	$16.80	$15.98	$16.13	$14.43
G&A/Other	-	-	$2.89	$3.05	$3.48	$3.76	$4.12	$3.76	$5.37	$3.60	$3.74	$4.20	$4.07
Pre-tax Results Of Operations	-	-	$4.81	$3.03	-$0.19	-$7.98	$0.03	-$10.47	-$11.44	-$0.62	$9.36	-$0.20	-$2.69
Income Taxes	-	-	$1.01	$1.06	-$0.05	-$2.84	$0.03	-$3.79	-$3.97	-$0.21	$2.19	-$0.47	-$1.16
Results Of Operations	-	-	$3.81	$1.97	-$0.14	-$5.14	$0.00	-$6.68	-$7.47	-$0.41	$7.16	$0.27	-$1.53

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	-	-	$27.64	$28.14	$25.30	$24.39	$27.04	$17.62	$18.11	$32.63	$41.64	$31.54	$26.86
Production Costs	-	-	$8.89	$10.15	$10.19	$11.17	$9.78	$8.67	$7.50	$10.34	$11.02	$9.72	$9.47
Exploration	-	-	$0.68	$1.50	$0.87	$5.79	$2.42	$1.67	$1.05	$2.52	$1.54	$1.70	$1.88
DD&A	-	-	$10.57	$10.70	$11.36	$12.38	$11.34	$14.12	$15.63	$16.80	$15.98	$16.13	$14.34
G&A/Other	-	-	$2.85	$2.95	$3.40	$3.66	$3.80	$3.74	$5.37	$3.60	$3.74	$4.20	$3.98
Pre-tax Results Of Operations	-	-	$4.66	$2.84	-$0.52	-$8.62	-$0.29	-$10.58	-$11.44	-$0.62	$9.36	-$0.20	-$2.82
Income Taxes	-	-	$0.93	$0.99	-$0.17	-$3.06	-$0.07	-$3.79	-$3.97	-$0.21	$2.19	-$0.47	-$1.19
Results Of Operations	-	-	$3.73	$1.86	-$0.35	-$5.56	-$0.23	-$6.79	-$7.47	-$0.41	$7.16	$0.27	-$1.63

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Net Revenue	-	-	$41.72	$47.83	$63.23	$87.69	$131.75	nm	nm	nm	nm	nm	nm
Production Costs	-	-	$16.41	$20.87	$26.77	$36.92	$53.35	nm	nm	nm	nm	nm	nm
Exploration	-	-	$2.81	$1.30	$5.08	$4.04	$3.23	nm	nm	nm	nm	nm	nm
DD&A	-	-	$7.97	$9.57	$12.46	$19.62	$33.95	nm	nm	nm	nm	nm	nm
G&A/Other	-	-	$4.22	$6.52	$6.46	$8.08	$22.63	nm	nm	nm	nm	nm	nm
Pre-tax Results Of Operations	-	-	$10.31	$9.57	$12.46	$19.04	$18.59	nm	nm	nm	nm	nm	nm
Income Taxes	-	-	$3.75	$3.48	$4.62	$6.35	$5.66	nm	nm	nm	nm	nm	nm
Results Of Operations	-	-	$6.56	$6.09	$7.85	$12.69	$12.93	nm	nm	nm	nm	nm	nm

Source: BMO Capital Markets, Company Reports

WPX Energy (WPX - NYSE)

Exhibit 6: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	1,087.1	1,141.9	1,115.1	984.7	918.9	758.9	324.9	207.9	174.8	235.9	477.1
Liquids Production (b/d)	-	-	24,658	35,068	40,548	36,438	42,466	55,890	55,068	75,068	104,110	78,082	66,521
Total Production (boe/d)	-	-	205,845	225,388	226,393	200,548	195,616	182,374	109,224	109,726	133,242	117,397	146,037
% Gas Production	-	-	88%	84%	82%	82%	78%	69%	50%	32%	22%	33%	54%
% Oil Production	-	-	12%	16%	18%	18%	22%	31%	50%	68%	78%	67%	46%
Proven Reserves:													
Gas Reserves (bcf)	-	-	4,049.3	4,122.5	3,471.5	3,733.8	3,157.0	2,190.2	734.5	591.0	617.7	647.7	1,458.1
Oil Reserves (mmbbls)	-	-	120.1	181.1	186.9	188.6	201.6	218.0	224.1	337.7	376.3	312.7	271.5
Total Proven Reserves (mmboe)	-	-	795.0	868.2	765.5	810.9	727.8	583.0	346.5	436.2	479.3	420.7	514.6
% Gas Reserves	-	-	85%	79%	76%	77%	72%	63%	35%	23%	21%	26%	47%
% Oil Reserves	-	-	15%	21%	24%	23%	28%	37%	65%	77%	79%	74%	53%
Proven Reserve Life Index	-	-	10.6	10.6	9.3	11.1	10.2	8.8	8.7	10.9	9.9	9.8	9.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	255.8	502.8	-230.2	634.7	-231.0	-682.4	-1,337.1	-67.6	90.5	(1,314.2)	(2,227.6)
Oil Additions (mmbbls)	-	-	60.3	73.8	20.6	15.0	28.5	36.8	26.2	141.0	76.6	243.8	309.1
Total Additions (mmboe)	-	-	102.9	157.6	-17.8	120.8	-10.0	-76.9	-196.7	129.7	91.7	24.8	-62.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	93.8	181.1	107.8	92.1	115.3	41.7	110.5	142.7	136.7	389.9	546.8
Acquisitions	-	-	26.9	1.6	1.0	0.0	6.0	94.8	2.7	39.4	2.9	45.0	145.8
Dispositions	-	-	-	(2.1)	(37.5)	(0.0)	(77.1)	(63.4)	(294.8)	(54.6)	(51.3)	(400.7)	(541.1)
Revisions of Estimates	-	-	-17.8	-23.0	-89.1	28.7	-54.2	-150.0	-15.1	2.2	3.4	(9.5)	(213.6)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	91.1%	114.9%	-606.7%	76.3%	-1152.9%	-54.2%	-56.2%	110.0%	149.1%	1574.2%	-879.6%
Acquisitions	-	-	26.1%	1.0%	-5.4%	0.0%	-60.0%	-123.2%	-1.4%	30.4%	3.2%	181.8%	-234.5%
Dispositions	-	-	0.0%	-1.4%	210.9%	0.0%	771.3%	82.4%	149.9%	-42.1%	-56.0%	-1617.8%	870.5%
Revisions of Estimates	-	-	-17.3%	-14.6%	501.2%	23.7%	541.7%	195.0%	7.7%	1.7%	3.7%	-38.2%	343.6%
Additions as % of Production:													
Gas	-	-	64.5%	120.6%	-56.6%	176.6%	-68.9%	-246.4%	-1127.4%	-89.1%	141.8%	-508.8%	-255.8%
Oil	-	-	670.0%	576.6%	139.2%	112.8%	183.9%	180.4%	130.3%	514.6%	201.6%	285.1%	254.6%
Total	-	-	137.0%	191.6%	-21.5%	165.0%	-14.0%	-115.6%	-493.3%	323.9%	188.5%	19.3%	-23.3%
Additions as % of Reserves:													
Gas	-	-	6.3%	12.2%	-6.6%	17.0%	-7.3%	-31.2%	-182.0%	-11.4%	14.7%	-202.9%	-152.8%
Oil	-	-	50.2%	40.8%	11.0%	8.0%	14.1%	16.9%	11.7%	41.8%	20.4%	78.0%	113.8%
Total	-	-	12.9%	18.2%	-2.3%	14.9%	-1.4%	-13.2%	-56.8%	29.7%	19.1%	5.9%	-12.1%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	$35.0	$51.0	$54.0	$120.0	$92.0	$84.0	$5.0	$5.0	$7.0	$17.0	$193.0
Development	-	-	$1,015.0	$1,485.0	$1,165.0	$975.0	$1,376.0	$657.0	$471.0	$1,048.0	$1,350.0	$2,869.0	$4,902.0
Acquisitions	-	-	$1,731.0	$45.0	$111.0	$57.0	$294.0	$3,208.0	$84.0	$864.0	$68.0	$1,016.0	$4,518.0
Dispositions	-	-	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	-	-	$2,781.0	$1,581.0	$1,330.0	$1,152.0	$1,762.0	$3,949.0	$560.0	$1,917.0	$1,425.0	$3,902.0	$9,613.0
Expenditures as % of Total:													
Exploration	-	-	1.3%	3.2%	4.1%	10.4%	5.2%	2.1%	0.9%	0.3%	0.5%	0.4%	2.0%
Development	-	-	36.5%	93.9%	87.6%	84.6%	78.1%	16.6%	84.1%	54.7%	94.7%	73.5%	51.0%
Acquisitions	-	-	62.2%	2.8%	8.3%	4.9%	16.7%	81.2%	15.0%	45.1%	4.8%	26.0%	47.0%
Cashflow (C$million)	-	-	$1,145.0	$1,181.0	$887.0	$578.0	$1,548.0	$366.0	$317.0	$561.0	$1,025.0	$1,903.0	$3,817.0
Cashflow (C$/boe)	-	-	$15.24	$14.36	$10.73	$7.90	$21.68	$5.50	$7.95	$14.01	$21.08	$14.80	$14.32
Recycle Ratio	-	-	0.6x	1.5x	0.2x	0.8x	0.8x	0.0x	1.4x	1.3x	2.1x	1.6x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	$13.81	$9.72	$65.07	$9.06	$24.03	-$6.84	$4.99	$7.27	$9.69	$7.59	$15.29
Acquisition Costs	-	-	$64.31	$27.55	$114.83	na	$49.00	$33.85	$30.73	$21.93	$23.45	$22.56	$30.99
All Sources (incl. revisions)	-	-	$27.02	$9.90	$67.51	$9.54	$26.26	-$291.44	$5.71	$10.40	$9.97	$9.17	$20.07
Exploration & Development (excl. revisions)	-	-	$11.19	$8.48	$11.31	$11.88	$12.74	$17.78	$4.31	$7.38	$9.93	$7.40	$9.32
Acquisition Costs	-	-	$64.31	$27.55	$114.83	na	$49.00	$33.85	$30.73	$21.93	$23.45	$22.56	$30.99
All Sources (excl. revisions)	-	-	$23.03	$8.65	$12.23	$12.50	$14.53	$28.94	$4.95	$10.53	$10.21	$8.97	$13.88

Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

WPX Energy (WPX - NYSE)

Breakeven Analysis

Exhibit 7: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Operating Costs	-	-	9.10	10.44	10.61	11.77	10.52	8.77	7.50	10.34	11.02	9.72	9.70
Exploration Expense	-	-	0.74	1.49	0.98	5.75	2.44	1.67	1.05	2.52	1.54	1.70	1.89
G&A/Other	-	-	2.89	3.05	3.48	3.76	4.12	3.76	5.37	3.60	3.74	4.20	4.07
F&D Costs	-	-	27.02	9.90	12.23	9.54	26.26	28.94	5.71	10.40	9.97	9.17	16.25
Return on Capital	-	-	18.09	6.36	6.86	6.48	16.48	15.70	3.10	7.13	6.16	5.65	9.83
Income Taxes	-	-	4.80	3.41	2.19	3.58	9.11	8.90	1.65	3.68	1.88	2.50	4.79
Breakeven Oil Price	-	-	62.63	34.65	36.35	40.88	68.92	67.75	24.38	37.66	34.32	32.93	46.54
Quality Differential	-	-	4.45	8.62	7.23	11.87	12.51	9.50	12.24	10.58	18.27	13.69	12.62
Required Brent Price	-	-	67.08	43.27	43.58	52.75	81.43	77.25	36.61	48.24	52.58	46.63	59.16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Operating Costs	-	-	9.10	10.44	10.61	11.77	10.52	8.77	7.50	10.34	11.02	9.72	9.70
Exploration Expense	-	-	0.74	1.49	0.98	5.75	2.44	1.67	1.05	2.52	1.54	1.70	1.89
G&A/Other	-	-	2.89	3.05	3.48	3.76	4.12	3.76	5.37	3.60	3.74	4.20	4.07
F&D Costs	-	-	27.02	9.90	12.23	9.54	26.26	28.94	5.71	10.40	9.97	9.17	16.25
Return on Capital	-	-	18.09	6.36	6.86	6.48	16.48	15.70	3.10	7.13	6.16	5.65	9.83
Income Taxes	-	-	4.80	3.41	2.19	3.58	9.11	8.90	1.65	3.68	1.88	2.50	4.79
Breakeven Oil Price	-	-	62.63	34.65	36.35	40.88	68.92	67.75	24.38	37.66	34.32	32.93	46.54
Quality Differential	-	-	4.45	8.62	7.23	11.87	12.51	9.50	12.24	10.58	18.27	13.69	12.62
Required Brent Price	-	-	67.08	43.27	43.58	52.75	81.43	77.25	36.61	48.24	52.58	46.63	59.16

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
International													
Operating Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration Expense	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
F&D Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Return on Capital	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Breakeven Oil Price	na	na	na	na	na	na	na	na	na	na	na	na	na
Quality Differential	na	na	na	na	na	na	na	na	na	na	na	na	na
Required Brent Price	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

WPX Energy (WPX - NYSE)

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	15.97	21.85	26.12	27.12	21.27	14.14	11.27	13.23	13.48	12.80	14.86
Exploration Expense	-	-	1.30	3.12	2.41	13.25	4.93	2.69	1.58	3.23	1.89	2.23	2.89
G&A/Other	-	-	5.07	6.38	8.56	8.67	8.33	6.05	8.06	4.60	4.58	5.53	6.23
F&D Costs (1-Year)	-	-	33.85	14.79	62.49	24.00	36.02	36.90	7.07	12.28	11.94	11.01	20.85
Return on Capital	-	-	22.51	10.25	40.41	17.87	24.57	22.53	4.41	9.16	7.41	7.30	13.55
Income Taxes	-	-	5.97	5.50	15.67	8.19	10.37	9.91	1.90	4.72	2.27	3.01	5.68
Breakeven Oil Price	**-**	**-**	**84.66**	**61.89**	**155.66**	**99.10**	**105.49**	**92.23**	**34.31**	**47.22**	**41.56**	**41.87**	**64.06**
Quality Differential	-	-	7.81	18.03	17.80	27.34	25.29	15.32	18.38	13.54	22.34	18.09	18.98
Required Brent Price	**-**	**-**	**92.47**	**79.91**	**173.46**	**126.44**	**130.78**	**107.55**	**52.69**	**60.76**	**63.90**	**59.96**	**83.04**

Source: BMO Capital Markets, Company Reports

Exhibit 9: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	15.97	21.85	26.12	27.12	21.27	14.14	11.27	13.23	13.48	12.80	14.86
Exploration Expense	-	-	1.30	3.12	2.41	13.25	4.93	2.69	1.58	3.23	1.89	2.23	2.89
G&A/Other	-	-	5.07	6.38	8.56	8.67	8.33	6.05	8.06	4.60	4.58	5.53	6.23
F&D Costs (1-Year)	-	-	9.33	19.37	43.64	34.18	22.68	49.94	15.73	20.24	12.93	16.22	24.30
Return on Capital	-	-	6.20	13.40	27.64	25.40	15.32	28.87	9.81	15.01	8.00	10.76	15.71
Income Taxes	-	-	1.64	7.19	10.71	11.64	6.47	12.70	4.23	7.73	2.45	4.43	6.59
Breakeven Oil Price	**-**	**-**	**39.51**	**71.30**	**119.08**	**120.27**	**78.99**	**114.40**	**50.68**	**64.05**	**43.32**	**51.98**	**70.59**
Quality Differential	-	-	7.81	18.03	17.80	27.34	25.29	15.32	18.38	13.54	22.34	18.09	18.98
Required Brent Price	**-**	**-**	**47.32**	**89.33**	**136.88**	**147.61**	**104.29**	**129.72**	**69.07**	**77.59**	**65.66**	**70.07**	**89.56**

Source: BMO Capital Markets, Company Reports

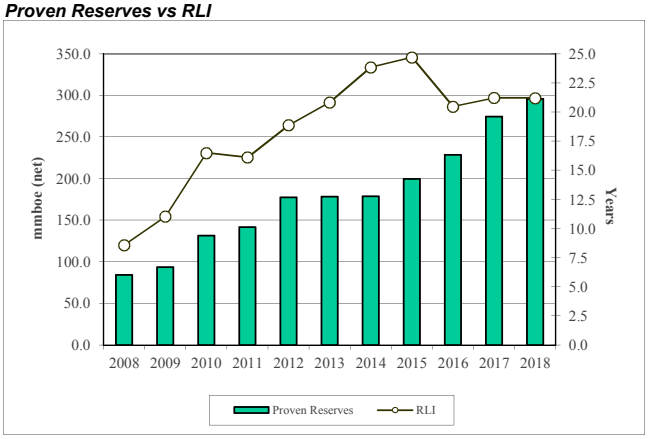
Advantage Oil & Gas (AAV - TSX)

US$, net

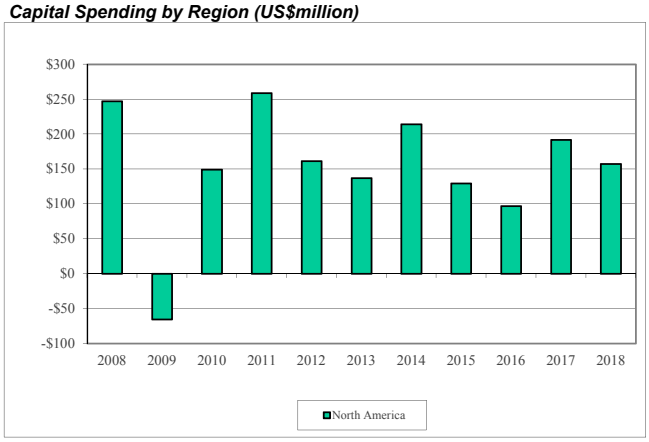
- Advantage's reported a loss from operations of $1.48/boe in 2018 compared to a gain of $3.07/boe in 2017.
- One-year average F&D costs increased to $5.13/boe versus $3.29/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $15.24/boe from $9.26/boe, while the costs for proved developed reserves increased to $26.10/boe from $22.08/boe.
- Advantage's 2018 reported costs imply a required Brent breakeven oil price of $95.89/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a breakeven of $131.22/boe.
- The company reported a return on capital of 1.2% versus 7.0% last year.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

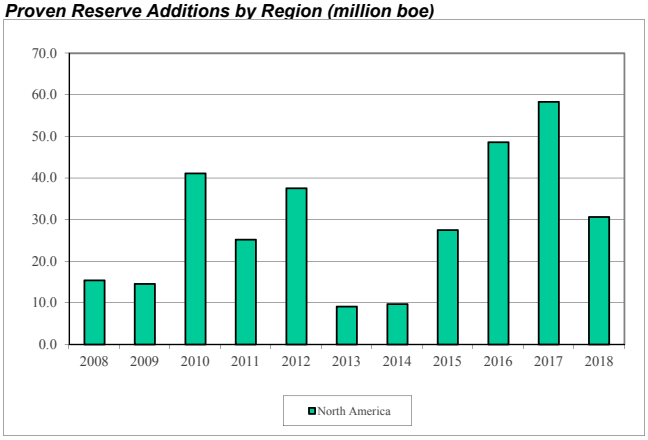
Proven Reserves vs RLI



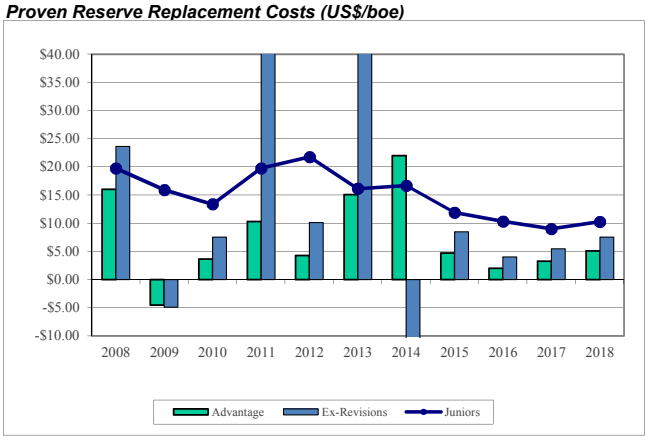
Capital Spending by Region (US$million)



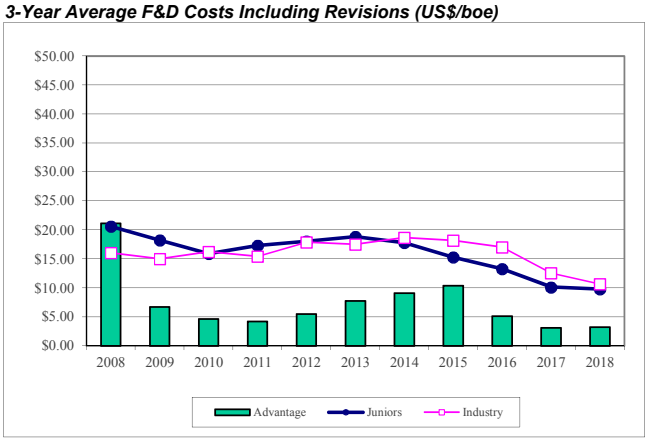
Proven Reserve Additions by Region (million boe)



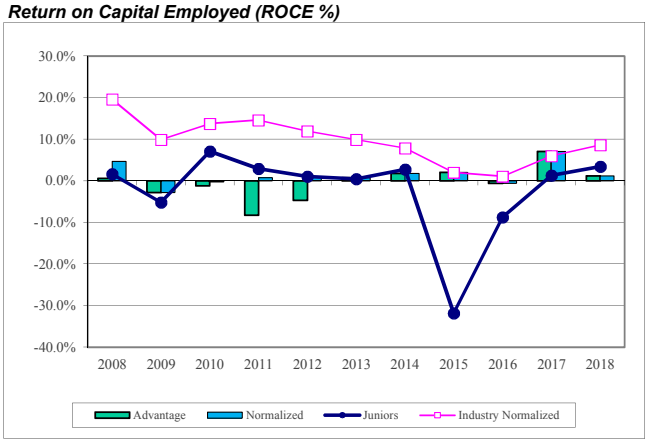
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

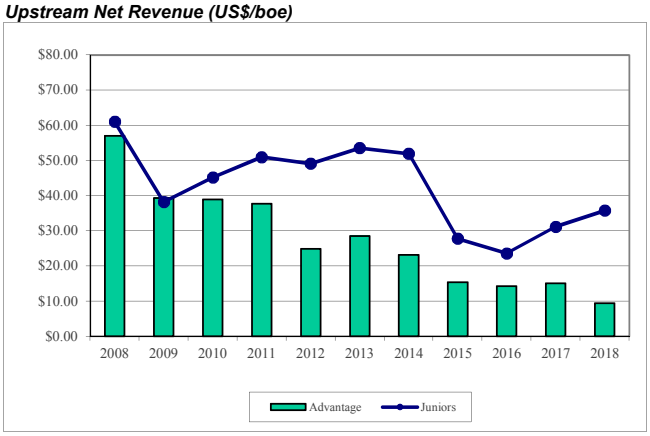
See pages F1 to F4 for analyst coverage.

Advantage Oil & Gas Ltd. (AAV - TSX)

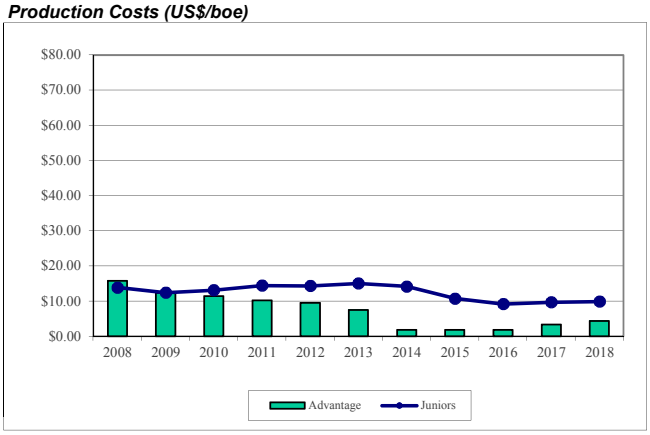
US$/boe, net

North America

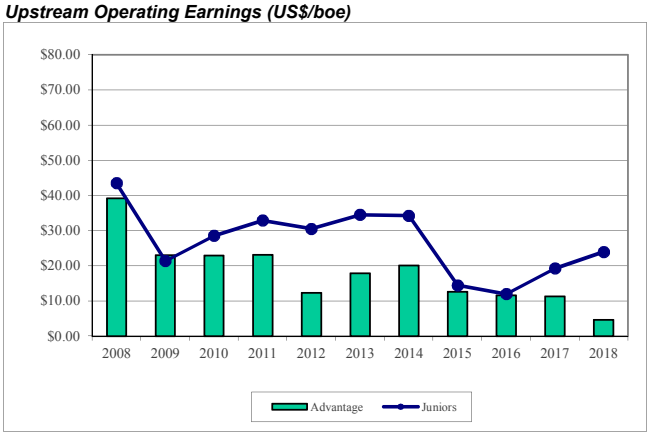
Upstream Net Revenue (US$/boe)



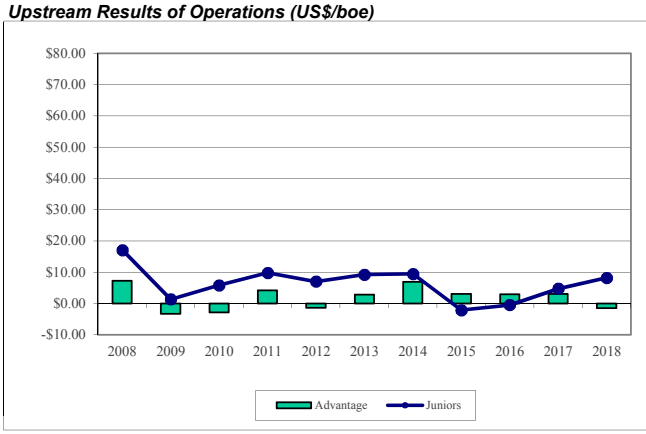
Production Costs (US$/boe)



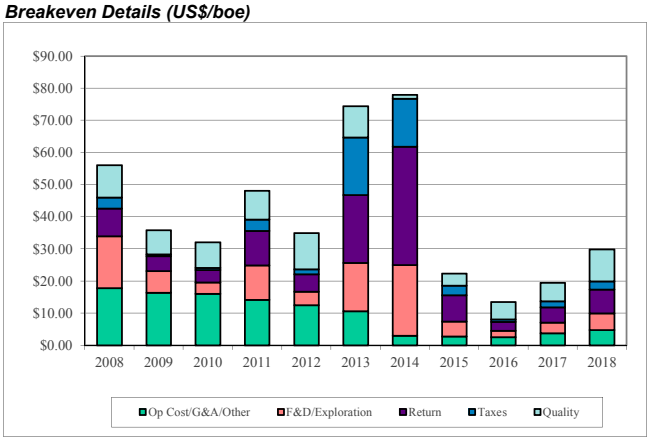
Upstream Operating Earnings (US$/boe)



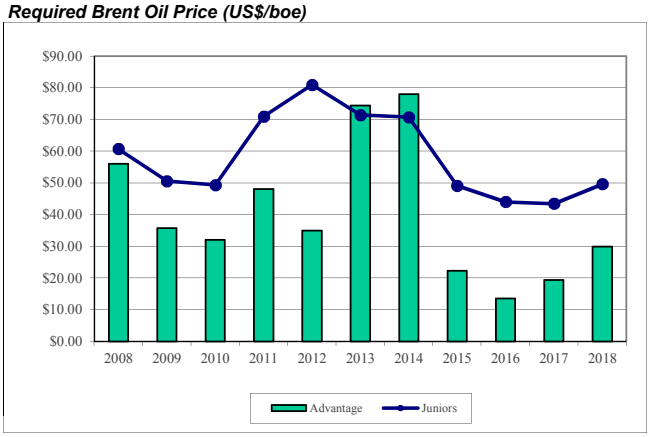
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Advantage Oil & Gas Ltd. (AAV - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	588	259	267	306	235	249	186	99	119	174	174
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	11	55	49	-	3	(14)	28	24	(10)	78	15
Total Revenue and Other Income	598	314	316	306	238	234	214	123	108	252	188
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	155	105	91	90	89	64	14	14	21	43	60
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	3	-	-	0	-	-	0	-
General and Administrative	21	35	36	35	28	27	9	8	8	6	7
Depreciation, Depletion and Amortization	285	226	210	155	132	108	77	68	88	91	92
Interest, net	45	32	28	30	26	25	13	9	7	6	9
Other	120	2	-	187	87	5	6	(0)	-	4	7
Earnings Before Income Tax	(27)	(85)	(50)	(194)	(126)	5	95	23	(15)	102	13
Current Income Taxes	2	1	1	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	(10)	(10)	(8)	(47)	(29)	2	28	6	(3)	29	5
Total Income Taxes	(8)	(8)	(7)	(47)	(29)	2	28	6	(3)	29	5
Minority Interest	-	-	-	(7)	8	(6)	-	-	-	-	-
Earnings From Continuing Operations	(19)	(76)	(43)	(155)	(89)	(3)	68	17	(12)	73	9
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	(53)	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(19)	(76)	(43)	(155)	(89)	(3)	14	17	(12)	73	9
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(19)	(76)	(43)	(155)	(89)	(3)	14	17	(12)	73	9

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(19)	(76)	(43)	(194)	(89)	5	95	23	(15)	102	13
Charges and Credits Not Impacting Cash	275	217	202	188	266	108	77	68	88	91	92
Other	77	30	5	223	(69)	23	(28)	4	53	(52)	8
Cash Flow From Operations	332	171	164	217	108	136	144	96	125	142	113
Change in Working Capital / Other	22	(18)	33	4	(1)	24	21	(7)	7	2	10
Net Cash From Operating Activities	353	152	197	221	107	160	165	89	132	144	124
Total Capital Expenditures	(241)	(151)	(217)	(238)	(202)	(181)	(204)	(150)	(96)	(176)	(165)
Acquisitions, net	(6)	-	68	1	14	54	(0)	-	-	-	-
Other	14	232	(18)	-	-	-	87	-	-	-	-
Net Cash From Investing Activities	(233)	81	(167)	(236)	(188)	(127)	(117)	(150)	(96)	(176)	(165)
Net Change in Debt	33	(296)	(29)	(121)	40	(2)	(40)	71	(101)	43	49
Net Issuance of Trust Units	1	85	-	-	72	-	-	-	72	-	2
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Distributions Paid	(153)	(21)	-	(6)	(13)	(15)	-	-	-	-	-
Other	(1)	(2)	(0)	142	(17)	(17)	(9)	(10)	(7)	(6)	(9)
Net Cash From Financing Activities	(120)	(233)	(30)	16	81	(33)	(49)	61	(36)	38	41
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(0)	0	0	0	-	0	0	-	-	5	(0)
Cash and Equivalents, Beginning of Year	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)	5
Cash and Equivalents, End of Year	(0)	(0)	0	0	(0)	(0)	(0)	(0)	(0)	5	5

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Advantage Oil & Gas Ltd. (AAV - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	132	84	72	49	263	34	51	41	22	54	51
Net Property, Plant and Equipment	2,041	1,613	1,717	1,899	1,609	1,600	1,244	1,133	1,096	1,236	1,306
Other Assets	1	0	-	48	43	80	22	14	13	14	10
Total Assets	2,175	1,698	1,789	1,996	1,915	1,714	1,318	1,188	1,131	1,304	1,367
Total Current Liabilities	243	176	178	143	223	99	152	18	36	39	30
Long-term Debt	676	334	351	312	352	344	100	224	116	161	209
Deferred Income Taxes	41	34	29	30	5	3	30	32	27	56	60
Other Liabilities and Deferred Credits	74	64	59	257	126	99	45	35	39	36	39
Total Liabilities	1,035	609	616	742	706	545	326	310	218	293	339
Minority Interests	-	-	-	108	138	126	-	-	-	-	-
Unitholders' Capital	1,958	1,929	2,136	2,241	2,231	2,165	2,024	1,752	1,763	1,805	1,808
Contributed Surplus (Paid-in Capital)	0	6	17	73	85	90	82	81	82	85	89
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	188	(864)	(995)	(1,177)	(1,253)	(1,219)	(1,123)	(954)	(932)	(878)	(869)
Accumulated Cash Distributions / Other	(1,006)	17	15	8	8	8	8	-	-	-	-
Total Shareholders' Equity	1,140	1,089	1,173	1,145	1,071	1,044	991	879	913	1,011	1,028
Total Liabilities and Shareholders' Equity	2,175	1,698	1,789	1,996	1,915	1,714	1,318	1,188	1,131	1,304	1,367
Return on Capital Employed (ROCE)	**0.6%**	**-2.8%**	**-1.2%**	**-8.3%**	**-4.7%**	**0.7%**	**1.8%**	**2.1%**	**-0.6%**	**7.0%**	**1.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$57.07	$39.38	$38.96	$37.69	$24.85	$28.56	$23.11	$15.42	$14.22	$15.10	$9.44	$12.77	$14.62
Production Costs	$15.72	$12.32	$11.43	$10.26	$9.49	$7.52	$1.86	$1.78	$1.85	$3.35	$4.33	$3.27	$2.85
Exploration	$0.00	$0.00	$0.00	$0.35	$0.00	$0.00	$0.01	$0.00	$0.00	$0.01	$0.00	$0.00	$0.00
DD&A	$28.95	$26.59	$26.28	$17.59	$14.07	$12.60	$10.31	$8.46	$7.87	$7.03	$6.59	$7.11	$7.77
G&A / Other	$2.16	$4.07	$4.58	$3.98	$3.00	$3.11	$1.16	$1.02	$0.73	$0.43	$0.49	$0.54	$0.70
Pre-tax Results of Operations	$10.24	-$3.60	-$3.33	$5.51	-$1.70	$5.33	$9.78	$4.16	$3.78	$4.28	-$1.97	$1.84	$3.30
Income Taxes	$2.95	-$0.36	-$0.45	$1.34	-$0.39	$2.45	$2.83	$1.11	$0.86	$1.20	-$0.49	$0.47	$0.87
Results of Operations	$7.30	-$3.24	-$2.88	$4.17	-$1.31	$2.89	$6.95	$3.05	$2.92	$3.07	-$1.48	$1.38	$2.43

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Advantage Oil & Gas Ltd. (AAV - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	103.0	91.8	94.3	112.0	123.2	114.1	122.6	132.1	179.1	206.7	222.2	202.7	172.6
Liquids Production (b/d)	9,804	8,023	6,123	5,431	5,253	4,454	125	127	728	981	1,173	961	627
Total Production (boe/d)	26,971	23,315	21,842	24,095	25,789	23,478	20,565	22,151	30,584	35,423	38,212	34,740	29,387
% Gas Production	64%	66%	72%	77%	80%	81%	99%	99%	98%	97%	97%	97%	98%
% Oil Production	36%	34%	28%	23%	20%	19%	1%	1%	2%	3%	3%	3%	2%
Proven Reserves:													
Closing Gas Reserves (bcf)	342.0	445.2	683.5	743.9	950.9	958.9	1,034.3	1,139.5	1,297.7	1,535.1	1,638.8	1,490.5	1,329.1
Closing Oil Reserves (mmbbls)	27.5	19.7	17.6	17.8	19.3	18.8	6.7	9.8	12.3	18.6	22.7	17.9	14.0
Closing Total Proven Reserves (mmboe)	84.5	93.9	131.5	141.8	177.8	178.6	179.1	199.7	228.6	274.5	295.9	266.3	235.5
% Gas Reserves	67%	79%	87%	87%	89%	89%	96%	95%	95%	93%	92%	93%	94%
% Oil Reserves	33%	21%	13%	13%	11%	11%	4%	5%	5%	7%	8%	7%	6%
Proven Reserve Life Index	8.6	11.0	16.3	16.1	18.7	20.7	24.0	24.9	20.6	21.3	21.4	21.1	22.4
Proven Reserve Additions:													
Gas Additions (bcf)	86.2	119.6	246.9	140.8	203.7	45.7	123.3	147.2	273.7	311.3	154.0	738.9	1,009.4
Oil Additions (mmbbls)	1.1	(5.4)	0.0	1.7	3.6	1.5	-10.8	3.0	3.0	6.4	5.0	14.4	6.6
Total Additions (mmboe)	15.4	14.6	41.1	25.2	37.6	9.1	9.7	27.5	48.6	58.3	30.7	137.6	174.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions	10.1	29.3	23.6	3.6	16.1	19.4	6.1	15.3	23.9	35.1	20.9	79.9	101.3
Net Acquisitions	0.4	(16.0)	(3.8)	0.0	(0.2)	(19.4)	(16.0)	-	-	0.0	-	0.0	(15.9)
Revisions of Estimates	4.9	1.2	21.4	21.5	21.7	9.1	19.5	12.3	24.7	23.2	9.8	57.7	89.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	65.6%	201.4%	57.4%	14.5%	42.9%	213.3%	63.1%	55.4%	49.2%	60.2%	68.1%	58.1%	57.9%
Net Acquisitions	2.3%	-109.7%	-9.3%	0.0%	-0.6%	-213.0%	-163.9%	0.0%	0.0%	0.0%	0.0%	0.0%	-9.1%
Revisions of Estimates	32.1%	8.3%	51.9%	85.5%	57.7%	99.7%	200.8%	44.6%	50.8%	39.8%	31.9%	41.9%	51.2%
Additions as % of Production:													
Gas	229.3%	357.2%	717.3%	344.4%	453.0%	109.6%	275.5%	305.2%	418.6%	412.7%	189.8%	333.0%	320.5%
Oil	29.4%	-183.9%	-0.3%	86.6%	189.6%	91.0%	-23636.9%	6465.4%	1121.3%	1797.7%	1171.3%	1371.8%	578.3%
Total	156.6%	171.0%	516.1%	286.3%	399.3%	106.1%	129.7%	340.6%	435.3%	451.0%	220.0%	361.7%	326.0%
Additions as % of Reserves:													
Gas	25.2%	26.9%	36.1%	18.9%	21.4%	4.8%	11.9%	12.9%	21.1%	20.3%	9.4%	49.6%	75.9%
Oil	3.8%	-27.3%	0.0%	9.7%	18.9%	7.9%	-162.3%	30.7%	24.2%	34.6%	22.1%	80.7%	47.2%
Total	18.2%	15.5%	31.3%	17.8%	21.1%	5.1%	5.4%	13.8%	21.3%	21.2%	10.4%	51.7%	74.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$21.3	$1.8	$4.2	$1.7	$0.0	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Exploration & Development	$219.8	$148.7	$212.7	$255.4	$174.8	$183.5	$211.4	$128.3	$92.2	$186.3	$155.7	$434.2	$773.9
Net Acquisitions	$6.3	-$215.9	-$67.7	$1.9	-$13.6	-$46.5	$2.9	$0.9	$4.5	$5.6	$1.6	$11.7	$15.6
Total Expenditures	$247.4	-$65.4	$149.2	$259.1	$161.2	$137.1	$214.4	$129.2	$96.7	$191.8	$157.3	$445.9	$789.4
Expenditures as % of Total:													
Land & Seismic	8.6%	-2.8%	2.8%	0.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	88.9%	-227.2%	142.5%	98.6%	108.4%	133.9%	98.6%	99.3%	95.3%	97.1%	99.0%	97.4%	98.0%
Net Acquisitions	2.5%	330.0%	-45.4%	0.7%	-8.4%	-33.9%	1.4%	0.7%	4.7%	2.9%	1.0%	2.6%	2.0%
Cashflow (US$million)	331.9	170.5	164.0	216.5	107.5	136.0	144.4	95.7	125.4	141.6	113.4	380.3	620.5
Cashflow (US$/boe)	$33.71	$20.04	$20.57	$24.62	$11.42	$15.87	$19.24	$11.84	$11.23	$10.95	$8.13	$10.00	$11.57
Recycle Ratio	2.1x	-4.5x	5.7x	2.4x	2.7x	1.1x	0.9x	2.5x	5.6x	3.3x	1.6x	3.1x	2.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$16.00	$4.93	$4.82	$10.22	$4.62	$6.45	$8.23	$4.66	$1.90	$3.19	$5.08	$3.16	$4.06
Net Acquisition Costs	$17.89	$13.53	$17.74	$495.34	$65.47	$2.40	-$0.18	na	na	$474.12	na	$999.01	-$0.98
All Sources (incl. revisions)	$16.04	-$4.50	$3.63	$10.29	$4.29	$15.08	$22.02	$4.69	$1.99	$3.29	$5.13	$3.24	$4.51
Exploration & Development (excl. revisions)	$23.82	$5.13	$9.18	$70.53	$10.85	$9.47	$34.44	$8.41	$3.85	$5.31	$7.45	$5.43	$7.64
Net Acquisition Costs	$17.89	$13.53	$17.74	$495.34	$65.47	$2.40	-$0.18	na	na	$474.12	na	$999.01	-$0.98
All Sources (excl. revisions)	$23.62	-$4.90	$7.54	$70.99	$10.14	nm	nm	$8.47	$4.04	$5.47	$7.53	$5.58	$9.25

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Advantage Oil & Gas Ltd. (AAV - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.72	12.32	11.43	10.26	9.49	7.52	1.86	1.78	1.85	3.35	4.33	3.27	2.85
Exploration Expense	-	-	-	0.35	-	-	0.01	-	-	0.01	-	0.00	0.00
G&A/Other	2.16	4.07	4.58	3.98	3.00	3.11	1.16	1.02	0.73	0.43	0.49	0.54	0.70
F&D Costs (1-Year)	16.04	6.73	3.63	10.29	4.29	15.08	22.02	4.69	1.99	3.29	5.13	3.24	4.51
Return on Capital	8.62	4.65	3.86	10.78	5.35	21.09	36.75	8.18	2.77	4.78	7.48	4.65	6.92
Income Taxes	3.48	0.52	0.60	3.47	1.58	17.87	14.97	2.97	0.81	1.87	2.49	1.57	2.47
Breakeven Oil Price	**46.02**	**28.29**	**24.11**	**39.13**	**23.70**	**64.66**	**76.77**	**18.64**	**8.14**	**13.73**	**19.92**	**13.27**	**17.45**
Quality Differential	10.00	7.51	8.02	9.00	11.31	9.77	1.23	3.74	5.40	5.70	10.00	7.03	5.21
Required Brent Price	**56.02**	**35.80**	**32.13**	**48.13**	**35.01**	**74.43**	**78.00**	**22.38**	**13.55**	**19.43**	**29.92**	**20.31**	**22.66**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.65	19.28	21.18	23.95	27.60	20.13	6.22	5.15	6.87	11.36	18.75	12.39	10.13
Exploration Expense	-	-	-	0.82	-	-	0.02	-	-	0.03	-	0.01	0.01
G&A/Other	2.97	6.37	8.48	9.29	8.72	8.32	3.87	2.96	2.70	1.45	2.13	2.04	2.48
F&D Costs (1-Year)	26.77	11.71	10.06	32.97	16.78	42.79	63.74	11.35	6.23	9.26	15.24	9.57	14.84
Return on Capital	14.00	7.13	8.80	28.01	15.81	48.42	114.00	21.44	9.38	14.95	26.07	15.44	25.25
Income Taxes	5.66	0.79	1.38	9.02	4.65	41.02	46.45	7.77	2.75	5.87	8.69	5.23	9.00
Breakeven Oil Price	**71.05**	**45.28**	**49.90**	**104.06**	**73.56**	**160.68**	**234.31**	**48.67**	**27.93**	**42.92**	**70.89**	**44.69**	**61.71**
Quality Differential	13.77	11.76	14.87	21.01	32.91	26.16	4.12	10.82	20.07	19.30	25.00	21.46	15.86
Required Brent Price	**84.82**	**57.04**	**64.76**	**125.06**	**106.46**	**186.84**	**238.43**	**59.48**	**48.00**	**62.23**	**95.89**	**66.14**	**77.57**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.65	19.28	21.18	23.95	27.60	20.13	6.22	5.15	6.87	11.36	18.75	12.39	10.13
Exploration Expense	-	-	-	0.82	-	-	0.02	-	-	0.03	-	0.01	0.01
G&A/Other	2.97	6.37	8.48	9.29	8.72	8.32	3.87	2.96	2.70	1.45	2.13	2.04	2.48
F&D Costs (1-Year)	65.82	43.48	43.18	57.11	40.48	60.24	64.33	23.12	14.81	22.08	26.10	20.99	30.09
Return on Capital	34.57	26.57	37.76	48.69	38.10	68.34	115.96	44.84	21.05	34.62	44.43	32.86	50.73
Income Taxes	13.98	2.94	5.90	15.67	11.22	57.90	47.25	16.26	6.17	13.58	14.81	11.12	18.09
Breakeven Oil Price	**138.98**	**98.65**	**116.51**	**155.54**	**126.12**	**214.93**	**237.65**	**92.33**	**51.60**	**83.12**	**106.22**	**79.41**	**111.53**
Quality Differential	13.77	11.76	14.87	21.01	32.91	26.16	4.12	10.82	20.07	19.30	25.00	21.46	15.86
Required Brent Price	**152.75**	**110.41**	**131.38**	**176.55**	**159.02**	**241.09**	**241.77**	**103.15**	**71.67**	**102.42**	**131.22**	**100.87**	**127.39**

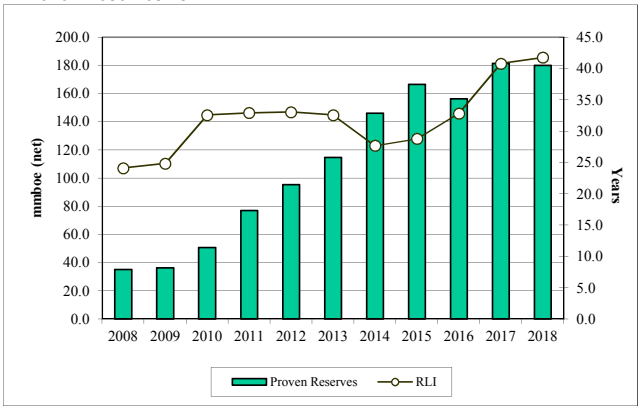
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

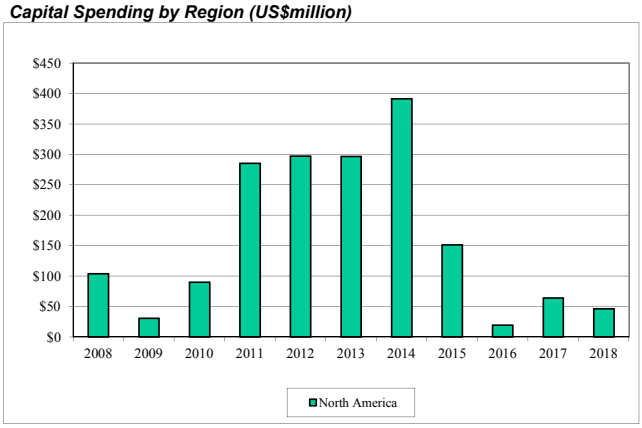
Approach Resources (AREX - NASDAQ) US$, net

- Approach reported results of operations of $4.24/boe in 2018 compared to $0.67/boe in 2017.
- One-year F&D costs came in at $16.50/boe. On a realized oil:gas price ratio basis, F&D costs were $13.96/boe compared to $3.05/boe last year, while the costs for PD reserves rose to $14.75/boe from $7.31/boe the previous year.
- Approach's 2018 operations imply a required Brent breakeven oil price of $100.98/boe on a realized ratio basis on total proved reserves, while PD cost assessment suggests a Brent breakeven oil price of $109.67/boe.
- The company reported a return on capital of 0.1% in 2018 versus a loss of 4.5% in 2017.

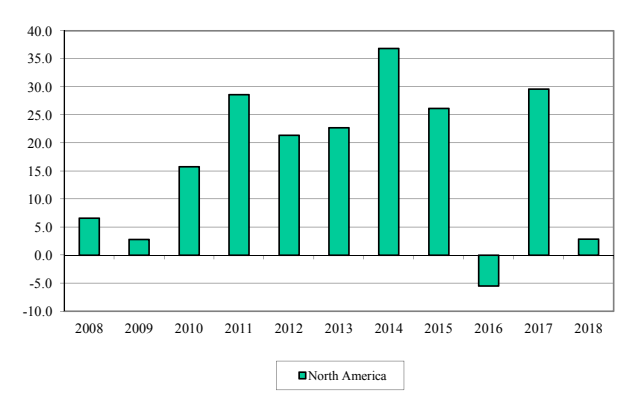
Proven Reserves vs RLI



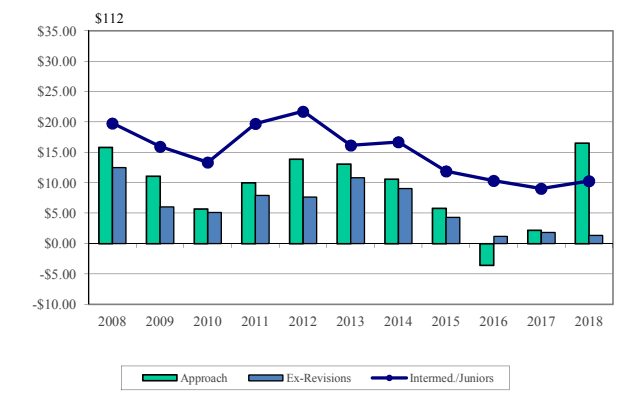
Capital Spending by Region (US$million)



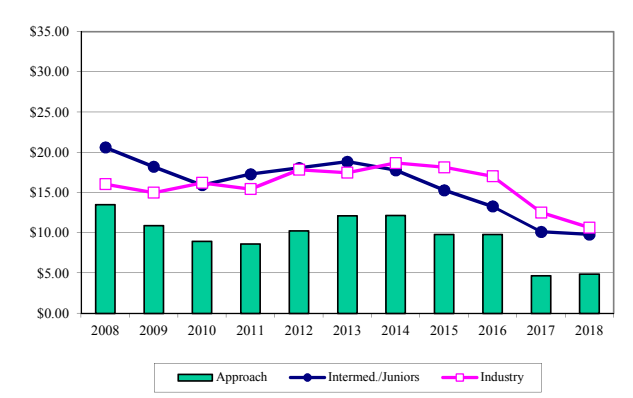
Proven Reserve Additions by Region (million boe)



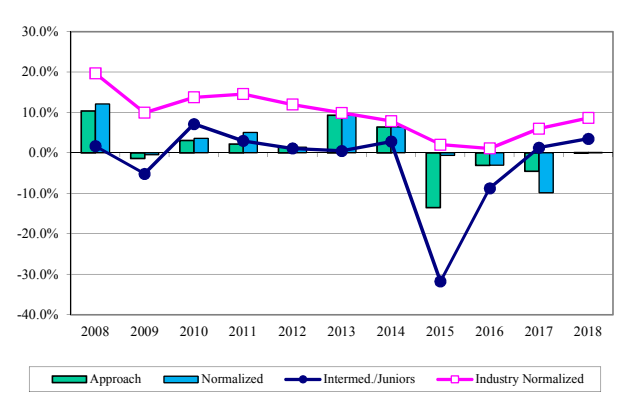
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

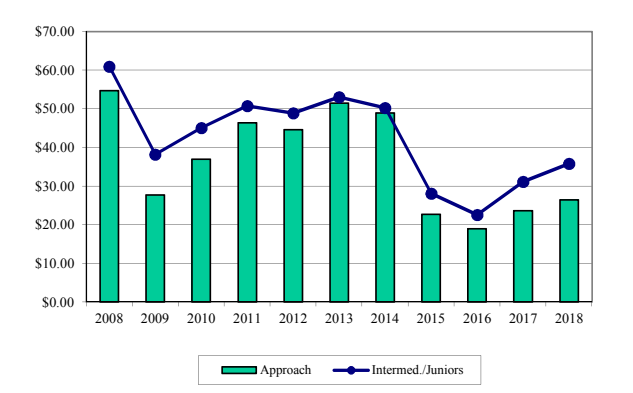
See pages F1 to F4 for analyst coverage.

Approach Resources (AREX - NASDAQ)

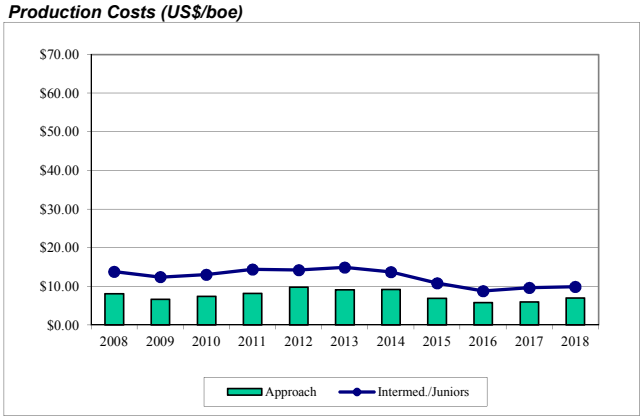
US$/boe, net

North America

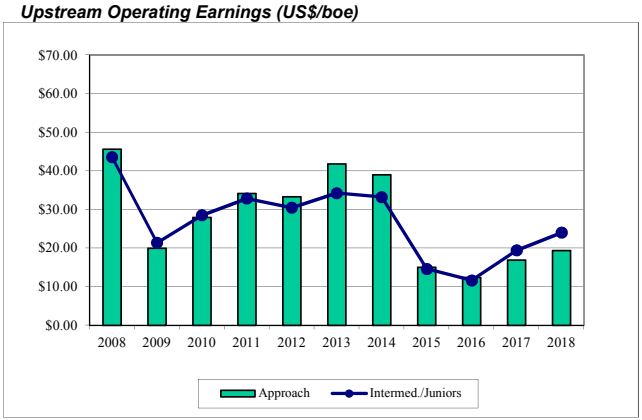
Upstream Net Revenue (US$/boe)



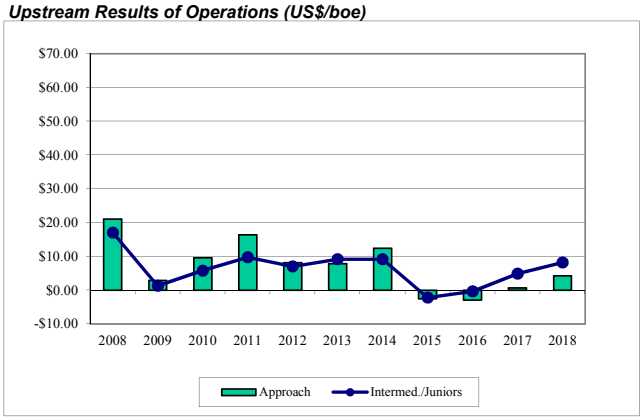
Production Costs (US$/boe)



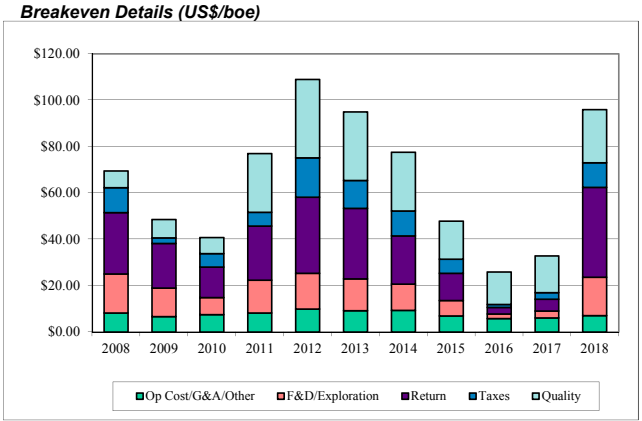
Upstream Operating Earnings (US$/boe)



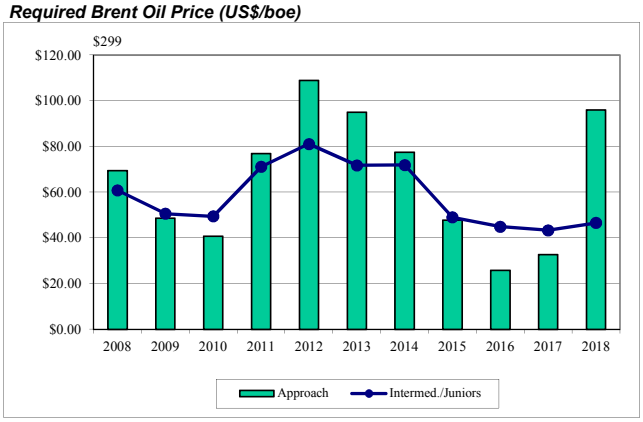
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Approach Resources (AREX - NASDAQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	80	41	58	108	129	181	259	131	90	105	114
Midstream / Downstream Revenue	-	-	-	-							
Other	-	-	-	-							
Total Revenue and Other Income	80	41	58	108	129	181	259	131	90	105	114
Crude Oil and Product Purchases											
Production and Transportation Expenses	12	10	12	19	28	32	49	40	27	27	30
Marketing Expenses	-	-	-	-					-	-	-
Exploration / Dry Hole Costs	1	2	3	10	5	2	4	4	4	4	0
General and Administrative	9	11	11	18	25	27	32	28	25	24	21
Depreciation, Depletion and Amortization	24	25	22	32	60	77	107	109	79	71	61
Interest, net	1	2	2	3	5	14	22	25	27	21	25
Other	(3)	(2)	(4)	15	(4)	(85)	(44)	192	5	(5)	0
Earnings Before Income Tax	35	(6)	12	11	10	115	90	(268)	(77)	(36)	(24)
Current Income Taxes	-	-	-	-	-	0	(0)	(0)	-	(0)	(0)
Future Income Taxes	12	(1)	4	3	3	42	34	(93)	(24)	76	(4)
Total Income Taxes	12	(1)	4	3	3	43	34	(93)	(24)	76	(4)
Minority Interest	-	-	-	-						-	-
Earnings From Continuing Operations	23	(5)	7	7	6	72	56	(174)	(52)	(112)	(20)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	23	(5)	7	7	6	72	56	(174)	(52)	(112)	(20)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	23	(5)	7	7	6	72	56	(174)	(52)	(112)	(20)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	23	(5)	7	7	6	72	56	(174)	(52)	(112)	(20)
Charges and Credits Not Impacting Cash	43	27	29	54	64	119	141	16	55	147	57
Other	(5)	13	4	14	8	(77)	(23)	254	24	(0)	(2)
Cash Flow From Operations	62	35	41	76	78	114	174	96	26	35	35
Change in Working Capital / Other	(6)	5	2	20	12	11	6	7	0	3	(0)
Net Cash From Operating Activities	56	40	42	96	91	126	180	103	26	37	35
Total Capital Expenditures	(100)	(29)	(91)	(285)	(297)	(296)	(391)	(151)	(20)	(47)	(47)
Acquisitions, net	-	-	-	0	-	-	-	-	-		
Other	(1)	(1)	(0)	(1)	(10)	93	4	(66)	(4)	(5)	4
Net Cash From Investing Activities	(101)	(30)	(91)	(285)	(307)	(203)	(386)	(217)	(24)	(52)	(43)
Net Change in Debt	44	(12)	(33)	43	62	136	150	123	-	17	10
Net Change in Common Stock	0	-	103	123	155	0	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	(2)	(8)	(3)	(2)	(2)
Net Cash From Financing Activities	44	(12)	70	166	217	136	148	115	(3)	15	8
Effect of Exchange Rate on Cash	(0)	0	0	(0)	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(1)	(1)	21	(23)	0	58	(58)	0	(1)	(0)	0
Cash and Equivalents, Beginning of Year	5	4	3	23	0	1	59	0	1	0	0
Cash and Equivalents, End of Year	4	3	23	0	1	59	0	1	0	0	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Approach Resources (AREX - NASDAQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	35	12	41	11	16	90	61	20	12	17	16
Net Property, Plant and Equipment	303	304	369	595	828	1,047	1,332	1,155	1,092	1,083	1,068
Other Assets		2	3	1	12	8	9	-	-	0	-
Total Assets	338	319	413	608	856	1,145	1,401	1,175	1,105	1,100	1,085
Total Current Liabilities	31	22	29	44	60	84	107	29	26	25	21
Long-term Debt	44	32	-	44	106	250	400	497	498	373	385
Deferred Income Taxes	36	38	45	46	49	92	111	32	6	82	78
Other Liabilities and Deferred Credits	-	6	6	7	7	9	10	10	11	12	12
Total Liabilities	114	98	80	140	222	435	627	567	542	492	495
Minority Interests	-	-	-	-						-	-
Common Shares	0	0	0	0	0	0	0	0	0	1	1
Contributed Surplus (Paid-in Capital)	167	169	274	401	560	565	573	581	586	742	744
Preferred Stock			-	-	-	-	-	-	-	-	-
Retained Earnings	57	52	59	66	73	145	201	27	(24)	(136)	(156)
Other / Comprehensive Income (Loss)	(0)	(0)	(0)	-	-	-	-	-		-	-
Total Shareholders' Equity	224	220	333	467	633	710	774	608	563	607	589
Total Liabilities and Shareholders' Equity	338	319	413	608	856	1,145	1,401	1,175	1,105	1,100	1,085
Return on Capital Employed (ROCE)	**10.4%**	**-1.4%**	**3.0%**	**2.2%**	**1.4%**	**9.3%**	**6.4%**	**-13.5%**	**-3.1%**	**-4.5%**	**0.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$54.74	$27.68	$37.00	$46.37	$44.63	$51.54	$48.96	$22.70	$18.97	$23.67	$26.45	$22.90	$28.45
Production Costs	$8.10	$6.66	$7.42	$8.19	$9.78	$9.09	$9.21	$6.92	$5.77	$5.96	$6.97	$6.22	$7.03
Exploration	$1.01	$1.10	$1.66	$4.08	$1.58	$0.64	$0.73	$0.77	$0.82	$0.82	$0.10	$0.59	$0.66
DD&A	$16.00	$16.66	$14.13	$13.63	$20.91	$21.88	$20.23	$18.89	$16.61	$15.84	$13.98	$15.52	$17.32
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Earnings	$29.63	$3.27	$13.79	$20.47	$12.36	$19.93	$18.80	-$3.88	-$4.23	$1.04	$5.40	$0.58	$3.44
Income Taxes	$8.59	$0.38	$4.19	$4.08	$4.20	$12.08	$6.38	-$1.32	-$1.35	$0.37	$1.17	$0.02	$1.07
Results of Operations	$21.04	$2.89	$9.59	$16.39	$8.16	$7.85	$12.42	-$2.57	-$2.88	$0.67	$4.24	$0.56	$2.37

Source: BMO Capital Markets, Company Reports

Approach Resources (AREX - NASDAQ)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	19.4	17.3	17.2	17.4	16.7	18.5	29.5	36.3	32.1	30.5	29.6	30.8	31.6
Liquids Production (b/d)	759	1,137	1,392	3,507	5,132	6,562	9,548	9,797	7,682	7,104	6,885	7,224	8,203
Total Production (boe/d)	3,997	4,023	4,264	6,404	7,912	9,638	14,467	15,853	13,040	12,195	11,813	12,349	13,474
% Gas Production	81%	72%	67%	45%	35%	32%	34%	38%	41%	42%	42%	42%	39%
% Oil Production	19%	28%	33%	55%	65%	68%	66%	62%	59%	58%	58%	58%	61%
Proven Reserves:													
Closing Gas Reserves (bcf)	172.9	168.3	150.4	178.8	174.8	216.0	300.0	376.0	352.3	441.2	426.4	406.6	379.2
Closing Oil Reserves (mmbbls)	6.4	8.4	25.7	47.2	66.4	78.7	96.2	104.0	97.7	108.0	109.0	104.9	103.0
Closing Total Proven Reserves (mmboe)	35.2	36.5	50.7	77.0	95.5	114.7	146.2	166.6	156.4	181.5	180.1	172.7	166.2
% Gas Reserves	82%	77%	49%	39%	31%	31%	34%	38%	38%	41%	39%	39%	38%
% Oil Reserves	18%	23%	51%	61%	69%	69%	66%	62%	62%	59%	61%	61%	62%
Proven Reserve Life Index	24.1	24.8	32.6	32.9	33.1	32.6	27.7	28.8	32.9	40.8	41.8	38.5	34.4
Proven Reserve Additions:													
Gas Additions (bcf)	18.8	1.8	-11.7	34.8	2.0	48.0	94.8	89.2	-12.0	100.1	-4.0	84.1	268.1
Oil Additions (mmbbls)	3.4	2.5	17.7	22.8	21.1	14.7	21.1	11.3	-3.5	12.9	3.5	12.9	45.3
Total Additions (mmboe)	6.6	2.8	15.8	28.6	21.4	22.7	36.9	26.2	-5.5	29.6	2.8	26.9	90.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	7.0	5.1	15.6	25.5	38.9	27.3	43.2	34.9	16.7	33.3	35.0	84.9	163.1
Net Acquisitions	1.3	-	2.0	10.5	0.0	0.1	0.0	0.0	0.0	1.6	0.0	1.6	1.6
Revisions of Estimates	-1.8	(2.3)	(1.7)	(7.4)	(17.5)	(4.7)	(6.4)	(8.7)	(22.2)	(5.3)	(32.1)	(59.5)	(74.6)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	107.2%	182.4%	98.7%	89.3%	181.7%	120.2%	117.3%	133.3%	-302.2%	112.4%	1233.8%	315.1%	181.2%
Net Acquisitions	19.6%	0.0%	12.4%	36.7%	0.0%	0.5%	0.0%	0.0%	0.0%	5.3%	0.0%	5.8%	1.7%
Revisions of Estimates	-26.7%	-82.4%	-11.1%	-26.0%	-81.7%	-20.7%	-17.3%	-33.3%	402.2%	-17.8%	-1133.8%	-221.0%	-82.9%
Additions as % of Production:													
Gas	265.2%	28.3%	-185.3%	547.9%	33.5%	712.2%	879.9%	672.8%	-102.1%	897.9%	-37.0%	249.8%	464.6%
Oil	1240.4%	597.6%	3489.4%	1781.6%	1123.9%	613.9%	604.6%	316.4%	-125.3%	498.9%	139.2%	163.4%	302.6%
Total	450.4%	189.2%	1014.1%	1223.4%	740.7%	645.2%	698.2%	452.5%	-115.7%	665.4%	65.7%	199.2%	366.0%
Additions as % of Reserves:													
Gas	10.9%	1.1%	-7.7%	19.4%	1.2%	22.2%	31.6%	23.7%	-3.4%	22.7%	-0.9%	20.7%	70.7%
Oil	54.0%	29.4%	69.1%	48.3%	31.7%	18.7%	21.9%	10.9%	-3.6%	12.0%	3.2%	12.3%	44.0%
Total	18.7%	7.6%	31.1%	37.2%	22.4%	19.8%	25.2%	15.7%	-3.5%	16.3%	1.6%	15.6%	54.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$5.0	$1.5	$2.9	$10.0	$4.6	$2.2	$3.8	$4.4	$3.9	$3.7	$0.4	$8.0	$16.3
Development	$84.2	$28.1	$72.5	$234.0	$285.0	$287.9	$383.0	$146.2	$15.9	$43.2	$45.9	$105.0	$634.2
Net Acquisitions	$14.9	$1.1	$14.6	$41.8	$7.7	$6.9	$4.6	$0.7	$0.0	$17.6	$0.4	$18.0	$23.2
Total Expenditures	$104.1	$30.7	$90.0	$285.8	$297.3	$297.0	$391.4	$151.3	$19.8	$64.4	$46.8	$131.0	$673.7
Expenditures as % of Total:													
Exploration	4.8%	4.8%	3.2%	3.5%	1.5%	0.8%	1.0%	2.9%	19.8%	5.7%	0.9%	6.1%	2.4%
Development	80.9%	91.5%	80.6%	81.9%	95.9%	96.9%	97.9%	96.6%	80.1%	67.1%	98.2%	80.2%	94.1%
Net Acquisitions	14.3%	3.7%	16.2%	14.6%	2.6%	2.3%	1.2%	0.4%	0.1%	27.3%	0.9%	13.7%	3.4%
Cashflow (US$million)	$55.5	$30.3	$39.5	$79.7	$88.5	$106.8	$176.2	$98.9	$69.2	$77.2	$79.0	$225.4	$500.5
Cashflow (US$/boe)	$38.05	$20.65	$25.39	$34.10	$30.64	$30.36	$33.37	$17.09	$14.55	$17.34	$18.31	$16.67	$20.35
Recycle Ratio	2.4x	1.9x	4.5x	3.4x	2.2x	2.3x	3.1x	3.0x	-4.0x	8.0x	1.1x	3.4x	2.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$16.88	$10.66	$5.45	$13.48	$13.54	$12.84	$10.49	$5.75	-$3.60	$1.67	$16.36	$4.45	$7.36
Net Acquisition Costs	$11.58	na	$7.45	$3.98	na	$63.00	na	na	na	$11.17	na	nm	nm
All Sources (incl. revisions)	$15.84	$11.07	$5.70	$9.99	$13.90	$13.08	$10.62	$5.78	-$3.60	$2.17	$16.50	$4.86	$7.49
Exploration & Development (excl. revisions)	$12.67	$5.84	$4.84	$9.55	$7.45	$10.63	$8.94	$4.32	$1.19	$1.41	$1.33	$1.33	$3.99
Net Acquisition Costs	$11.58	na	$7.45	$3.98	na	$63.00	na	na	na	$11.17	na	nm	nm
All Sources (excl. revisions)	$12.50	$6.07	$5.13	$7.93	$7.65	$10.84	$9.05	$4.34	$1.19	$1.85	$1.34	$1.51	$4.09

Source: BMO Capital Markets, Company Reports

Approach Resources (AREX - NASDAQ)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	8.10	6.66	7.42	8.19	9.78	9.09	9.21	6.92	5.77	5.96	6.97	6.22	7.03
Exploration Expense	1.01	1.10	1.66	4.08	1.58	0.64	0.73	0.77	0.82	0.82	0.10	0.59	0.66
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	15.84	11.07	5.70	9.99	13.90	13.08	10.62	5.78	1.19	2.17	16.50	6.62	7.25
Return on Capital	26.49	19.25	13.21	23.45	32.87	30.52	20.86	11.83	2.79	5.11	38.76	15.43	15.90
Income Taxes	10.81	2.51	5.78	5.84	16.93	11.94	10.72	6.08	1.30	2.81	10.67	6.50	7.27
Breakeven Oil Price	**62.25**	**40.59**	**33.77**	**51.55**	**75.07**	**65.28**	**52.14**	**31.37**	**11.88**	**16.89**	**73.00**	**35.36**	**38.11**
Quality Differential	7.16	7.95	6.98	25.32	33.78	29.64	25.33	16.43	13.91	15.82	22.92	17.55	18.88
Required Brent Price	**69.41**	**48.53**	**40.75**	**76.87**	**108.84**	**94.91**	**77.47**	**47.80**	**25.78**	**32.70**	**95.92**	**52.90**	**56.99**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	11.25	9.99	11.61	12.17	13.21	11.59	11.59	8.51	7.16	7.58	10.30	8.20	9.02
Exploration Expense	1.41	1.66	2.60	6.07	2.13	0.81	0.91	0.94	1.02	1.04	0.14	0.78	0.85
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	18.97	11.65	5.35	11.71	14.06	17.17	14.32	7.99	1.41	3.05	13.96	6.14	8.15
Return on Capital	31.70	19.39	14.11	29.10	34.73	40.14	27.96	16.48	3.36	7.30	33.48	14.65	18.32
Income Taxes	12.94	2.53	6.17	7.25	17.89	15.71	14.37	8.47	1.57	4.01	9.22	6.17	8.37
Breakeven Oil Price	**76.26**	**45.23**	**39.84**	**66.31**	**82.03**	**85.41**	**69.15**	**42.38**	**14.52**	**22.99**	**67.10**	**35.94**	**44.70**
Quality Differential	9.94	11.93	10.92	37.65	45.61	37.77	31.87	20.18	17.24	20.10	33.88	23.74	24.66
Required Brent Price	**86.20**	**57.16**	**50.75**	**103.95**	**127.64**	**123.18**	**101.02**	**62.57**	**31.77**	**43.09**	**100.98**	**59.68**	**69.36**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	11.25	9.99	11.61	12.17	13.21	11.59	11.59	8.51	7.16	7.58	10.30	8.20	9.02
Exploration Expense	1.41	1.66	2.60	6.07	2.13	0.81	0.91	0.94	1.02	1.04	0.14	0.78	0.85
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	24.09	126.22	8.03	34.93	109.15	24.37	25.61	29.85	16.43	7.31	14.75	9.93	18.79
Return on Capital	39.57	205.99	24.94	100.03	306.14	63.49	52.13	65.16	44.10	19.66	39.67	26.60	46.11
Income Taxes	16.15	26.89	10.90	24.93	157.70	24.84	26.79	33.48	20.61	10.81	10.92	11.21	21.07
Breakeven Oil Price	**92.47**	**370.75**	**58.08**	**178.14**	**588.33**	**125.10**	**117.03**	**137.94**	**89.32**	**46.41**	**75.80**	**56.72**	**95.83**
Quality Differential	9.94	11.93	10.92	37.65	45.61	37.77	31.87	20.18	17.24	20.10	33.88	23.74	24.66
Required Brent Price	**102.41**	**382.69**	**69.00**	**215.79**	**633.94**	**162.88**	**148.90**	**158.12**	**106.56**	**66.51**	**109.67**	**80.46**	**120.48**

Source: BMO Capital Markets, Company Reports

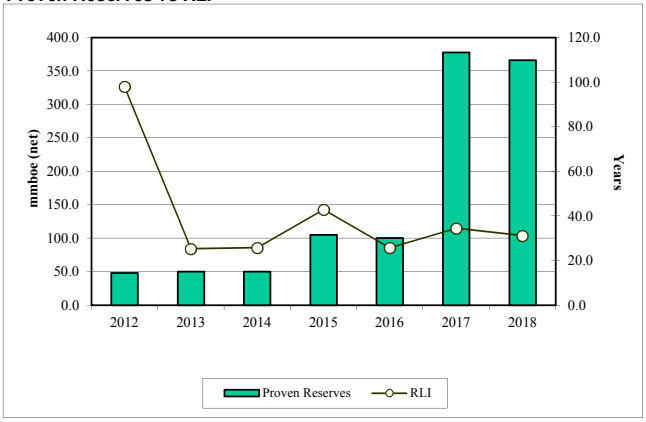
See pages F1 to F4 for analyst coverage.

Athabasca Oil (ATH - TSX) US$, net

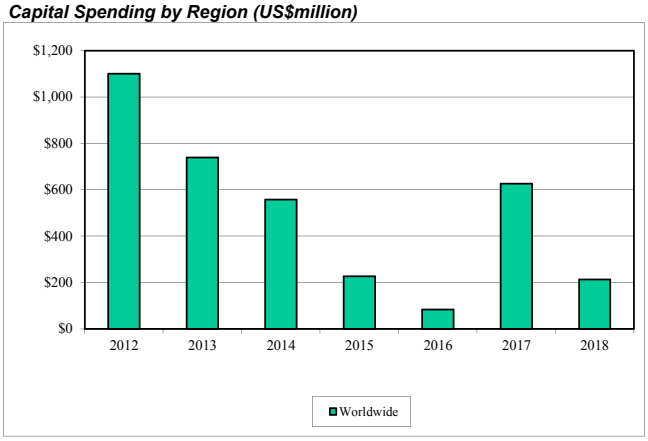
- Athabasca reported a loss from operations of $3.76/boe in 2018 versus a gain from operations of $1.89/boe last year.
- One-year F&D costs increased to $14.07/boe from $2.13/boe in 2017. On a realized oil:gas price ratio basis, F&D costs rose to $13.03/boe from $2.58/boe last year, while costs for PD reserves improved to $19.85/boe from $27.40/boe.
- Athabasca's 2018 costs imply a required Brent breakeven oil price of $95.23/boe on total proved reserves, while its PD costs imply a Brent breakeven of $120.40/boe.
- The company reported a loss on capital of 31.9% in 2018 relative to a normalized loss of 0.3% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

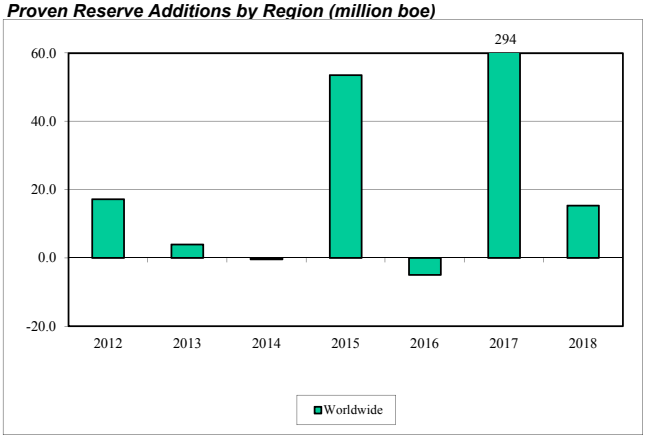
Proven Reserves vs RLI



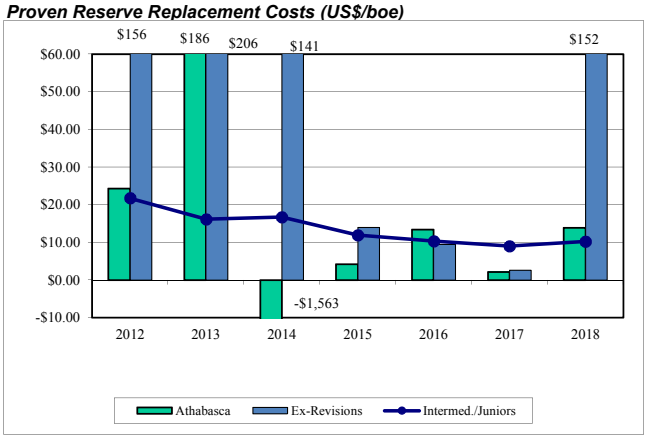
Capital Spending by Region (US$million)



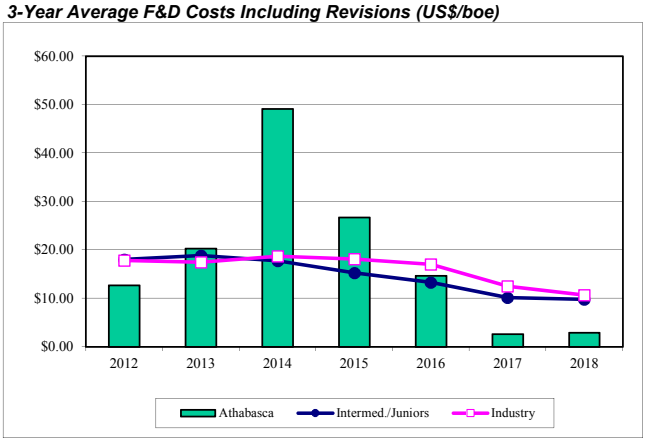
Proven Reserve Additions by Region (million boe)



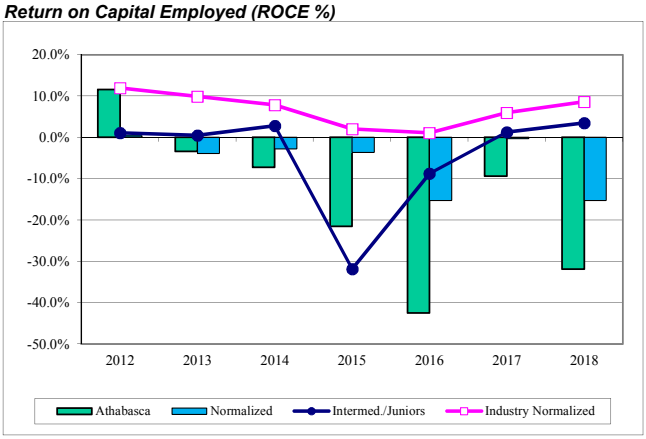
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



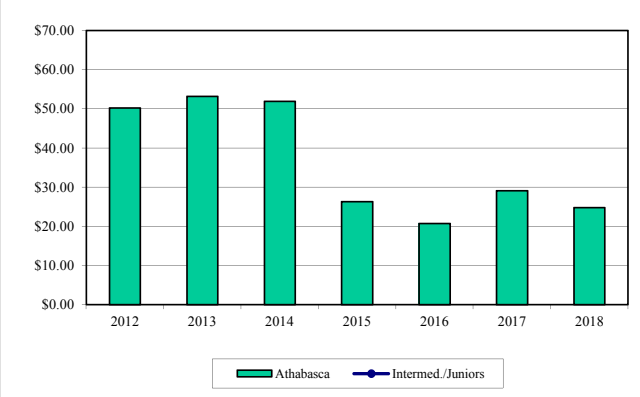
Source: BMO Capital Markets, Company Reports

Athabasca Oil (ATH - TSX)

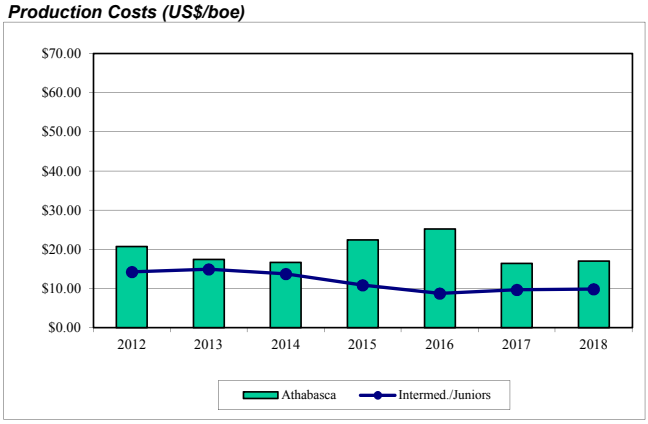
US$/boe, net

Worldwide

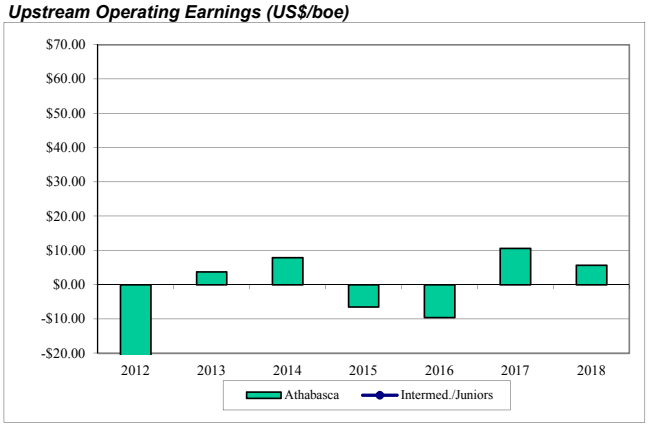
Upstream Net Revenue (US$/boe)



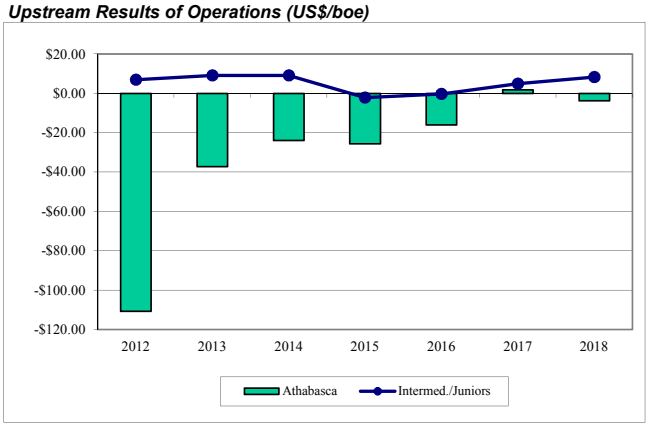
Production Costs (US$/boe)



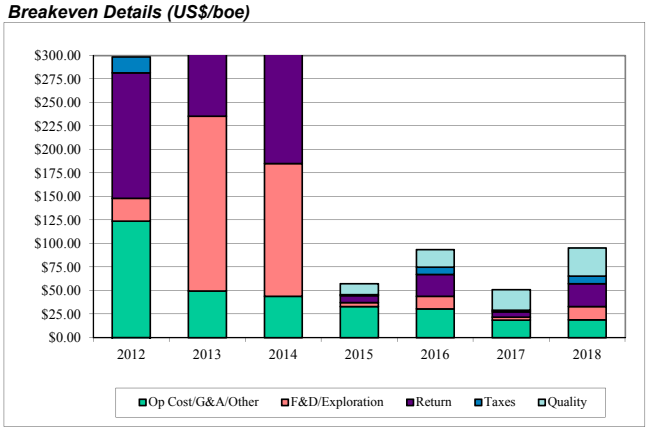
Upstream Operating Earnings (US$/boe)



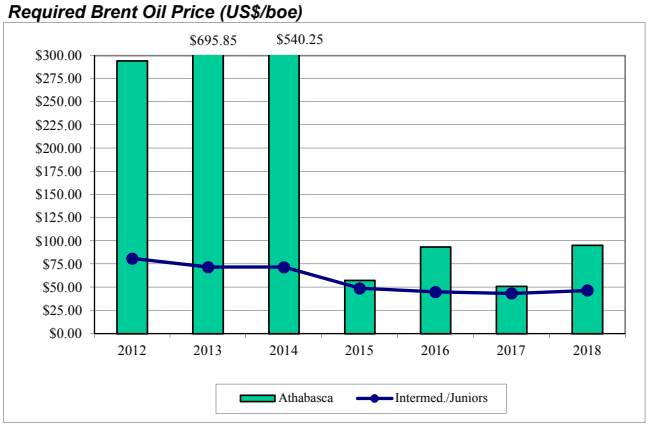
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Athabasca Oil (ATH - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	1	4	25	106	101	65	131	585	610
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	14	23	13	16	13	11	13	9	(25)
Total Revenue and Other Income	-	-	14	26	38	121	115	76	144	594	586
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	50	265	319
Production and Transportation Expenses	-	-	0	2	10	35	33	55	98	180	200
Marketing Expenses	-	-	-	-	-	-	-	1	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	0	0	1
General and Administrative	-	-	14	29	50	64	53	25	20	22	23
Depreciation, Depletion and Amortization	-	-	1	3	25	99	75	57	46	89	125
Interest, net	-	-	32	29	14	43	26	31	58	64	59
Other	-	-	(2,720)	(195)	(354)	37	193	536	579	134	298
Earnings Before Income Tax	-	-	2,687	159	292	(157)	(264)	(631)	(708)	(161)	(440)
Current Income Taxes	-	-	(14)	-	(1)	1	-	-	-	-	-
Future Income Taxes	-	-	298	15	33	(35)	(58)	(85)	-	-	-
Total Income Taxes	-	-	284	15	31	(34)	(58)	(85)	-	-	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	2,403	144	260	(123)	(206)	(546)	(708)	(161)	(440)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	2,403	144	260	(123)	(206)	(546)	(708)	(161)	(440)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	2,403	144	260	(123)	(206)	(546)	(708)	(161)	(440)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	2,403	144	260	(123)	(206)	(546)	(708)	(161)	(440)
Charges and Credits Not Impacting Cash	-	-	(34)	(33)	(11)	65	17	(28)	46	89	125
Other	-	-	(2,386)	(141)	(278)	53	200	518	607	143	317
Cash Flow From Operations	-	-	(17)	(30)	(28)	(5)	10	(55)	(54)	70	2
Change in Working Capital / Other	-	-	1	14	(12)	(7)	6	2	1	(23)	63
Net Cash From Operating Activities	-	-	(16)	(16)	(41)	(11)	16	(53)	(54)	48	65
Total Capital Expenditures	-	-	(173)	(601)	(1,081)	(723)	(568)	(228)	(97)	(202)	(213)
Acquisitions, net	-	-	1,820	-	698	152	54	354	430	(245)	-
Other	-	-	(1,292)	563	361	458	493	(48)	4	30	80
Net Cash From Investing Activities	-	-	355	(38)	(22)	(113)	(20)	77	337	(417)	(134)
Net Change in Debt	-	-	48	24	55	-	213	(2)	(216)	(6)	-
Net Change in Common Stock	-	-	-	(22)	-	-	-	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	(1,294)	-	-	-	-	-	-	-	-
Other	-	-	1,226	5	10	1	1	0	1	(0)	(0)
Net Cash From Financing Activities	-	-	(20)	8	64	1	214	(2)	(215)	(6)	(0)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	319	(45)	1	(123)	211	22	69	(376)	(69)
Cash and Equivalents, Beginning of Year	-	-	-	332	425	414	271	416	423	501	126
Cash and Equivalents, End of Year	-	-	319	287	426	290	481	438	491	126	57

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Athabasca Oil (ATH - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	321	1,768	1,967	1,380	1,573	980	585	588	323	195
Net Property, Plant and Equipment	-	293	507	1,148	2,207	2,644	2,777	2,080	904	1,320	1,105
Other Assets	-	94	1,258	876	874	-	135	47	214	148	109
Total Assets	-	708	3,533	3,991	4,461	4,217	3,893	2,712	1,706	1,792	1,409
Total Current Liabilities	-	236	21	601	230	196	155	45	477	101	120
Long-term Debt	-	351	437	-	529	518	712	656	-	406	449
Deferred Income Taxes	-	-	140	163	194	168	97	-	-	-	-
Other Liabilities and Deferred Credits	-	0	24	36	47	59	62	66	52	109	95
Total Liabilities	-	587	621	800	1,000	940	1,027	768	529	616	664
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	344	1,894	1,966	1,962	1,913	1,797	1,571	1,526	1,698	1,712
Contributed Surplus (Paid-in Capital)	-	41	61	85	119	146	140	115	109	108	104
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	(264)	949	1,132	1,380	1,217	929	258	(459)	(630)	(1,070)
Other / Comprehensive Income (Loss)	-	-	9	7	-	-	-	-	-	-	-
Total Shareholders' Equity	-	121	2,912	3,191	3,462	3,277	2,866	1,944	1,176	1,176	746
Total Liabilities and Shareholders' Equity	-	708	3,533	3,991	4,461	4,217	3,893	2,712	1,706	1,792	1,409
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**10.0%**	**11.6%**	**-3.4%**	**-7.2%**	**-21.5%**	**-42.5%**	**-9.4%**	**-31.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue	-	-	-	-	$50.22	$53.22	$51.92	$26.28	$20.77	$29.14	$24.79	$26.00	$27.65
Production Costs	-	-	-	-	$20.70	$17.45	$16.65	$22.41	$25.23	$16.45	$17.05	$18.00	$18.26
Exploration	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.06	$0.02	$0.06	$0.05	$0.04
DD&A	-	-	-	-	$51.35	$50.07	$38.22	$23.13	$11.85	$8.11	$10.65	$9.78	$12.63
G&A/Other	-	-	-	-	$102.91	$32.06	$27.32	$10.36	$5.09	$2.05	$1.97	$2.46	$4.65
Pre-tax Results of Operations	-	-	-	-	-$124.75	-$46.36	-$30.27	-$29.61	-$21.45	$2.52	-$4.94	-$4.28	-$7.92
Income Taxes	-	-	-	-	-$14.00	-$9.17	-$6.34	-$3.92	-$5.36	$0.63	-$1.24	-$1.07	-$1.73
Pre-tax Results of Operations	-	-	-	-	-$110.75	-$37.19	-$23.93	-$25.70	-$16.09	$1.89	-$3.71	-$3.21	-$6.19

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue	-	-	-	-	$50.22	$53.22	$51.92	$26.28	$20.77	$29.14	$24.79	$26.00	$27.65
Production Costs	-	-	-	-	$20.70	$17.45	$16.65	$22.41	$25.23	$16.45	$17.05	$18.00	$18.26
Exploration	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.06	$0.02	$0.06	$0.05	$0.04
DD&A	-	-	-	-	$51.35	$50.07	$38.22	$23.13	$11.85	$8.11	$10.65	$9.78	$12.63
G&A/Other	-	-	-	-	$102.91	$32.06	$27.32	$10.36	$5.09	$2.05	$1.97	$2.46	$4.65
Pre-tax Results of Operations	-	-	-	-	-$124.75	-$46.36	-$30.27	-$29.61	-$21.45	$2.52	-$4.94	-$4.28	-$7.92
Income Taxes	-	-	-	-	-$14.00	-$9.17	-$6.34	-$3.92	-$5.36	$0.63	-$1.24	-$1.07	-$1.73
Pre-tax Results of Operations	-	-	-	-	-$110.75	-$37.19	-$23.93	-$25.70	-$16.09	$1.89	-$3.71	-$3.21	-$6.19

Source: BMO Capital Markets, Company Reports

Athabasca Oil (ATH - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)					5.6	17.8	16.6	16.5	12.7	19.4	31.4	21.1	19.3
Liquids Production (b/d)					407	2,465	2,589	3,980	8,557	26,838	26,964	20,786.5	13,785.7
Total Production (boe/d)					1,340	5,435	5,352	6,738	10,668	30,069	32,191	24,309	17,004
% Gas Production					70%	55%	52%	41%	20%	11%	16%	14%	19%
% Oil Production					30%	45%	48%	59%	80%	89%	84%	86%	81%
Proven Reserves:													
Closing Gas Reserves (bcf)					39.9	42.5	32.4	78.7	62.3	157.4	138.0	119.3	93.8
Closing Oil Reserves (mmbbls)					41.3	43.1	44.9	92.3	90.0	351.7	343.2	261.6	184.4
Closing Total Proven Reserves (mmboe)					47.9	50.2	50.3	105.4	100.3	378.0	366.2	281.5	200.0
% Gas Reserves					14%	14%	11%	12%	10%	7%	6%	7%	8%
% Oil Reserves					86%	86%	89%	88%	90%	93%	94%	93%	92%
Proven Reserve Life Index					110.6	27.5	27.3	44.1	25.9	34.6	31.6	30.7	32.7
Proven Reserve Additions:													
Gas Additions (bcf)					30.7	9.0	(4.0)	51.5	(10.2)	101.8	(9.0)	27.5	26.0
Oil Additions (mmbbls)					12.0	2.5	0.3	44.9	-3.3	277.1	16.9	96.9	67.2
Total Additions (mmboe)					17.2	4.0	-0.4	53.5	-5.0	294.1	15.4	101.5	71.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions					7.0	3.6	4.0	16.2	8.9	0.0	1.4	10.3	30.5
Acquisitions					0.0	0.0	0.0	0.0	0.0	243.2	0.0	243.2	243.2
Dispositions					-28.1	0.0	0.0	0.0	-11.3	0.0	0.0	-11.3	-11.3
Revisions of Estimates					38.2	0.4	-4.3	37.3	-2.6	50.9	14.0	62.3	95.3
Components as % of Total Additions:													
Extensions, Discoveries and Additions					41.0%	90.3%	-1109.4%	30.3%	-177.6%	0.0%	9.1%	10.1%	339.9%
Net Acquisitions					-163.7%	0.0%	0.0%	0.0%	225.6%	82.7%	0.0%	228.5%	324.2%
Revisions of Estimates					222.7%	9.7%	1209.4%	69.7%	52.0%	17.3%	90.9%	61.4%	133.2%
Additions as % of Production:													
Gas					1504.5%	138.6%	-66.7%	853.1%	-220.0%	1438.2%	-78.7%	118.9%	73.8%
Oil					8100.0%	275.0%	33.3%	3094.1%	-105.7%	2829.1%	171.5%	425.7%	267.1%
Total					3509.0%	200.4%	-18.3%	2176.9%	-128.3%	2679.6%	130.9%	381.3%	230.5%
Additions as % of Reserves:													
Gas					77.0%	21.2%	-12.5%	65.5%	-16.3%	64.6%	-6.5%	23.1%	27.7%
Oil					29.2%	5.7%	0.7%	48.7%	-3.7%	78.8%	4.9%	37.0%	36.4%
Total					35.8%	7.9%	-0.7%	50.8%	-5.0%	77.8%	4.2%	36.1%	35.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic					$63.7	$29.0	$9.9	$10.3	$5.3	$6.4	$4.4	$16.0	$36.2
Exploration & Development					$1,037.0	$710.7	$548.9	$216.9	$78.8	$156.9	$208.8	$444.5	$1,210.2
Acquisitions					$0.0	$0.0	$0.0	$0.0	$0.0	$464.1	$0.0	$464.1	$464.1
Dispositions					na	na	na	na	na	$0.0	$0.0	$0.0	$0.0
Total Expenditures					$1,100.7	$739.6	$558.7	$227.2	$84.1	$627.4	$213.2	$924.6	$1,710.5
Expenditures as % of Total:													
Land & Seismic					5.8%	3.9%	1.8%	4.5%	6.3%	1.0%	2.1%	1.7%	2.1%
Exploration & Development					94.2%	96.1%	98.2%	95.5%	93.7%	25.0%	97.9%	48.1%	70.8%
Net Acquisitions					0.0%	0.0%	0.0%	0.0%	0.0%	74.0%	0.0%	50.2%	27.1%
Cashflow (US$million)					-$28.5	-$4.5	$10.5	-$55.5	-$54.1	$70.2	$2.0	$18.1	-$26.9
Cashflow (US$/boe)					-$58.23	-$2.29	$5.36	-$22.56	-$13.90	$6.40	$0.17	$0.68	-$0.87
Recycle Ratio					-2.4x	0.0x	0.0x	-5.3x	-1.0x	3.0x	0.0x	0.2x	-0.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)					$24.31	$186.00	-$1,563.45	$4.24	$13.39	$3.20	$13.86	$6.34	$9.91
Acquisition Costs					na	na	na	na	na	$1.91	na	$1.91	$1.91
All Sources (incl. revisions)					$24.31	$186.00	-$1,563.45	$4.24	$13.39	$2.13	$13.86	$2.93	$4.64
Exploration & Development (excl. revisions)					$156.38	$205.96	$140.93	$13.99	$9.47	$9.47	$9.47	$44.78	$40.88
Acquisition Costs					na	na	na	na	na	$1.91	na	$1.91	$1.91
All Sources (excl. revisions)					$156.38	$205.96	$140.93	$13.99	$9.47	$2.58	$151.57	$3.65	$6.25

Source: BMO Capital Markets, Company Reports

Athabasca Oil (ATH - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	20.70	17.45	16.65	22.41	25.23	16.45	17.05	18.00	18.26
Exploration Expense	-	-	-	-	-	-	-	-	0.06	0.02	0.06	0.05	0.04
G&A/Other	-	-	-	-	102.91	32.06	27.32	10.36	5.09	2.05	1.97	2.46	4.65
F&D Costs (1-Year)	-	-	-	-	24.31	186.00	140.93	4.24	13.39	3.20	13.86	10.15	35.13
Return on Capital	-	-	-	-	133.61	362.60	273.49	7.44	23.41	5.60	24.22	17.79	62.94
Income Taxes	-	-	-	-	16.89	89.39	72.48	1.13	7.80	1.87	8.07	5.93	17.58
Breakeven Oil Price	**-**	**-**	**-**	**-**	**298.43**	**687.50**	**530.87**	**45.59**	**74.98**	**29.19**	**65.23**	**54.38**	**138.60**
Quality Differential	-	-	-	-	(4.46)	8.33	9.36	11.81	18.46	21.71	30.00	23.39	18.27
Required Brent Price	**-**	**-**	**-**	**-**	**293.97**	**695.82**	**540.24**	**57.40**	**93.44**	**50.90**	**95.23**	**77.76**	**156.87**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	43.87	29.33	25.09	30.59	29.03	17.99	19.06	19.97	21.54
Exploration Expense	-	-	-	-	-	-	-	-	0.06	0.02	0.07	0.05	0.05
G&A/Other	-	-	-	-	218.03	53.88	41.16	14.14	5.86	2.24	2.20	2.73	5.22
F&D Costs (1-Year)	-	-	-	-	82.88	258.33	147.86	4.74	19.71	2.58	13.03	11.78	37.59
Return on Capital	-	-	-	-	145.23	634.81	259.26	8.31	34.56	4.52	22.79	20.61	65.90
Income Taxes	-	-	-	-	18.36	156.50	68.70	1.27	11.52	1.51	7.60	6.87	18.41
Breakeven Oil Price	**-**	**-**	**-**	**-**	**508.36**	**1,132.85**	**542.08**	**59.05**	**100.74**	**28.86**	**64.75**	**62.01**	**148.69**
Quality Differential	-	-	-	-	(9.44)	14.00	14.11	16.12	21.24	23.75	32.82	25.93	23.48
Required Brent Price	**-**	**-**	**-**	**-**	**498.92**	**1,146.85**	**556.19**	**75.17**	**121.98**	**52.61**	**97.57**	**87.95**	**172.17**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	43.87	29.33	25.09	30.59	29.03	17.99	19.06	19.97	21.54
Exploration Expense	-	-	-	-	-	-	-	-	0.06	0.02	0.07	0.05	0.05
G&A/Other	-	-	-	-	218.03	53.88	41.16	14.14	5.86	2.24	2.20	2.73	5.22
F&D Costs (1-Year)	-	-	-	-	372.77	288.01	13.69	34.19	20.61	27.40	19.85	24.52	23.15
Return on Capital	-	-	-	-	652.66	799.98	23.92	59.26	36.12	47.88	34.80	42.90	40.53
Income Taxes	-	-	-	-	82.50	197.22	6.34	9.03	12.04	15.96	11.60	14.30	11.32
Breakeven Oil Price	**-**	**-**	**-**	**-**	**1,369.83**	**1,368.42**	**110.21**	**147.22**	**103.73**	**111.49**	**87.58**	**104.46**	**101.80**
Quality Differential	-	-	-	-	(9.44)	14.00	14.11	16.12	21.24	23.75	32.82	25.93	23.48
Required Brent Price	**-**	**-**	**-**	**-**	**1,360.39**	**1,382.41**	**124.31**	**163.34**	**124.97**	**135.24**	**120.40**	**130.40**	**125.28**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

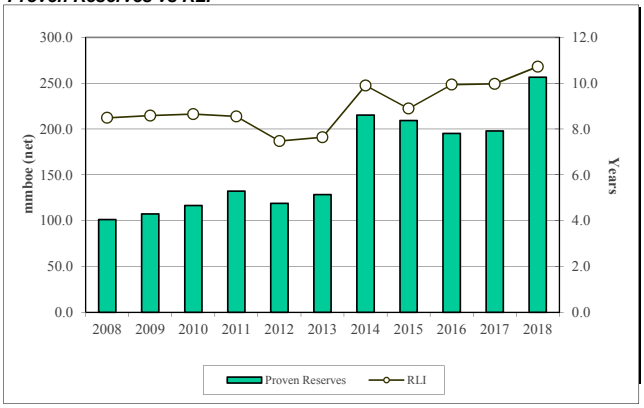
Baytex Energy (BTE - TSX)

US$, net

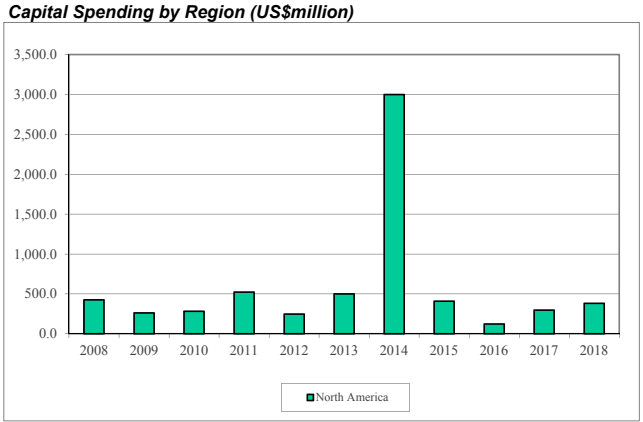
- Baytex reported results from operations of $1.76/boe compared to a loss of $1.23/boe last year.
- The company's one-year F&D cost improved to $5.26/boe from $13.49/boe in 2017. On a realized oil:gas price ratio basis, F&D costs were $5.25/boe while the costs for PD reserves came in at $7.52/boe.
- Baytex's 2018 results imply a required Brent breakeven oil price of $51.09/boe based on total proved reserves, while its PD costs imply a Brent breakeven of $61.54/boe.
- The company reported a loss on capital of 5.3% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

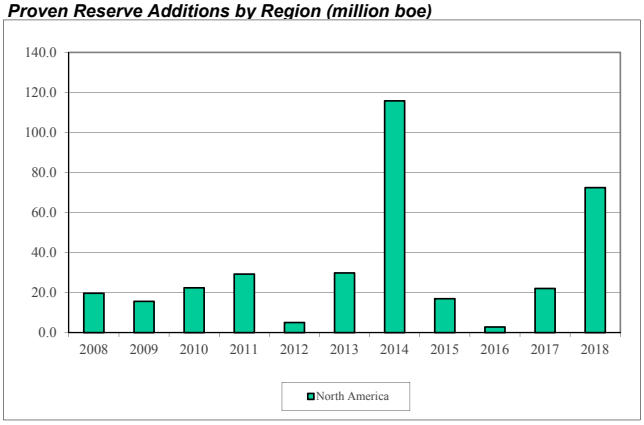
Proven Reserves vs RLI



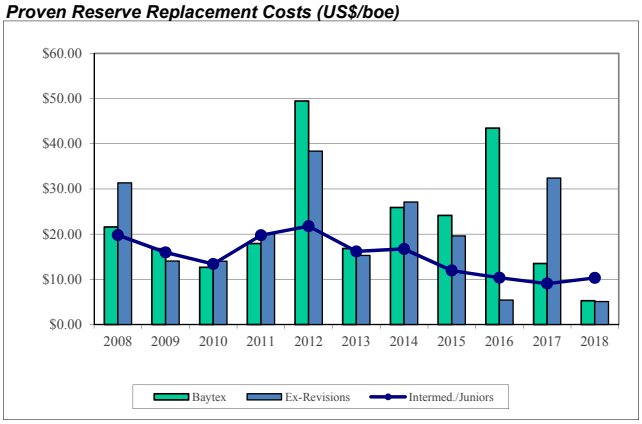
Capital Spending by Region (US$million)



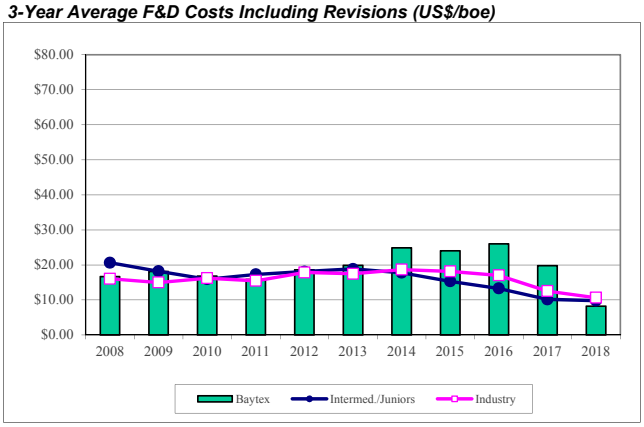
Proven Reserve Additions by Region (million boe)



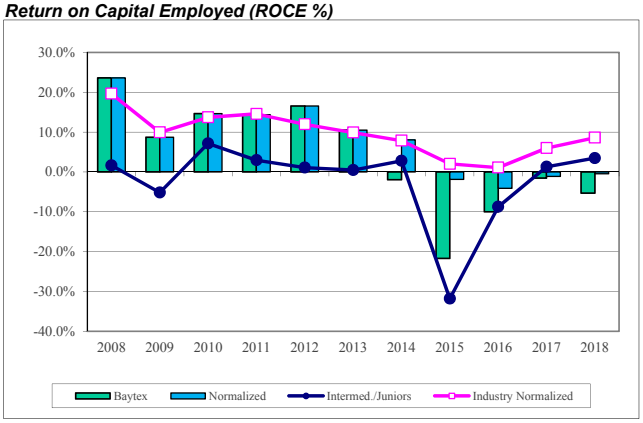
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



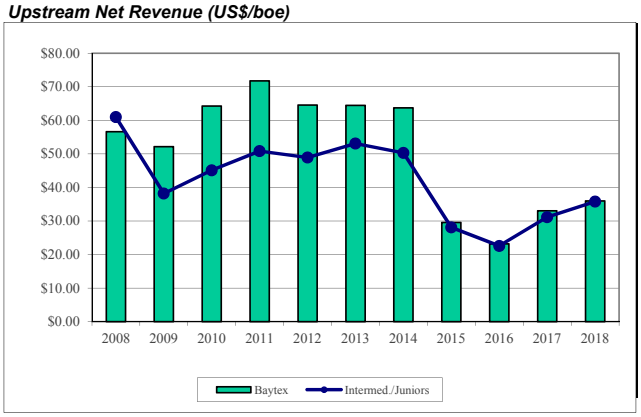
Source: BMO Capital Markets, Company Reports

Baytex Energy (BTE - TSX)

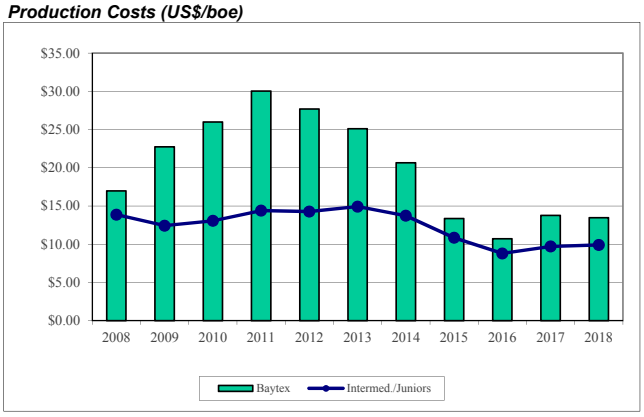
US$/boe, net

North America

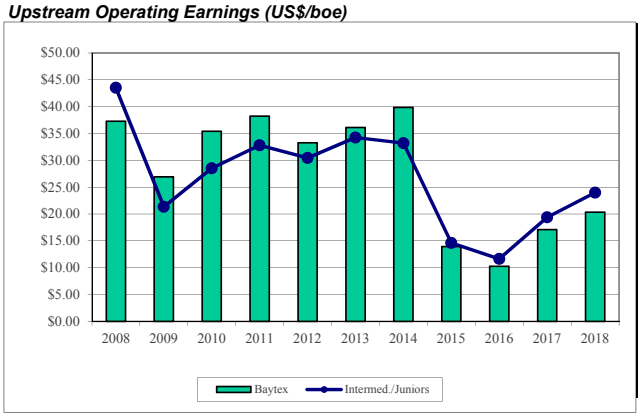
Upstream Net Revenue (US$/boe)



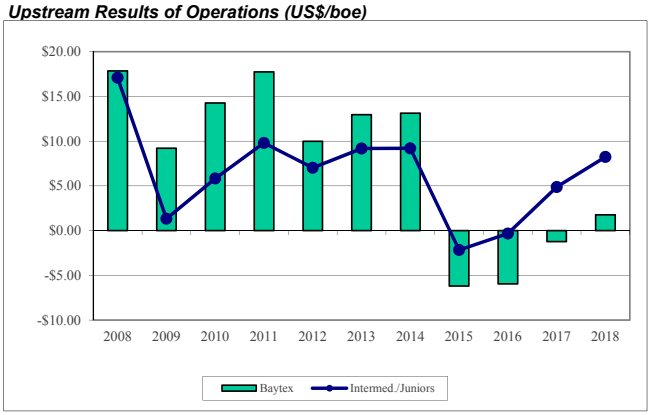
Production Costs (US$/boe)



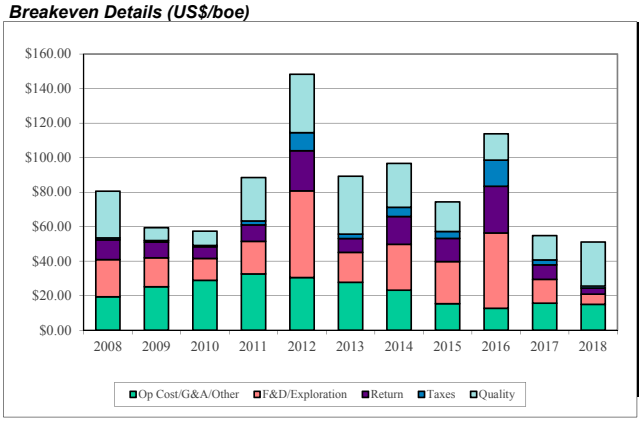
Upstream Operating Earnings (US$/boe)



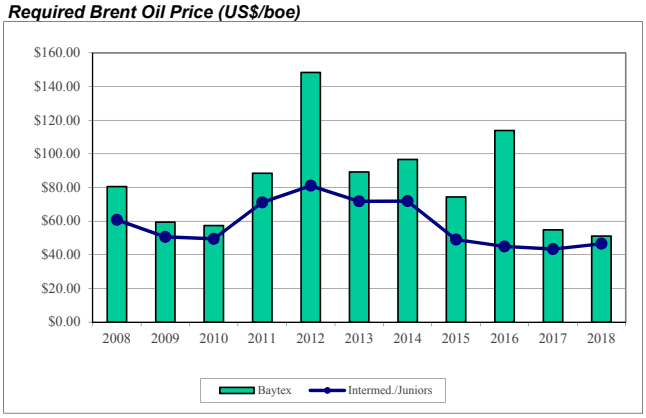
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Baytex Energy (BTE - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	731	581	818	1,106	1,022	1,080	1,375	696	455	655	861
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	56	23	10	3	4	3	11	-	-	-	-
Total Revenue and Other Income	788	603	828	1,109	1,026	1,083	1,386	696	455	655	861
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	202	284	350	464	440	422	449	314	210	273	322
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	14	12	10	16	7	5	6	17
General and Administrative	28	31	39	40	45	44	54	47	38	37	35
Depreciation, Depletion and Amortization	211	209	263	251	298	319	486	518	384	372	431
Interest, net	31	29	27	-	41	53	82	87	86	88	92
Other	43	(10)	(1)	67	(193)	24	297	880	304	(67)	293
Earnings Before Income Tax	272	60	150	273	377	211	1	(1,157)	(573)	(53)	(330)
Income Taxes:											
Current Income Taxes	10	10	8	-	10	(7)	49	7	(6)	(1)	(0)
Future Income Taxes	15	(27)	(31)	53	108	58	73	(276)	(200)	(120)	(79)
Total Income Taxes	24	(17)	(23)	53	118	51	122	(270)	(206)	(121)	(79)
Minority Interest	(3)	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	245	77	172	220	259	160	(120)	(888)	(367)	67	(251)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	245	77	172	220	259	160	(120)	(888)	(367)	67	(251)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	245	77	172	220	259	160	(120)	(888)	(367)	67	(251)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	245	77	172	220	259	160	(120)	(888)	(367)	67	(251)
Charges and Credits Not Impacting Cash	226	182	232	314	406	377	966	1,055	508	252	573
Other	(62)	33	36	66	(131)	81	24	237	67	(61)	22
Cash Flow From Operations	409	293	441	600	533	618	870	404	209	258	344
Change in Working Capital / Other	35	(26)	(12)	(22)	45	2	12	26	(22)	(7)	30
Net Cash From Operating Activities	444	267	429	579	578	620	883	430	187	251	375
Total Capital Expenditures	(175)	(145)	(230)	(363)	(419)	(535)	(694)	(408)	(170)	(252)	(383)
Acquisitions, net	(84)	(117)	(45)	(198)	161	38	(1,357)	(1)	48	(46)	(2)
Other	19	(6)	(51)	35	(31)	54	(92)	(59)	(99)	26	27
Net Cash From Investing Activities	(239)	(268)	(326)	(526)	(289)	(443)	(2,143)	(468)	(221)	(272)	(358)
Financing Activities:											
Net Change in Debt	(31)	16	46	4	(59)	104	312	(352)	(46)	19	(16)
Net Change in Common Stock	10	114	25	46	22	10	1,279	475	83	-	(1)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(184)	(120)	(183)	(207)	(215)	(231)	(278)	(86)	-	-	-
Other	-	-	-	112	(35)	(42)	(70)	-	-	-	-
Net Cash From Financing Activities	(205)	10	(112)	(44)	(287)	(159)	1,243	36	37	19	(17)
Effect of Exchange Rate on Cash	-	(0)	(1)	0	(7)	(2)	1	1	(1)	-	-
Net Increase/(Decrease) in Cash	-	9	(9)	8	1	18	(17)	(1)	3	(2)	(0)
Cash and Equivalents, Beginning of Year	(0)	(0)	9	(0)	8	2	18	1	0	2	(0)
Cash and Equivalents, End of Year	(0)	9	(0)	8	2	18	1	0	2	(0)	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Baytex Energy (BTE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Assets											
Current Assets:											
Cash and Equivalents	-	9.0	-	7.9	1.8	17.8	1.0	0.2	2.0	-	-
Other Current Assets	163.7	149.2	168.0	221.3	192.6	220.3	383.7	160.3	86.4	101.3	147.5
Total Current Assets	164	158	168	229	194	238	385	160	88	101	148
Net Property, Plant and Equipment	1,510	1,466	1,635	2,056	2,279	2,317	5,005	4,114	3,370	3,060	4,498
Other Assets	36	36	185	205	66	65	253	24	12	210	277
Total Assets	1,709	1,660	1,988	2,490	2,540	2,621	5,643	4,298	3,471	3,371	4,922
Liabilities and Stockholders' Equity											
Total Current Liabilities	392	428	220	280	219	262	426	210	114	152	201
Long-term Debt	215	132	441	301	558	656	1,868	1,453	1,325	1,300	1,624
Deferred Income Taxes	181	158	162	94	189	241	820	513	284	158	240
Other Liabilities and Deferred Credits	47	49	166	594	273	216	259	232	253	285	499
Total Liabilities	835	768	989	1,270	1,239	1,375	3,373	2,407	1,976	1,895	2,564
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Common Shares	1,066	1,142	1,350	1,700	1,861	1,946	3,243	3,365	3,341	3,426	4,401
Contributed Surplus (Paid-in Capital)	20	18	20	87	66	52	28	4	16	12	15
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	(212)	(265)	(356)	(562)	(614)	(754)	(1,182)	(2,030)	(2,338)	(2,319)	(2,573)
Other / Comprehensive Income (Loss)	0	(3)	(14)	(4)	(12)	1	181	552	476	357	515
Total Shareholders' Equity	875	891	999	1,221	1,300	1,246	2,270	1,891	1,495	1,477	2,358
Total Liabilities and Shareholders' Equity	1,709	1,660	1,988	2,490	2,540	2,621	5,643	4,298	3,471	3,371	4,922
Return on Capital Employed (ROCE)	**23.6%**	**8.7%**	**14.7%**	**14.4%**	**16.6%**	**10.5%**	**-1.9%**	**-21.7%**	**-10.0%**	**-1.5%**	**-5.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$56.60	$52.15	$64.28	$71.77	$64.55	$64.44	$63.73	$29.56	$23.15	$33.03	$35.98	$31.08	$37.28
Production Costs	$16.97	$22.74	$26.00	$30.04	$27.68	$25.09	$20.65	$13.35	$10.71	$13.77	$13.46	$12.71	$14.44
Exploration	$0.00	$0.00	$0.00	$0.91	$0.77	$0.59	$0.74	$0.29	$0.23	$0.32	$0.70	$0.44	$0.47
DD&A	$17.72	$16.72	$19.55	$16.26	$18.75	$19.00	$22.35	$22.02	$19.55	$18.73	$18.03	$18.72	$20.16
G&A / Other	$2.34	$2.47	$2.87	$2.57	$2.81	$2.63	$2.50	$1.98	$1.96	$1.84	$1.48	$1.74	$1.94
Pre-tax Results of Operations	$19.58	$10.23	$15.86	$21.98	$14.53	$17.12	$17.49	-$8.08	-$9.30	-$1.64	$2.31	-$2.52	$0.28
Income Taxes	$1.73	$1.02	$1.59	$4.25	$4.55	$4.15	$4.37	-$1.88	-$3.34	-$0.41	$0.55	-$0.71	$0.07
Results of Operations	$17.84	$9.20	$14.27	$17.73	$9.98	$12.97	$13.12	-$6.20	-$5.95	-$1.23	$1.76	-$1.81	$0.20

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Baytex Energy (BTE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	43.1	48.0	46.4	41.2	36.7	34.4	49.7	69.9	72.4	67.8	73.9	71.4	66.7
Liquids Production (b/d)	25,484	26,247	29,145	35,487	37,410	40,331	51,281	52,834	41,755	43,040	53,212	46,003	48,424
Total Production (boe/d)	32,662	34,243	36,877	42,353	43,532	46,058	59,564	64,481	53,815	54,349	65,536	57,900	59,549
% Gas Production	22%	23%	21%	16%	14%	12%	14%	18%	22%	21%	19%	21%	19%
% Oil Production	78%	77%	79%	84%	86%	88%	86%	82%	78%	79%	81%	79%	81%
Proven Reserves:													
Closing Gas Reserves (bcf)	94.0	73.8	70.3	73.5	67.4	89.7	239.5	261.7	273.7	278.6	253.9	268.7	261.5
Closing Oil Reserves (mmbbls)	85.5	95.0	104.7	119.9	107.6	113.5	175.3	165.7	149.6	151.4	214.1	171.7	171.2
Closing Total Proven Reserves (mmboe)	101.2	107.3	116.5	132.2	118.8	128.4	215.2	209.3	195.2	197.8	256.4	216.5	214.8
% Gas Reserves	15%	11%	10%	9%	9%	12%	19%	21%	23%	23%	17%	21%	20%
% Oil Reserves	85%	89%	90%	91%	91%	88%	81%	79%	77%	77%	83%	79%	80%
Proven Reserve Life Index	8.5	8.6	8.7	8.6	7.5	7.6	9.9	8.9	9.9	10.0	10.7	10.2	9.9
Proven Reserve Additions:													
Gas Additions (bcf)	28.3	(7.4)	12.0	17.6	7.0	37.4	174.1	47.8	28.1	31.7	-1.2	58.7	280.6
Oil Additions (mmbbls)	15.0	16.8	20.4	26.3	3.8	23.6	86.8	9.0	-1.9	16.8	72.6	87.5	183.3
Total Additions (mmboe)	19.7	15.6	22.4	29.2	5.0	29.8	115.8	17.0	2.8	22.1	72.4	97.3	230.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	4.5	13.5	18.5	19.7	14.9	33.7	58.4	20.5	23.7	3.9	17.0	44.6	123.5
Net Acquisitions	9.1	5.2	1.8	6.4	-8.4	-0.9	52.2	0.4	-1.2	5.3	58.0	62.0	114.7
Revisions of Estimates	6.1	(3.0)	2.2	3.2	-1.4	-3.0	5.2	-3.9	-19.7	12.9	-2.5	(9.4)	(8.1)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	22.8%	86.3%	82.5%	67.5%	297.0%	113.1%	50.4%	120.6%	844.4%	17.8%	23.4%	45.9%	53.7%
Net Acquisitions	46.0%	33.1%	7.9%	21.7%	-168.0%	-3.1%	45.1%	2.4%	-42.7%	23.9%	80.0%	63.8%	49.8%
Revisions of Estimates	31.1%	-19.3%	9.6%	10.8%	-28.9%	-10.0%	4.5%	-23.1%	-701.7%	58.4%	-3.5%	-9.6%	-3.5%
Additions as % of Production:													
Gas	179.8%	-42.5%	71.1%	117.1%	52.0%	298.1%	959.7%	187.4%	106.6%	128.1%	-4.4%	75.1%	230.3%
Oil	160.7%	175.8%	191.9%	203.1%	28.2%	160.1%	463.6%	46.7%	-12.3%	106.9%	373.9%	173.8%	207.4%
Total	164.9%	124.8%	166.6%	189.2%	31.5%	177.3%	532.6%	72.1%	14.3%	111.3%	302.8%	153.5%	211.7%
Additions as % of Reserves:													
Gas	30.1%	-10.1%	17.1%	24.0%	10.3%	41.7%	72.7%	18.3%	10.3%	11.4%	-0.5%	21.8%	107.3%
Oil	17.5%	17.7%	19.5%	21.9%	3.6%	20.8%	49.5%	5.4%	-1.3%	11.1%	33.9%	51.0%	107.1%
Total	19.4%	14.5%	19.3%	22.1%	4.2%	23.2%	53.8%	8.1%	1.4%	11.2%	28.2%	45.0%	107.1%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$13.7	$13.9	$17.9	$6.3	$12.0	$10.8	$6.5	$4.1	$8.2	$4.4	$13.7	$26.3	$36.9
Exploration & Development	$160.9	$124.5	$220.4	$367.1	$406.8	$528.2	$687.4	$403.9	$161.7	$247.1	$368.9	$777.7	$1,869.0
Net Acquisitions	$250.1	$123.4	$45.3	$150.5	-$171.0	-$38.0	$2,305.1	$1.3	-$47.7	$46.2	-$1.4	-$2.9	$2,303.5
Total Expenditures	$424.6	$261.8	$283.6	$523.9	$247.8	$501.0	$2,999.0	$409.3	$122.1	$297.7	$381.2	$801.1	$4,209.4
Expenditures as % of Total:													
Land & Seismic	3.2%	5.3%	6.3%	1.2%	4.9%	2.2%	0.2%	1.0%	6.7%	1.5%	3.6%	3.3%	0.9%
Exploration & Development	37.9%	47.6%	77.7%	70.1%	164.2%	105.4%	22.9%	98.7%	132.4%	83.0%	96.8%	97.1%	44.4%
Net Acquisitions	58.9%	47.2%	16.0%	28.7%	-69.0%	-7.6%	76.9%	0.3%	-39.0%	15.5%	-0.4%	-0.4%	54.7%
Cashflow (C$million)	409.2	292.6	441.0	600.2	533.1	618.5	870.3	404.4	208.7	257.7	344.1	810.5	2085.2
Cashflow (C$/boe)	$34.32	$23.41	$32.77	$38.83	$33.55	$36.79	$40.03	$17.18	$10.63	$12.99	$14.39	$12.78	$19.19
Recycle Ratio	1.6x	1.4x	2.6x	2.2x	0.7x	2.2x	1.5x	0.7x	0.2x	1.0x	2.7x	1.6x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$16.45	$13.25	$11.54	$16.31	$31.19	$17.54	$10.92	$24.65	$42.34	$14.97	$26.48	$22.80	$16.52
Net Acquisition Costs	$27.63	$23.92	$25.57	$23.69	$20.32	$40.74	$44.14	$3.15	$39.74	$8.76	-$0.02	-$0.05	$20.09
All Sources (incl. revisions)	$21.60	$16.78	$12.65	$17.92	$49.47	$16.81	$25.90	$24.13	$43.45	$13.49	$5.26	$8.23	$18.30
Exploration & Development (excl. revisions)	$38.88	$10.28	$12.89	$18.92	$28.16	$15.98	$11.88	$19.94	$7.16	$64.19	$22.54	$18.02	$15.43
Net Acquisition Costs	$27.63	$23.92	$25.57	$23.69	$20.32	$40.74	$44.14	$3.15	$39.74	$8.76	-$0.02	-$0.05	$20.09
All Sources (excl. revisions)	$31.36	$14.06	$14.00	$20.08	$38.37	$15.28	$27.11	$19.61	$5.42	$32.41	$5.09	$7.51	$17.67

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

Baytex Energy (BTE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	16.97	22.74	26.00	30.04	27.68	25.09	20.65	13.35	10.71	13.77	13.46	12.71	14.44
Exploration Expense	-	-	-	0.91	0.77	0.59	0.74	0.29	0.23	0.32	0.70	0.44	0.47
G&A/Other	2.34	2.47	2.87	2.57	2.81	2.63	2.50	1.98	1.96	1.84	1.48	1.74	1.94
F&D Costs (1-Year)	21.60	16.78	12.65	17.92	49.47	16.81	25.90	24.13	43.45	13.49	5.26	8.23	18.30
Return on Capital	11.44	9.01	6.84	9.59	23.20	7.96	16.09	13.39	27.02	8.43	3.53	5.28	11.33
Income Taxes	1.11	1.00	0.76	2.30	10.56	2.55	5.36	4.07	15.18	2.81	1.10	2.08	4.11
Breakeven Oil Price	**53.46**	**51.99**	**49.11**	**63.33**	**114.50**	**55.64**	**71.24**	**57.20**	**98.55**	**40.66**	**25.54**	**30.47**	**50.58**
Quality Differential	27.05	7.39	8.22	25.12	33.83	33.56	25.39	17.17	15.29	14.14	25.55	18.32	19.51
Required Brent Price	**80.52**	**59.38**	**57.33**	**88.44**	**148.32**	**89.19**	**96.63**	**74.37**	**113.84**	**54.80**	**51.09**	**48.80**	**70.09**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	18.45	26.10	29.64	33.64	30.99	27.49	22.62	14.75	12.16	15.65	15.41	14.47	16.21
Exploration Expense	-	-	-	1.02	0.86	0.65	0.81	0.32	0.26	0.36	0.80	0.50	0.52
G&A/Other	2.55	2.83	3.27	2.88	3.15	2.88	2.74	2.19	2.22	2.09	1.69	1.98	2.18
F&D Costs (1-Year)	23.67	16.07	13.35	19.19	60.05	19.70	30.73	32.08	31.90	15.65	5.25	17.60	23.12
Return on Capital	12.89	9.29	7.69	10.78	29.04	9.48	18.48	17.57	19.77	9.62	3.58	11.27	14.12
Income Taxes	1.25	1.03	0.85	2.58	13.22	3.04	6.16	5.33	11.11	3.21	1.19	4.53	5.19
Breakeven Oil Price	**58.81**	**55.33**	**54.80**	**70.08**	**137.32**	**63.23**	**81.54**	**72.24**	**77.41**	**46.59**	**27.93**	**50.34**	**61.34**
Quality Differential	29.42	8.48	9.37	28.12	37.87	36.76	27.81	18.98	17.35	16.07	29.23	20.88	21.89
Required Brent Price	**88.23**	**63.82**	**64.17**	**98.21**	**175.19**	**99.99**	**109.35**	**91.22**	**94.75**	**62.65**	**57.17**	**71.23**	**83.23**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	18.45	26.10	29.64	33.64	30.99	27.49	22.62	14.75	12.16	15.65	15.41	14.47	16.21
Exploration Expense	-	-	-	1.02	0.86	0.65	0.81	0.32	0.26	0.36	0.80	0.50	0.52
G&A/Other	2.55	2.83	3.27	2.88	3.15	2.88	2.74	2.19	2.22	2.09	1.69	1.98	2.18
F&D Costs (1-Year)	32.43	36.98	21.07	30.88	34.30	24.77	59.16	27.50	16.15	14.42	7.52	10.36	24.95
Return on Capital	17.67	21.38	12.24	17.36	16.67	11.91	35.58	14.95	10.01	8.87	5.16	6.62	15.18
Income Taxes	1.72	2.38	1.36	4.16	7.59	3.82	11.86	4.54	5.62	2.96	1.72	2.66	5.57
Breakeven Oil Price	**72.82**	**89.67**	**67.59**	**89.94**	**93.56**	**71.51**	**132.77**	**64.25**	**46.42**	**44.36**	**32.30**	**36.60**	**64.61**
Quality Differential	29.42	8.48	9.37	28.12	37.87	36.76	27.81	18.98	17.35	16.07	29.23	20.88	21.89
Required Brent Price	**102.23**	**98.15**	**76.96**	**118.06**	**131.43**	**108.28**	**160.58**	**83.22**	**63.77**	**60.42**	**61.54**	**57.48**	**86.50**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

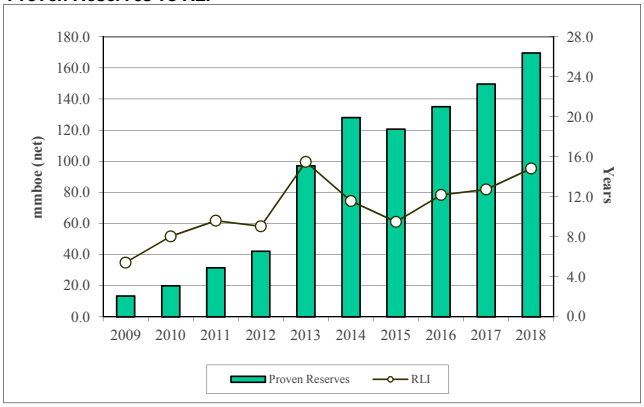
Bellatrix Exploration (BXE - TSX)

US$, net

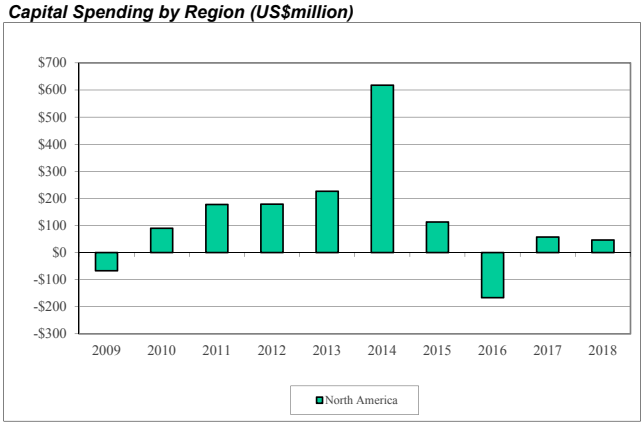
- Bellatrix managed to reduce its loss from operations to $1.27/boe from $1.41/boe in 2017.
- Excluding dispositions, F&D costs came in at $3.11/boe. On a realized oil:gas price ratio basis, F&D costs were $4.62/boe while costs for PD reserves were $3.62/boe.
- Bellatrix's 2018 results imply a required Brent breakeven oil price of $58.44/boe on a realized ratio basis, while its PD cost assessment implied a Brent breakeven oil price of $56.09/boe.
- The company reported a loss on capital of 7.4% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

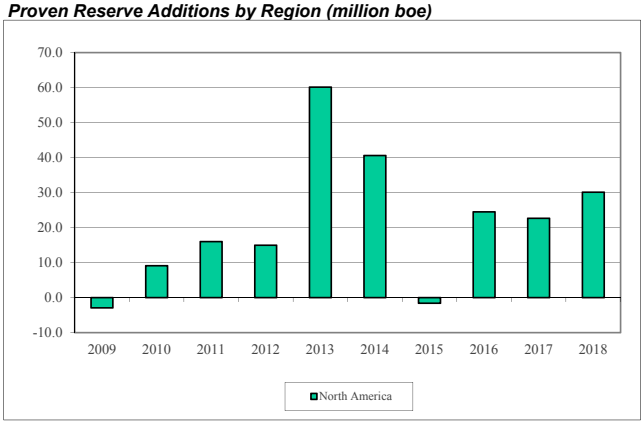
Proven Reserves vs RLI



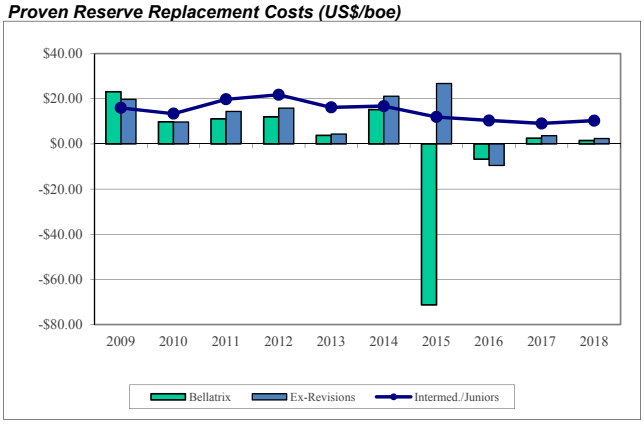
Capital Spending by Region (US$million)



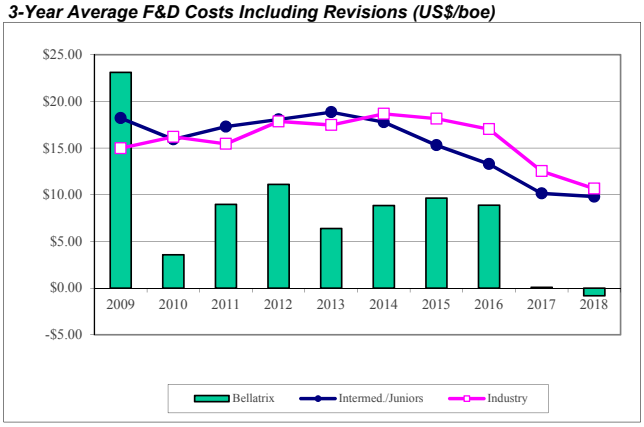
Proven Reserve Additions by Region (million boe)



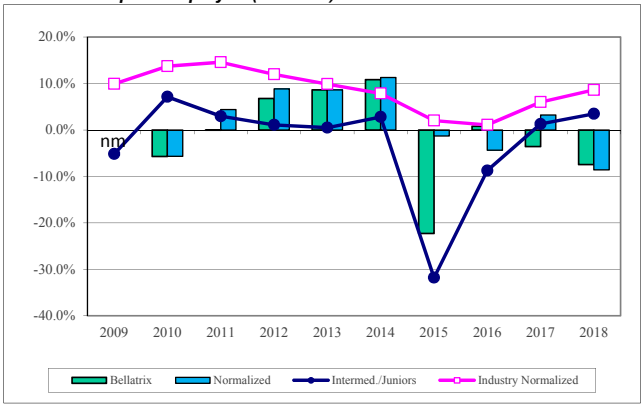
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



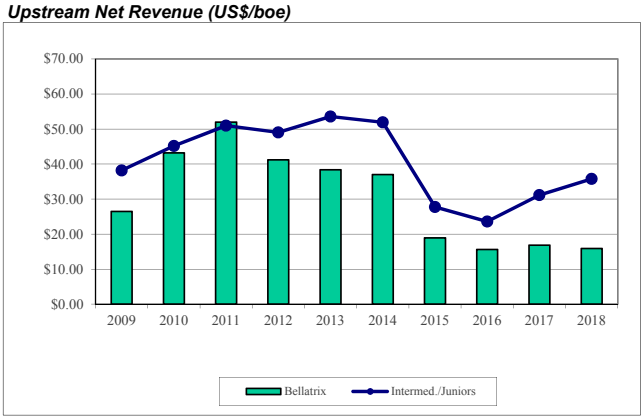
Source: BMO Capital Markets, Company Reports

Bellatrix Exploration (BXE - TSX)

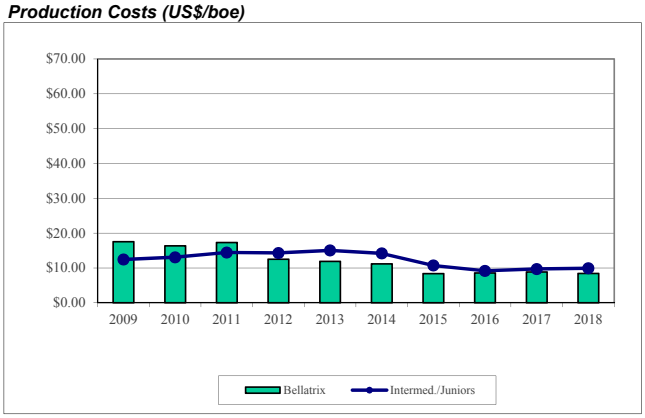
US$/boe, net

North America

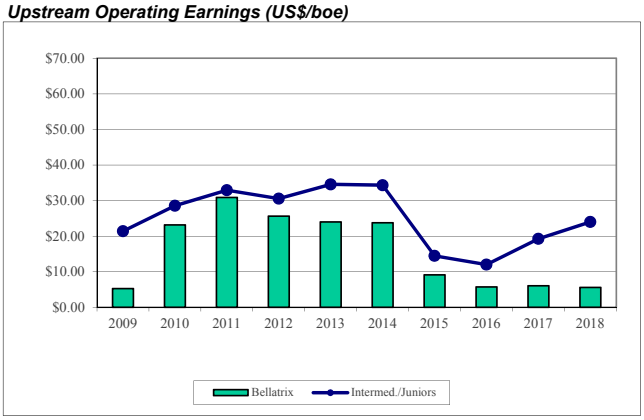
Upstream Net Revenue (US$/boe)



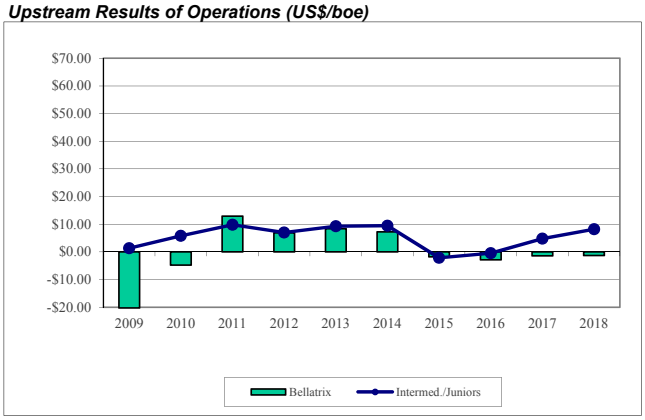
Production Costs (US$/boe)



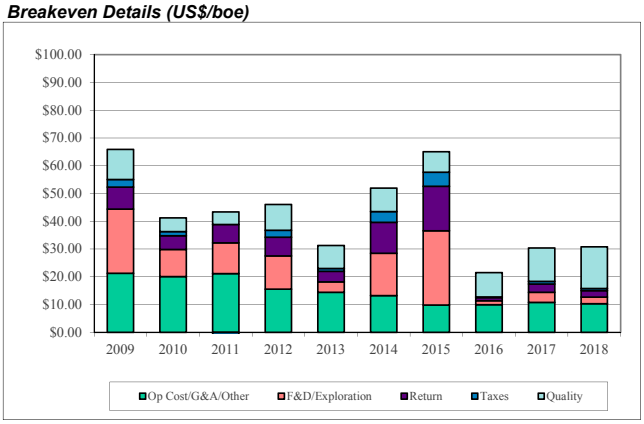
Upstream Operating Earnings (US$/boe)



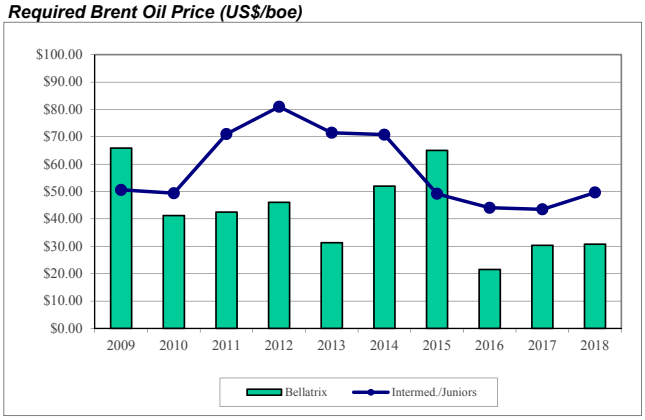
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Bellatrix Exploration (BXE - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	-	81	92	167	178	235	430	227	152	170	154
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	8	(4)	24	(11)	(5)	24	(1)	63	14
Total Revenue and Other Income	-	81	100	163	203	224	424	251	151	233	168
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	43	40	57	58	74	123	107	95	104	96
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	9	9	13	14	16	23	18	15	23	22
Depreciation, Depletion and Amortization	-	80	73	64	76	83	155	145	103	93	83
Interest, net	-	12	7	8	11	13	19	33	36	30	31
Other	-	88	5	27	6	(51)	(95)	406	(73)	41	11
Earnings Before Income Tax	-	(151)	(35)	(5)	38	89	199	(458)	(25)	(59)	(76)
Income Taxes:											
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	-	(39)	(8)	1	10	19	51	(110)	(5)	12	37
Total Income Taxes	-	(39)	(8)	1	10	19	51	(110)	(5)	12	37
Minority Interest	-	0	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	(112)	(27)	(6)	28	70	148	(348)	(20)	(70)	(113)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(112)	(27)	(6)	28	70	148	(348)	(20)	(70)	(113)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	(112)	(27)	(6)	28	70	148	(348)	(20)	(70)	(113)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	-	(112)	(27)	(6)	28	70	148	(348)	(20)	(70)	(113)
Charges and Credits Not Impacting Cash	-	141	65	89	84	41	160	9	27	159	120
Other	-	2	9	12	(1)	24	(63)	425	24	(43)	30
Cash Flow From Operations	-	32	47	95	111	134	245	86	31	45	37
Change in Working Capital / Other	-	(5)	(4)	4	(2)	(9)	22	(5)	(3)	(2)	11
Net Cash From Operating Activities	-	27	43	99	109	125	267	81	28	43	48
Total Capital Expenditures	-	(15)	(104)	(182)	(185)	(295)	(657)	(125)	(60)	(95)	(54)
Acquisitions, net	-	82	14	4	7	1	39	12	224	37	1
Other	-	2	3	9	(7)	95	(41)	(34)	(9)	(4)	(10)
Net Cash From Investing Activities	-	69	(87)	(168)	(186)	(199)	(659)	(146)	156	(62)	(63)
Financing Activities:											
Net Change in Debt	-	(92)	(22)	16	76	(89)	238	65	(207)	20	23
Net Change in Common Stock	-	-	60	53	1	163	156	0	29	0	0
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	(4)	6	(0)	(1)	0	(2)	1	(6)	0	(8)
Net Cash From Financing Activities	-	(96)	44	69	77	74	392	66	(184)	20	15
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	0	(0)	(0)	(0)	0	(0)	0	0	0	0
Cash and Equivalents, Beginning of Year	-	-	-	(0)	(0)	(0)	(0)	(0)	(0)	-	0
Cash and Equivalents, End of Year	-	0	(0)	(0)	(0)	(0)	(0)	(0)	0	0	0

Source: BMO Capital Markets, Company Reports

Bellatrix Exploration (BXE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	26	44	53	52	125	129	58	44	63	39
Net Property, Plant and Equipment	-	362	421	523	628	1,385	1,876	1,224	999	916	899
Other Assets	-	1	8	11	1	-	-	52	55	56	16
Total Assets	-	388	473	587	682	1,510	2,005	1,334	1,098	1,034	954
Liabilities and Stockholders' Equity											
Total Current Liabilities	-	21	45	74	53	249	210	88	104	77	88
Long-term Debt	-	97	86	107	184	279	498	527	274	306	289
Deferred Income Taxes	-	-	-	-	-	26	74	-	-	-	-
Other Liabilities and Deferred Credits	-	23	28	53	63	79	92	84	68	54	57
Total Liabilities	-	141	160	235	300	633	874	699	446	437	435
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Common Shares	-	227	312	379	376	800	906	783	807	824	859
Contributed Surplus (Paid-in Capital)	-	25	30	34	37	38	40	40	41	43	44
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	(4)	(28)	(61)	(32)	40	185	(188)	(202)	(276)	(390)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	6	6	7
Total Shareholders' Equity	-	248	313	352	381	878	1,131	635	652	597	519
Total Liabilities and Shareholders' Equity	-	388	473	587	682	1,510	2,005	1,334	1,098	1,034	954
Return on Capital Employed (ROCE)	**0.0%**	**nm**	**-5.7%**	**0.0%**	**6.8%**	**8.6%**	**10.8%**	**-22.3%**	**0.8%**	**-3.6%**	**-7.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue		$26.48	$43.21	$51.98	$41.18	$38.36	$36.99	$18.92	$15.62	$16.84	$15.88	$16.13	$20.71
Production Costs		$17.57	$16.35	$17.32	$12.51	$11.88	$11.16	$8.38	$8.57	$8.88	$8.42	$8.62	$9.06
Exploration		$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A		$32.61	$29.37	$19.59	$16.26	$13.30	$14.00	$11.44	$9.31	$7.91	$7.25	$8.14	$9.98
G&A / Other		$3.68	$3.69	$3.82	$3.06	$2.51	$2.08	$1.44	$1.36	$1.93	$1.91	$1.74	$1.74
Pre-tax Results of Operations		-$27.37	-$6.20	$11.26	$9.35	$10.66	$9.74	-$2.34	-$3.61	-$1.88	-$1.70	-$2.38	-$0.06
Income Taxes		-$7.09	-$1.42	-$1.67	$2.49	$2.28	$2.51	-$0.56	-$0.74	-$0.47	-$0.42	-$0.56	-$0.01
Results of Operations		-$20.28	-$4.78	$12.92	$6.86	$8.39	$7.24	-$1.78	-$2.87	-$1.41	-$1.27	-$1.82	-$0.05

Source: BMO Capital Markets, Company Reports

Bellatrix Exploration (BXE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	27.0	28.8	33.9	51.5	74.4	126.3	153.0	135.1	147.7	139.0	140.6	140.2
Liquids Production (b/d)	-	2,221	1,981	3,323	4,191	4,767	9,245	9,315	7,845	7,590	8,187	7,874	8,436
Total Production (boe/d)	-	6,717	6,782	8,968	12,770	17,168	30,301	34,817	30,358	32,213	31,350	31,307	31,808
% Gas Production	-	67%	71%	63%	67%	72%	69%	73%	74%	76%	74%	75%	73%
% Oil Production	-	33%	29%	37%	33%	28%	31%	27%	26%	24%	26%	25%	27%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	57.4	74.8	120.9	166.7	383.8	539.5	512.8	618.5	656.9	706.3	660.6	606.8
Closing Oil Reserves (mmbbls)	-	3.7	7.4	11.3	14.4	33.1	38.2	35.2	31.9	40.1	51.9	41.3	39.5
Closing Total Proven Reserves (mmboe)	-	13.3	19.9	31.5	42.2	97.1	128.1	120.6	135.0	149.6	169.6	151.4	140.6
% Gas Reserves	-	72%	63%	64%	66%	66%	70%	71%	76%	73%	69%	73%	72%
% Oil Reserves	-	28%	37%	36%	34%	34%	30%	29%	24%	27%	31%	27%	28%
Proven Reserve Life Index	-	5.4	8.1	9.6	9.1	15.6	11.6	9.5	12.2	12.8	14.9	13.3	12.2
Proven Reserve Additions:													
Gas Additions (bcf)	-	1.3	28.3	62.9	61.9	238.4	194.8	-0.7	152.3	79.7	93.5	325.5	519.6
Oil Additions (mmbbls)	-	-3.1	4.4	5.5	4.6	20.4	8.1	-1.5	-0.9	9.4	14.5	23.0	29.7
Total Additions (mmboe)	-	-2.9	9.1	16.0	15.0	60.1	40.6	-1.6	24.5	22.7	30.1	77.3	116.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	1.5	9.9	12.3	10.4	27.0	13.5	10.9	28.5	23.5	5.5	57.5	81.9
Net Acquisitions	-	-4.9	-0.6	0.1	0.9	24.3	15.7	-6.6	-11.1	-7.7	13.8	-5.0	4.1
Revisions of Estimates	-	0.5	-0.1	3.7	3.7	8.8	11.4	-5.8	7.0	6.9	10.9	24.7	30.3
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-51.8%	108.4%	76.6%	69.6%	44.9%	33.4%	-685.7%	116.5%	103.9%	18.1%	74.4%	70.4%
Net Acquisitions	-	169.1%	-7.0%	0.4%	5.9%	40.4%	38.7%	419.1%	-45.1%	-34.2%	45.9%	-6.4%	3.5%
Revisions of Estimates	-	-17.3%	-1.4%	23.0%	24.5%	14.7%	28.0%	366.5%	28.7%	30.3%	36.0%	32.0%	26.1%
Additions as % of Production:													
Gas	-	12.8%	269.0%	509.2%	329.5%	877.7%	422.4%	-1.2%	309.0%	147.8%	184.4%	211.4%	203.0%
Oil	-	-385.2%	609.4%	456.7%	303.5%	1172.7%	240.9%	-43.2%	-30.7%	338.7%	486.4%	267.2%	192.9%
Total	-	-118.8%	368.4%	489.7%	321.0%	959.6%	367.0%	-12.5%	221.2%	192.8%	263.2%	225.5%	200.3%
Additions as % of Reserves:													
Gas	-	2.2%	37.8%	52.1%	37.1%	62.1%	36.1%	-0.1%	24.6%	12.1%	13.2%	49.3%	85.6%
Oil	-	-83.7%	59.2%	49.0%	32.3%	61.6%	21.3%	-4.2%	-2.8%	23.4%	28.0%	55.8%	75.3%
Total	-	-21.9%	45.8%	51.0%	35.5%	61.9%	31.7%	-1.3%	18.2%	15.1%	17.8%	51.0%	82.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	$0.6	$1.2	$17.0	$8.6	$11.0	$16.6	$4.7	$2.2	$3.3	$1.1	$6.7	$27.9
Exploration & Development	-	$13.9	$94.9	$160.8	$155.9	$270.9	$450.4	$119.5	$57.4	$91.2	$38.8	$187.3	$757.3
Net Acquisitions	-	-$81.8	-$6.5	-$0.4	$14.3	-$55.9	$150.9	-$11.3	-$225.9	-$37.2	$6.1	-$257.0	-$117.3
Total Expenditures	-	-$67.3	$89.5	$177.4	$178.8	$226.0	$617.9	$112.9	-$166.3	$57.4	$46.0	-$63.0	$667.9
Expenditures as % of Total:													
Land & Seismic	-	-0.9%	1.3%	9.6%	4.8%	4.9%	2.7%	4.1%	-1.3%	5.8%	2.4%	-10.6%	4.2%
Exploration & Development	-	-20.7%	106.0%	90.7%	87.2%	119.9%	72.9%	105.8%	-34.5%	158.9%	84.3%	-297.6%	113.4%
Net Acquisitions	-	121.6%	-7.3%	-0.2%	8.0%	-24.7%	24.4%	-10.0%	135.8%	-64.7%	13.3%	408.2%	-17.6%
Cashflow (US$million)	-	$32.2	$46.6	$95.3	$111.1	$134.1	$245.2	$85.7	$30.9	$44.9	$37.1	$112.9	$443.9
Cashflow (US$/boe)	-	$13.12	$18.83	$29.13	$23.84	$21.41	$22.17	$6.75	$2.79	$3.82	$3.24	$3.29	$7.65
Recycle Ratio	-	0.6x	1.9x	2.6x	2.0x	5.7x	1.5x	-0.1x	-0.4x	1.5x	2.1x	-4.0x	1.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	$7.22	$9.84	$11.13	$11.68	$7.87	$18.76	$24.59	$1.68	$3.11	$2.44	$2.36	$7.00
Net Acquisition Costs	-	$16.62	$10.24	-$6.81	$16.21	-$2.30	$9.62	$1.70	$20.43	$4.80	$0.44	$51.55	-$28.82
All Sources (incl. revisions)	-	$23.12	$9.82	$11.07	$11.95	$3.76	$15.22	-$71.33	-$6.79	$2.53	$1.53	-$0.81	$5.74
Exploration & Development (excl. revisions)	-	$9.63	$9.72	$14.48	$15.79	$10.44	$34.48	$11.44	$2.09	$4.02	$7.31	$3.37	$9.58
Net Acquisition Costs	-	$16.62	$10.24	-$6.81	$16.21	-$2.30	$9.62	$1.70	$20.43	$4.80	$0.44	$51.55	-$28.82
All Sources (excl. revisions)	-	$19.71	$9.68	$14.38	$15.82	$4.41	$21.14	$26.76	-$9.51	$3.64	$2.39	-$1.20	$7.77

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bellatrix Exploration (BXE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	17.57	16.35	17.32	12.51	11.88	11.16	8.38	8.57	8.88	8.42	8.62	9.06
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	3.68	3.69	3.82	3.06	2.51	2.08	1.44	1.36	1.93	1.91	1.74	1.74
F&D Costs (1-Year)	-	23.12	9.82	11.07	11.95	3.76	15.22	26.76	1.44	3.64	2.39	2.49	9.89
Return on Capital	-	7.92	4.94	6.66	6.75	3.82	11.14	15.98	1.11	2.95	2.30	2.11	7.65
Income Taxes	-	2.77	1.47	(0.86)	2.45	1.04	3.86	5.07	0.29	0.98	0.77	0.65	2.42
Breakeven Oil Price	**-**	**55.05**	**36.27**	**38.00**	**36.72**	**23.01**	**43.47**	**57.64**	**12.77**	**18.37**	**15.78**	**15.61**	**30.76**
Quality Differential	-	10.83	4.95	4.51	9.30	8.29	8.50	7.40	8.76	11.98	15.00	11.91	10.33
Required Brent Price	**-**	**65.88**	**41.22**	**42.51**	**46.02**	**31.30**	**51.96**	**65.04**	**21.53**	**30.36**	**30.78**	**27.52**	**41.08**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	25.29	31.17	32.05	26.53	24.41	18.61	12.08	13.02	15.71	17.08	15.10	15.01
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	5.30	7.04	7.07	6.50	5.16	3.46	2.08	2.06	3.41	3.88	3.05	2.88
F&D Costs (1-Year)	-	22.38	15.03	21.20	26.12	7.08	28.22	40.19	2.27	6.33	4.62	4.41	16.32
Return on Capital	-	7.46	8.35	12.57	15.00	7.89	20.53	24.26	1.71	5.31	4.74	3.85	12.86
Income Taxes	-	2.61	2.48	(1.62)	5.44	2.14	7.11	7.69	0.44	1.77	1.58	1.18	4.07
Breakeven Oil Price	**-**	**63.03**	**64.07**	**71.27**	**79.58**	**46.68**	**77.94**	**86.29**	**19.51**	**32.54**	**31.90**	**27.59**	**51.14**
Quality Differential	-	15.59	9.43	8.35	19.71	17.02	14.16	10.67	13.30	21.21	26.55	20.35	17.18
Required Brent Price	**-**	**78.62**	**73.50**	**79.62**	**99.29**	**63.71**	**92.10**	**96.96**	**32.81**	**53.74**	**58.44**	**47.95**	**68.32**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	25.29	31.17	32.05	26.53	24.41	18.61	12.08	13.02	15.71	17.08	15.10	15.01
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	5.30	7.04	7.07	6.50	5.16	3.46	2.08	2.06	3.41	3.88	3.05	2.88
F&D Costs (1-Year)	-	1.23	33.50	47.70	44.34	17.67	37.29	20.17	6.28	6.49	3.62	5.44	14.77
Return on Capital	-	0.41	18.61	28.19	25.64	19.65	27.07	12.17	4.77	5.45	3.72	4.75	11.64
Income Taxes	-	0.14	5.52	(3.64)	9.30	5.34	9.38	3.86	1.23	1.82	1.24	1.46	3.69
Breakeven Oil Price	**-**	**32.36**	**95.85**	**111.37**	**112.31**	**72.23**	**95.81**	**50.36**	**27.37**	**32.88**	**29.54**	**29.80**	**47.99**
Quality Differential	-	15.59	9.43	8.35	19.71	17.02	14.16	10.67	13.30	21.21	26.55	20.35	17.18
Required Brent Price	**-**	**47.95**	**105.28**	**119.72**	**132.02**	**89.25**	**109.98**	**61.03**	**40.67**	**54.09**	**56.09**	**50.15**	**65.16**

Source: BMO Capital Markets, Company Reports

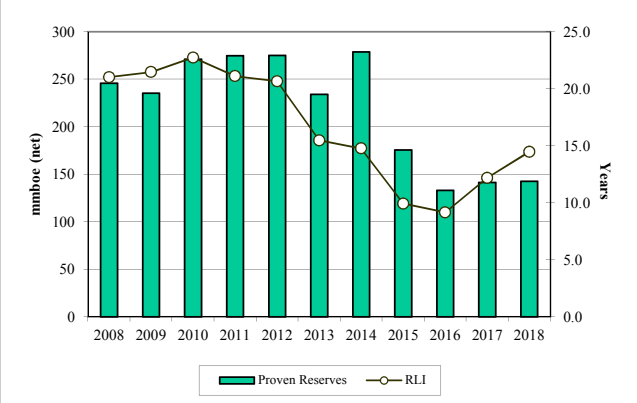
See pages F1 to F4 for analyst coverage.

Berry Petroleum (BRY - NSDQ)

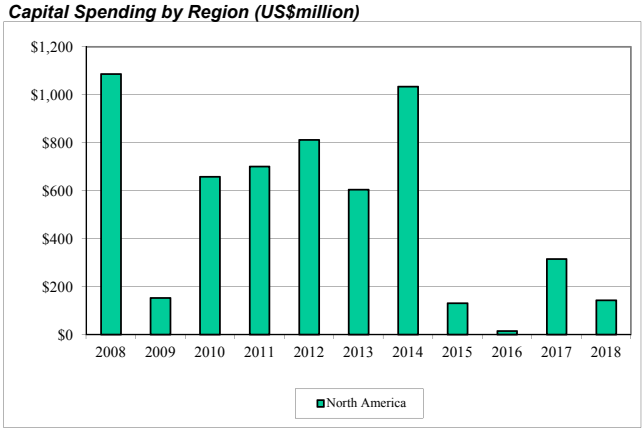
US$, net

- Berry was previously removed from the Cost Study as a result of being acquired by LINN Energy. Berry has once again become a stand-alone company, completing an IPO in July 2018. Therefore we have re-added Berry to the Cost Study.
- Berry Petroleum reported results of operations of $20.67/boe in 2018 compared to $8.44/boe in 2017.
- One-year F&D costs came in at $10.87/boe. On a realized oil:gas price ratio basis, adjusted F&D costs increased to $6.84/boe from $5.46/boe, while costs for PD reserves were $11.29/boe versus $23.26/boe last year.
- Berry Petroleum's 2018 operations imply a required Brent breakeven oil price of $45.01/boe on a realized ratio basis on total proved reserves, while PD costs suggest Brent breakeven of $55.06/boe.
- The company reported ROCE of 13.5% in 2018 versus a loss of 20.5% in 2017.

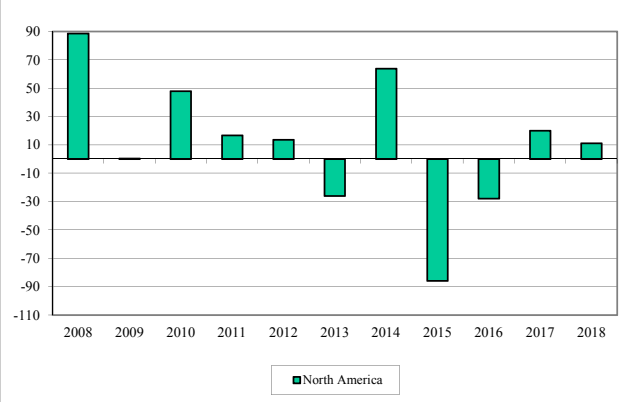
Proven Reserves vs RLI



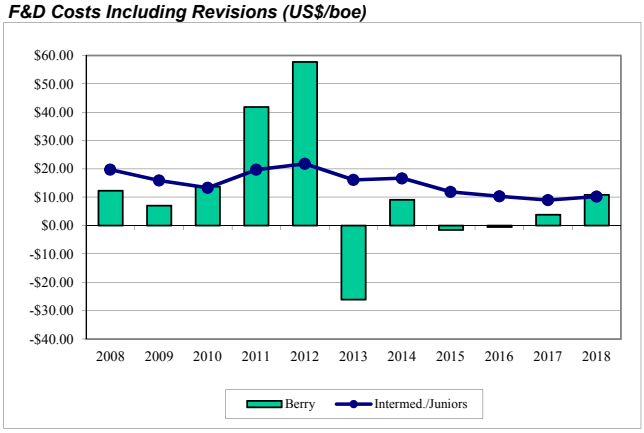
Capital Spending by Region (US$million)



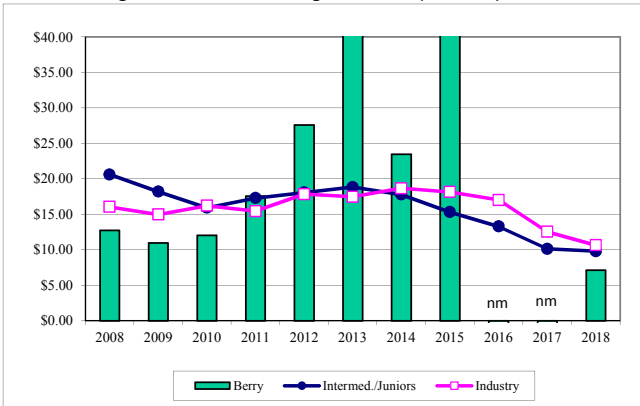
Proven Reserve Additions by Region (million boe)



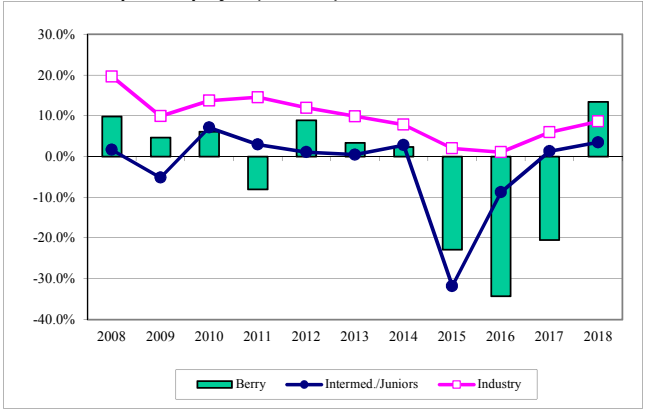
F&D Costs Including Revisions (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



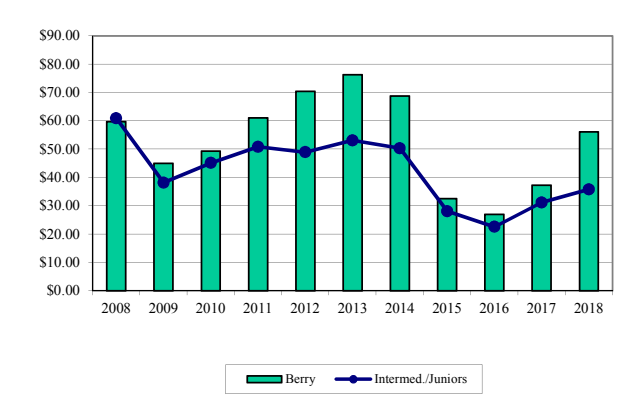
Source: BMO Capital Markets, Company Reports

Berry Petroleum (BRY - NSDQ)

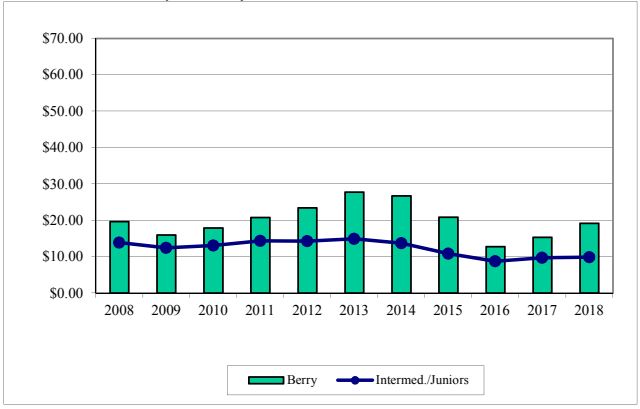
US$/boe, net

North America

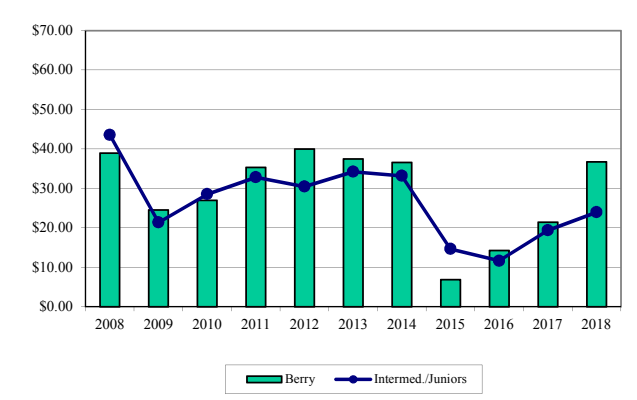
Upstream Net Revenue (US$/boe)



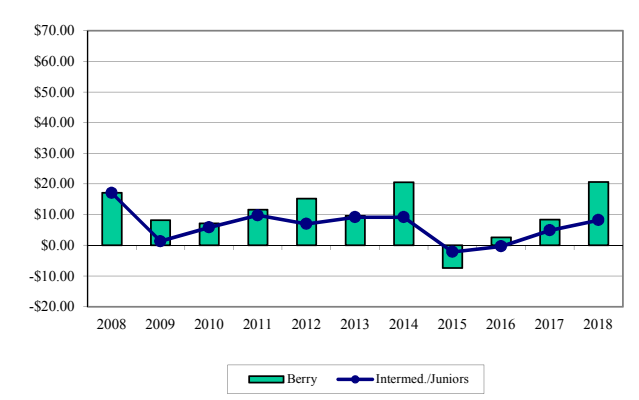
Production Costs (US$/boe)



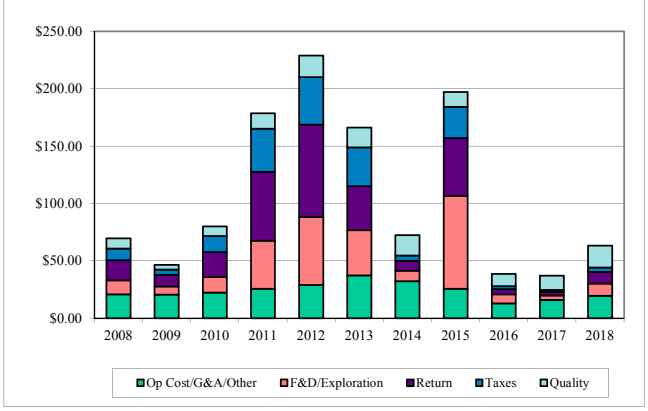
Upstream Operating Earnings (US$/boe)



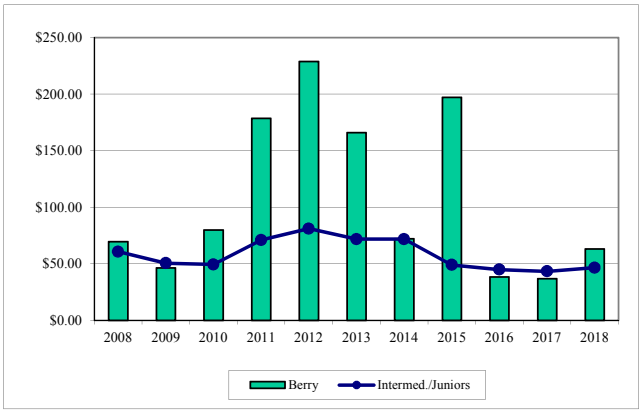
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Berry Petroleum (BRY - NSDQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	698	501	620	871	937	1,154	1,298	575	392	432	553
Midstream / Downstream Revenue	64	59	57	49	38	44	51	30	27	29	38
Other	40	(5)	(7)	2	4	(39)	82	36	(8)	(49)	(4)
Total Revenue and Other Income	802	554	670	921	979	1,158	1,431	642	411	412	587
Crude Oil and Product Purchases	-	-	-	-							
Production and Transportation Expenses	285	206	245	297	332	420	406	297	227	203	199
Marketing Expenses	32	21	20	13	7	8	8	4	3	3	2
Exploration / Dry Hole Costs	12	5	2	5	21	24	-	-	-	-	-
General and Administrative	55	49	53	62	72	143	103	86	79	64	54
Depreciation, Depletion and Amortization	141	144	183	216	228	291	302	251	178	97	86
Interest, net	26	50	67	73	83	100	88	86	61	27	36
Other	39	11	(35)	626	(23)	34	501	933	1,146	540	20
Earnings Before Income Tax	211	68	136	(370)	260	139	23	(1,015)	(1,283)	(521)	190
Current Income Taxes	9	1	(1)	7	5	(11)	-	-	0	1	(1)
Future Income Taxes	68	20	55	(149)	83	77	0	(0)	(0)	2	44
Total Income Taxes	77	21	54	(142)	88	65	0	(0)	0	3	43
Minority Interest	-	-									
Earnings From Continuing Operations	134	47	83	(228)	172	73	23	(1,015)	(1,283)	(524)	147
Discontinued Operations/Extraordinary Items	-	7	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-									
Net Earnings	134	54	83	(228)	172	73	23	(1,015)	(1,283)	(524)	147
Preferred Stock Dividends											
Net Earnings to Common Shareholders	134	54	83	(228)	172	73.474	22.596	(1,015)	(1,283)	(524)	147

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	134	54	83	(228)	172	73	23	(1,015)	(1,283)	(524)	147
Charges and Credits Not Impacting Cash	219	181	239	697	326	367	556	1,105	1,209	99	130
Other	68	6	21	(7)	(17)	59	47	24	75	542	(183)
Cash Flow From Operations	420	240	343	462	480	499	625	114	1	116	94
Change in Working Capital / Other	(11)	(28)	25	(6)	21	0	(42)	8	13	14	9
Net Cash From Operating Activities	410	212.576	367.237	455.899	501.439	499.646	583.480	122.518	13.197	129.830	103.100
Upstream Spending	(393)	(135)	(310)	(527)	(676)	(612)	(524)	(33)	(22)	(54)	(112)
Midstream / Downstream Spending	-	-									
Acquisitions, net	(666)	126	(334)	(158)	(61)	8	8	5	(13)	(30)	(7)
Other	(28)	(30)	(28)	(26)	(21)	-	-	129			
Net Cash From Investing Activities	(1,087)	(38.654)	(672.869)	(711.019)	(758.172)	(604.460)	(516.222)	101.368	(34.602)	(83.658)	(119.069)
Net Change in Debt	698	(150)	103	(364)	281	610	(206)	(355)	(2)	(541)	12
Net Change in Common Stock	-	-	224	-	-	-	220	221	-	-	87
Net Change in Preferred Stock	-	-	-	-		-	-	-	-	335	(60)
Cash Dividends Paid	(13)	(14)	(16)	(17)	(18)	(17)	(119)	(89)	-	-	(19)
Other	(7)	(5)	(11)	635	(7)	(432)	(12)	(1)	-	-	(4)
Net Cash From Financing Activities	677	(169)	301	255	257	160	(117)	(224)	(2)	(206)	16
Effect of Exchange Rate on Cash	-	-				-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(0)	5	(5)	0	0.014	55.601	(49.455)	(0.563)	(23.106)	(159.666)	(0.058)
Cash and Equivalents, Beginning of Year	0	0	5	0	0	0.446	51.041	1.586	251.510	228.404	68.738
Cash and Equivalents, End of Year	0	5	0	0	0.446	51.041	1.586	1.023	228.404	68.738	68.680

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Berry Petroleum (BRY - NSDQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	189	103	143	168	157	210	205	81	309	138	229
Net Property, Plant and Equipment	2,254	2,106	2,656	2,531	3,129	4,886	4,455	3,514	3,514	1,387	1,443
Other Assets	99	30	40	36	40	11	308	266	266	22	21
Total Assets	2,542	2,240.135	2,838.616	2,734.952	3,325.402	5,107.045	4,967.408	3,861.476	4,088.857	1,546.402	1,692.263
Total Current Liabilities	261	152	271	231	287	525	261	1,018	1,018	183	144
Long-term Debt	1,132	1,009	1,109	1,380	1,666	2,090	2,087	845	844	379	392
Deferred Income Taxes	270	237	329	185	255	-	-	-	-	2	46
Other Liabilities and Deferred Credits	52	139	105	97	103	197	200	212	212	124	104
Total Liabilities	1,715	1,536.876	1,814.063	1,894.223	2,310.611	2,811.558	2,548.404	2,075.317	2,073.616	687.092	685.817
Minority Interests	-	-									
Common Shares	0	0	1	1	1	-	-	-	-	0	0
Contributed Surplus (Paid-in Capital)	80	89	327	350	365	2,315	2,416	2,799	2,799	545	915
Preferred Stock	-	-	-	-	-	-	-	-	-	335	-
Retained Earnings	634	674	740	496	650	(20)	3	(1,013)	(2,296)	(21)	116
Other / Comprehensive Income (Loss)	114	(60)	(44)	(6)	-	-	-	-	1,512	-	(24)
Total Shareholders' Equity	828	703.259	1,024.553	840.729	1,014.791	2,295.487	2,419.004	1,786.159	2,015.241	859.310	1,006.446
Total Liabilities and Shareholders' Equity	2,542	2,240.135	2,838.616	2,734.952	3,325.402	5,107.045	4,967.408	3,861.476	4,088.857	1,546.402	1,692.263
Return on Capital Employed (ROCE)	**9.9%**	**4.7%**	**6.1%**	**-8.1%**	**8.9%**	**3.4%**	**2.4%**	**-22.9%**	**-34.2%**	**-20.5%**	**13.5%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

											Weighted Average	
Net Revenue	59.66	44.95	49.30	61.01	70.36	76.25	68.74	32.55	27.00	37.23	56.11	38.27	44.81
Production Costs	19.66	15.94	17.88	20.81	23.39	27.75	26.69	20.83	12.73	15.32	19.16	15.33	19.62
Exploration	0.00	0.00	0.00	0.14	1.58	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DD&A	11.82	12.76	15.05	16.42	16.96	19.21	16.01	14.23	11.67	8.08	8.31	9.59	12.39
G&A/Other	1.05	4.49	4.43	4.74	5.39	9.47	5.44	4.87	0.00	0.50	0.19	0.21	2.71
Pre-tax Earnings	27.13	11.76	11.93	18.90	23.05	18.24	20.60	-7.37	2.59	13.32	28.44	13.13	10.08
Income Taxes	9.93	3.58	4.72	7.26	7.82	8.58	0.06	0.00	0.00	4.88	7.77	3.70	1.85
Results of Opeartions	17.20	8.18	7.21	11.64	15.23	9.66	20.54	-7.37	2.59	8.44	20.67	9.43	8.23

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue	59.66	44.95	49.30	61.01	70.36	76.25	68.74	32.55	27.00	37.23	56.11	38.27	44.81
Production Costs	19.66	15.94	17.88	20.81	23.39	27.75	26.69	20.83	12.73	15.32	19.16	15.33	19.62
Exploration	0.00	0.00	0.00	0.14	1.58	1.59	0.00	0.00	0.00	0.00	0.00	0.00	0.00
DD&A	11.82	12.76	15.05	16.42	16.96	19.21	16.01	14.23	11.67	8.08	8.31	9.59	12.39
G&A/Other	1.05	4.49	4.43	4.74	5.39	9.47	5.44	4.87	0.00	0.50	0.19	0.21	2.71
Pre-tax Earnings	27.13	11.76	11.93	18.90	23.05	18.24	20.60	-7.37	2.59	13.32	28.44	13.13	10.08
Income Taxes	9.93	3.58	4.72	7.26	7.82	8.58	0.06	0.00	0.00	4.88	7.77	3.70	1.85
Results of Opeartions	17.20	8.18	7.21	11.64	15.23	9.66	20.54	-7.37	2.59	8.44	20.67	9.43	8.23

Source: BMO Capital Markets, Company Reports

Berry Petroleum (BRY - NSDQ)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	70.0	62.1	65.7	65.5	54.2	54.2	79.3	92.7	78.3	53.0	26.3	52.5	65.9
Liquids Production (b/d)	20,384	19,688	21,712	24,770	27,463	27,463	38,534	32,942	26,767	22,959	22,619	24,115	28,764
Total Production (boe/d)	32,054	30,033	32,666	35,686	36,497	36,497	51,748	48,400	39,816	31,795	26,998	32,870	39,751
% Gas Production	36%	34%	34%	31%	25%	25%	26%	32%	33%	28%	16%	27%	28%
% Oil Production	64%	66%	66%	69%	75%	75%	74%	68%	67%	72%	84%	73%	72%
Proven Reserves:													
Gas Reserves (bcf)	724.1	632.2	630.2	534.3	425.5	280.1	687.0	387.8	372.8	237.1	160.8	256.9	369.1
Oil Reserves (mmbbls)	125.3	129.9	166.2	185.9	204.2	204.2	164.4	110.8	71.0	101.9	115.9	96.2	112.8
Total Proven Reserves (mmboe)	245.9	235.3	271.2	274.9	275.1	250.9	278.9	175.5	133.1	141.4	142.7	139.1	174.3
% Gas Reserves	49%	45%	39%	32%	26%	19%	41%	37%	47%	28%	19%	31%	35%
% Oil Reserves	51%	55%	61%	68%	74%	81%	59%	63%	53%	72%	81%	69%	65%
Proven Reserve Life Index	21.0	21.5	22.7	21.1	20.7	18.8	14.8	9.9	9.2	12.2	14.5	11.9	12.1
Proven Reserve Additions:													
Gas Additions (bcf)	434.2	(69.3)	22.0	-72.0	-89.0	-89.0	435.9	-265.3	13.5	-116.3	-66.7	(169.5)	1.0
Oil Additions (mmbbls)	16.1	11.9	44.2	28.7	28.4	28.4	-8.9	-41.5	-30.1	39.3	22.3	31.5	(19.0)
Total Additions (mmboe)	88.5	0.3	47.8	16.7	13.5	13.5	63.7	-85.8	-27.9	19.9	11.2	3.2	-18.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	50.6	18.1	21.7	30.6	25.1	25.1	26.4	1.6	1.8	41.6	22.4	65.8	93.7
Acquisitions	55.0	6.3	29.6	14.6	11.1	11.1	90.7	0.0	0.0	24.3	0.9	25.2	115.9
Dispositions	0.0	(21.1)	0.0	0.0	-0.6	-0.6	-49.7	0.0	0.0	-60.9	-2.0	(62.8)	(112.6)
Revisions of Estimates	(17.1)	(3.0)	(3.5)	(28.4)	(22.2)	(22.2)	(3.6)	(87.4)	(29.7)	14.9	(10.1)	(24.9)	(115.8)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	57.2%	5569.1%	45.4%	182.8%	186.0%	186.0%	41.4%	-1.9%	-6.6%	208.8%	199.8%	2038.4%	-499.0%
Acquisitions	62.2%	1938.5%	62.0%	87.1%	82.0%	82.0%	142.2%	0.0%	0.0%	122.2%	7.7%	781.1%	-616.9%
Dispositions	0.0%	-6492.3%	0.0%	0.0%	-4.1%	-4.1%	-78.0%	0.0%	0.0%	-305.7%	-17.6%	-1948.0%	599.3%
Revisions of Estimates	-19.4%	-915.3%	-7.4%	-169.9%	-163.9%	-163.9%	-5.6%	101.9%	106.6%	74.7%	-90.0%	-771.5%	616.6%
Additions as % of Production:													
Gas	1698.9%	-305.9%	91.7%	-301.2%	-449.7%	-449.7%	1506.2%	-783.8%	47.2%	-601.0%	-695.2%	-294.7%	0.9%
Oil	216.3%	165.3%	557.3%	317.9%	282.8%	282.8%	-63.2%	-345.4%	-308.3%	468.9%	270.1%	119.2%	-36.1%
Total	756.1%	3.0%	401.2%	128.5%	101.5%	101.5%	337.5%	-485.4%	-191.8%	171.6%	113.6%	9.0%	-25.9%
Additions as % of Reserves:													
Gas	60.0%	-11.0%	3.5%	-13.5%	-20.9%	-31.8%	63.4%	-68.4%	3.6%	-49.1%	-41.4%	-66.0%	0.3%
Oil	12.8%	9.1%	26.6%	15.5%	13.9%	13.9%	-5.4%	-37.5%	-42.5%	38.6%	19.2%	32.7%	-16.8%
Total	36.0%	0.1%	17.6%	6.1%	4.9%	5.4%	22.9%	-48.9%	-20.9%	14.1%	7.8%	2.3%	-10.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$32.9	$0.2	$2.3	$0.6	$16.4	$16.4	$0.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.1
Development	$385.6	$138.2	$320.9	$544.1	$714.3	$714.3	$555.6	$130.3	$13.1	$64.9	$143.0	$221.0	$906.9
Acquisitions	$668.0	$13.5	$334.4	$155.8	$81.4	$81.4	$478.3	$0.0	$1.5	$249.3	$0.0	$250.9	$729.2
Dispositions	na	na	na	na	na	na	na	na	na	na	na	na	na
Total Expenditures	$1,086.5	$151.9	$657.6	$700.5	$812.1	$812.1	$1,034.1	$130.3	$14.6	$314.3	$143.0	$471.9	$1,636.3
Expenditures as % of Total:													
Exploration	3.0%	0.1%	0.4%	0.1%	2.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Development	35.5%	91.0%	48.8%	77.7%	88.0%	88.0%	53.7%	100.0%	89.4%	20.7%	100.0%	46.8%	55.4%
Acquisitions	61.5%	8.9%	50.8%	22.2%	10.0%	10.0%	46.3%	0.0%	10.6%	79.3%	0.0%	53.2%	44.6%
Cashflow (US$million)	$420.1	$240.2	$342.6	$461.7	$480.5	$480.5	$625.1	$114.2	$0.6	$116.3	$94.0	$210.9	$950.2
Cashflow (US$/boe)	$35.91	$21.91	$28.73	$35.45	$36.07	$36.07	$33.09	$6.47	$0.04	$10.02	$9.54	$5.86	$13.10
Recycle Ratio	2.9x	3.1x	2.1x	0.8x	0.6x	0.6x	3.6x	-4.3x	-0.1x	2.6x	0.9x	0.8x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$12.51	$9.15	$17.76	$252.88	$244.83	$244.83	$24.38	-$1.52	-$0.47	$1.15	$11.63	$5.41	-$41.07
Acquisition Costs	$12.15	$2.14	$11.28	$10.68	$7.34	$7.34	$5.27	na	na	$10.25	$0.00	$9.96	$6.29
All Sources (incl. revisions)	$12.28	$7.09	$13.75	$41.85	$57.69	$57.69	$9.11	-$1.52	-$0.53	$3.89	$10.87	$7.14	$17.45
Exploration & Development (excl. revisions)	$8.27	$7.65	$14.88	$17.80	$29.06	$29.06	$21.08	$80.96	$7.17	$1.56	$6.39	$3.36	$9.68
Acquisition Costs	$12.15	$2.14	$11.28	$10.68	$7.34	$7.34	$5.27	na	na	$10.25	$0.00	$9.96	$6.29
All Sources (excl. revisions)	$10.29	$6.22	$12.81	$15.50	$22.41	$22.41	$8.84	$80.96	$8.01	$4.77	$6.16	$5.19	$7.81
Geographically Segmented Costs:													
North America	$12.28	$7.09	$13.75	$41.85	$57.69	$57.69	$9.11	-$1.52	-$0.53	$3.89	$10.87	$7.14	$17.45

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Berry Petroleum (BRY - NSDQ)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	19.66	15.94	17.88	20.81	23.39	27.75	26.69	20.83	12.73	15.32	19.16	15.33	19.62
Exploration Expense	-	-	-	0.14	1.58	1.59	-	-	-	-	-	-	-
G&A/Other	1.05	4.49	4.43	4.74	5.39	9.47	5.44	4.87	-	0.50	0.19	0.21	2.71
F&D Costs (1-Year)	12.28	7.09	13.75	41.85	57.69	37.99	9.11	80.96	8.01	3.89	10.87	7.59	22.57
Return on Capital	17.55	10.37	21.52	60.12	80.68	38.21	8.70	50.38	4.59	3.00	10.15	5.74	17.34
Income Taxes	10.13	4.54	14.07	37.49	41.44	33.95	4.69	27.13	2.47	1.74	3.82	2.25	3.90
Breakeven Oil Price	**60.67**	**42.42**	**71.65**	**165.15**	**210.16**	**148.97**	**54.63**	**184.16**	**27.81**	**24.46**	**44.18**	**31.12**	**66.14**
Quality Differential	22.27	4.00	10.27	24.46	22.74	12.01	15.97	10.59	7.27	2.72	6.33	5.44	8.58
Required Brent Price	**82.94**	**46.43**	**81.92**	**189.61**	**232.90**	**160.98**	**70.60**	**194.75**	**35.08**	**27.17**	**50.51**	**36.56**	**74.72**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	24.28	19.86	22.50	26.84	29.39	33.45	33.81	28.27	17.45	19.88	22.12	19.64	25.42
Exploration Expense	-	-	-	0.18	1.98	1.92	-	-	-	-	-	-	-
G&A/Other	1.30	5.60	5.58	6.11	6.77	11.42	6.89	6.61	-	0.65	0.22	0.27	3.51
F&D Costs (1-Year)	21.46	9.52	14.43	27.42	30.87	24.24	22.22	25.78	24.08	5.46	6.84	12.13	16.87
Return on Capital	27.88	12.71	21.52	38.56	43.11	24.53	17.49	15.05	11.62	4.22	6.20	8.69	12.08
Income Taxes	16.09	5.56	14.07	24.05	22.15	21.79	9.42	8.10	6.26	2.44	2.33	3.41	2.72
Breakeven Oil Price	**91.02**	**53.24**	**78.09**	**123.15**	**134.27**	**117.34**	**89.83**	**83.81**	**59.41**	**32.64**	**37.71**	**44.14**	**60.60**
Quality Differential	27.51	4.99	12.93	31.54	28.58	14.48	20.23	14.38	9.97	3.53	7.30	6.93	11.08
Required Brent Price	**118.53**	**58.23**	**91.02**	**154.70**	**162.84**	**131.82**	**110.06**	**98.19**	**69.38**	**36.17**	**45.01**	**51.08**	**71.68**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	24.28	19.86	22.50	26.84	29.39	33.45	33.81	28.27	17.45	19.88	22.12	19.64	25.42
Exploration Expense	-	-	-	0.18	1.98	1.92	-	-	-	-	-	-	-
G&A/Other	1.30	5.60	5.58	6.11	6.77	11.42	6.89	6.61	-	0.65	0.22	0.27	3.51
F&D Costs (1-Year)	47.69	10.61	40.18	25.99	38.67	34.93	18.88	30.83	28.21	23.26	11.29	20.92	25.04
Return on Capital	60.63	13.90	56.55	35.25	51.69	35.43	14.80	18.15	13.62	17.97	10.27	14.97	17.63
Income Taxes	35.00	6.08	36.98	21.99	26.55	31.48	7.97	9.77	7.33	10.39	3.86	5.88	3.97
Breakeven Oil Price	**168.90**	**56.05**	**161.80**	**116.36**	**155.06**	**148.62**	**82.36**	**93.63**	**66.61**	**72.15**	**47.76**	**61.69**	**75.57**
Quality Differential	27.51	4.99	12.93	31.54	28.58	14.48	20.23	14.38	9.97	3.53	7.30	6.93	11.08
Required Brent Price	**196.41**	**61.04**	**174.73**	**147.91**	**183.63**	**163.10**	**102.59**	**108.01**	**76.58**	**75.68**	**55.06**	**68.62**	**86.65**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

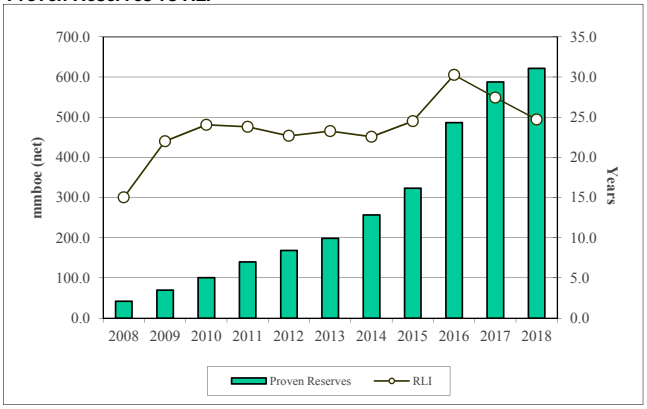
Birchcliff Energy Ltd. (BIR - TSX)

US$, net

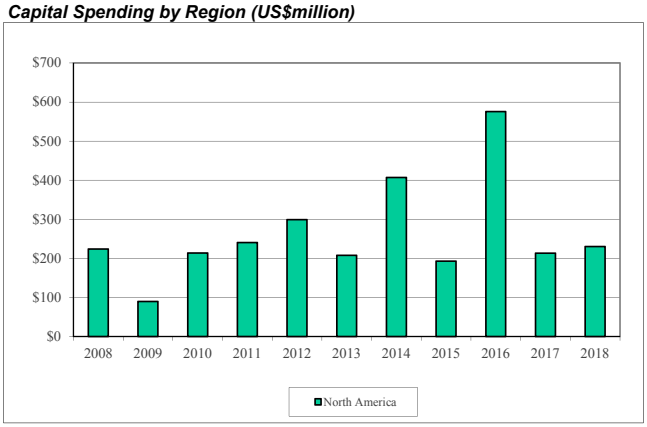
- Birchcliff's results of operations were lower at $2.73/boe in 2018 compared to $4.34/boe in 2017.
- The company's one-year F&D costs came in higher at $4.85/boe compared to $1.70/boe last year. Excluding revisions, F&D costs were $7.80/boe. On a realized oil:gas price ratio basis, F&D costs were $11.07/boe from $4.99/boe last year, while costs for PD reserves fell to $10.50/boe versus $13.10/boe the previous year.
- Birchcliff's 2018 operations imply a required Brent breakeven oil price of $68.93/boe on a realized ratio basis, while its PD costs imply a Brent breakeven oil price of $65.87/boe.
- The company reported ROCE of 5.1% compared to last year's loss of 1.1%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

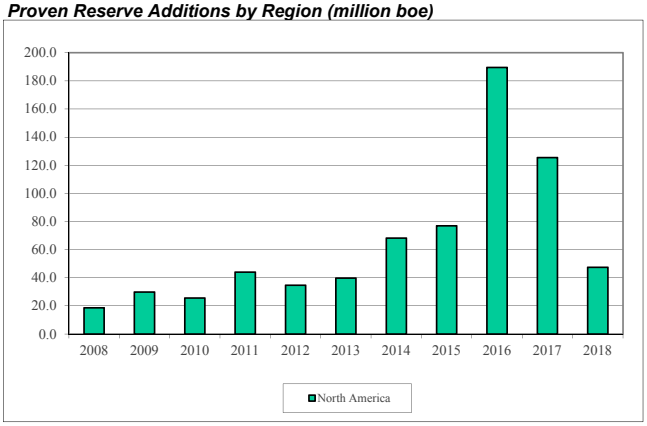
Proven Reserves vs RLI



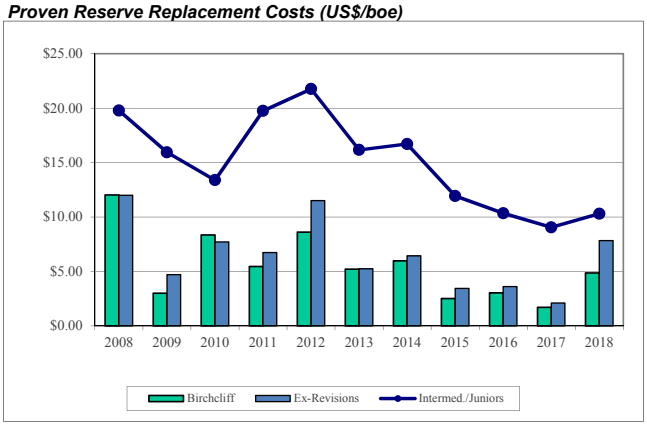
Capital Spending by Region (US$million)



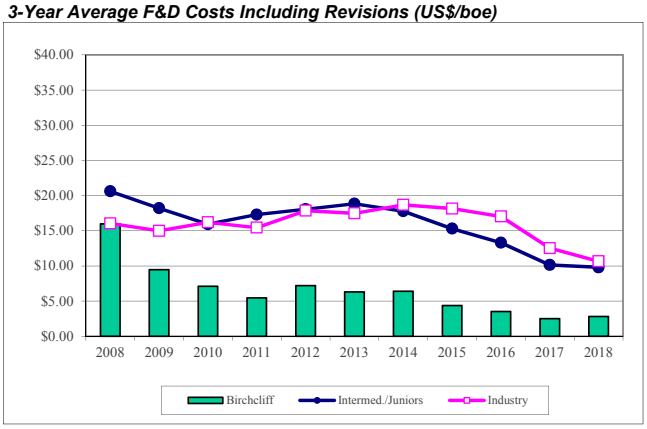
Proven Reserve Additions by Region (million boe)



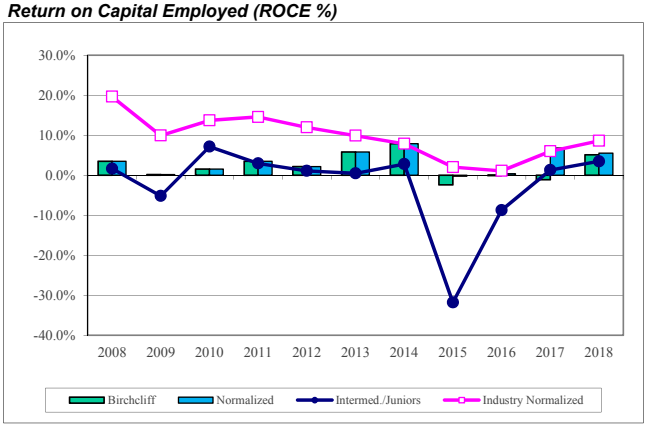
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

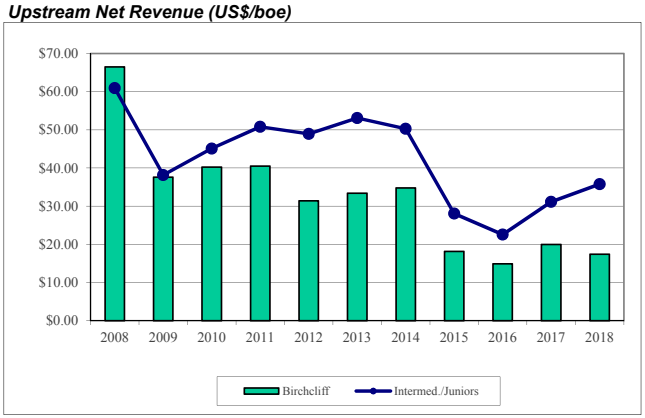
See pages F1 to F4 for analyst coverage.

Birchcliff Energy Ltd. (BIR - TSX)

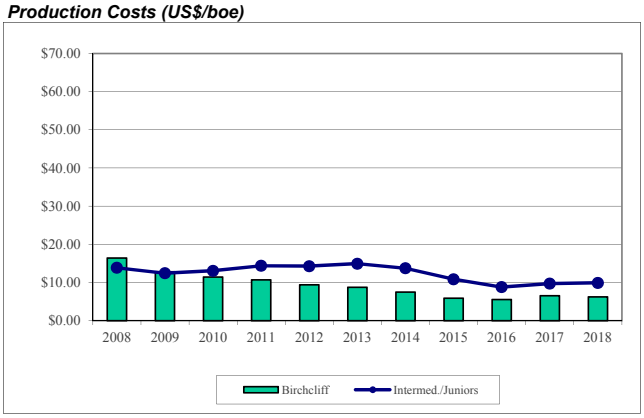
US$/boe, net

North America

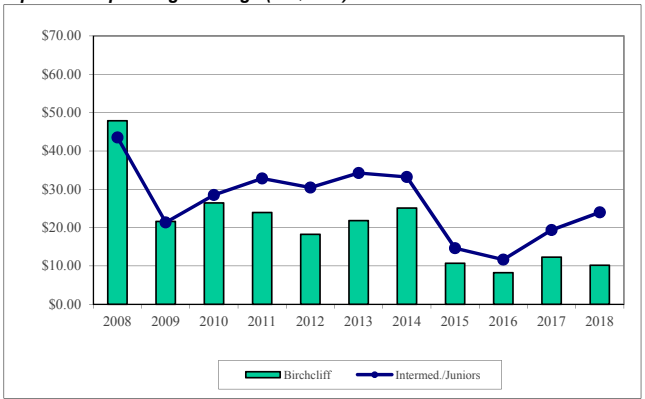
Upstream Net Revenue (US$/boe)



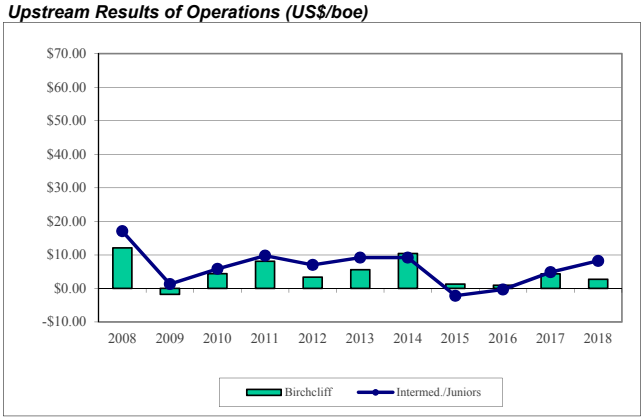
Production Costs (US$/boe)



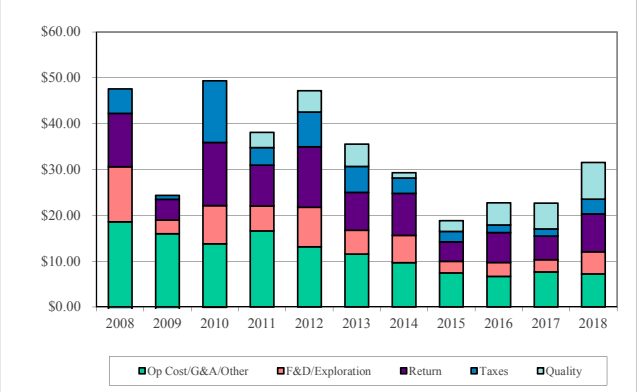
Upstream Operating Earnings (US$/boe)



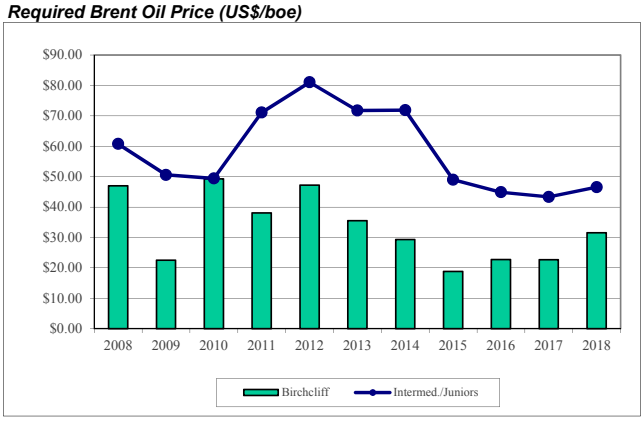
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Birchcliff Energy Ltd. (BIR - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	195	119	168	238	233	281	395	239	239	407	450
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(3)	-	-	-	-	4	1	-	(7)	24	37
Total Revenue and Other Income	192	119	168	238	233	284	396	239	233	431	487
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	46	41	48	63	70	74	85	78	89	140	156
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	6	10	10	34	28	24	25	20	18	24	25
Depreciation, Depletion and Amortization	85	75	74	73	96	106	123	115	113	143	161
Interest, net	10	9	13	-	23	24	21	20	26	25	25
Other	5	10	12	18	(4)	(2)	0	(3)	10	146	10
Earnings Before Income Tax	41	(25)	11	50	21	58	141	9	(23)	(47)	110
Current Income Taxes	(0)	-	-	-	-	-	3	2	-	2	(2)
Future Income Taxes	13	(4)	6	15	8	24	35	16	(5)	(13)	33
Total Income Taxes	13	(4)	6	15	8	24	38	18	(5)	(11)	31
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	28	(21)	6	35	13	35	104	(10)	(18)	(36)	79
Discontinued Operations/Extraordinary Items	(12)	15	-	-	-	33	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	16	(6)	6	35	13	67	104	(10)	(18)	(36)	79
Preferred Stock Dividends	-	-	-	-	2	4	4	3	3	3	3
Net Earnings to Common Shareholders	16	(6)	6	35	12	64	100	(13)	(21)	(39)	76

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	28	(21)	6	35	13	35	104	(10)	(18)	(36)	79
Charges and Credits Not Impacting Cash	97	71	80	87	103	129	161	133	108	132	192
Other	(2)	10	12	12	(19)	3	4	(18)	22	149	(29)
Cash Flow From Operations	124	59	97	135	98	167	269	106	111	245	242
Change in Working Capital / Other	1	(9)	1	8	(14)	(2)	12	11	(5)	(23)	9
Net Cash From Operating Activities	125	50	98	143	83	165	281	117	106	222	250
Total Capital Expenditures	(214)	(87)	(229)	(243)	(299)	(262)	(361)	(202)	(127)	(321)	(233)
Acquisitions, net	(10)	(3)	(2)	(6)	(9)	53	(48)	9	(448)	101	3
Other	17	(7)	4	36	-	30	4	(37)	6	8	(7)
Net Cash From Investing Activities	(207)	(96)	(226)	(213)	(308)	(180)	(405)	(230)	(569)	(213)	(237)
Net Change in Debt	(41)	(9)	128	(14)	45	(38)	64	117	(40)	12	14
Net Change in Common Stock	122	57	6	9	113	49	-	-	501	-	-
Net Change in Preferred Stock	-	-	-	-	50	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	(2)	(4)	(4)	(3)	(3)	(24)	(24)
Other	-	(2)	(1)	69	(7)	8	64	(0)	5	3	(3)
Net Cash From Financing Activities	82	47	133	64	200	14	124	114	463	(9)	(13)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(0)	0	5	(7)	(25)	0	(0)	0	(0)	0	0
Cash and Equivalents, Beginning of Year	0	0	0	5	0	0	0	0	0	0	0
Cash and Equivalents, End of Year	0	0	5	0	0	0	0	0	0	0	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Birchcliff Energy Ltd. (BIR - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	31	30	45	40	30	38	33	20	49	55	71
Net Property, Plant and Equipment	738	707	921	1,197	1,399	1,501	1,703	1,566	1,999	1,962	2,032
Other Assets	-	0	-	2	2	2	2	0	0	8	29
Total Assets	769	737	967	1,240	1,431	1,541	1,738	1,586	2,048	2,026	2,132
Total Current Liabilities	67	48	49	90	60	97	103	37	77	67	59
Long-term Debt	200	177	324	393	433	429	469	525	469	491	505
Deferred Income Taxes	3	2	7	28	35	55	87	91	75	64	92
Other Liabilities and Deferred Credits	20	22	26	65	69	71	78	72	101	96	106
Total Liabilities	290	249	406	576	596	653	736	726	722	718	763
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	450	477	535	574	678	674	709	614	1,106	1,139	1,141
Contributed Surplus (Paid-in Capital)	12	18	27	44	58	58	48	47	48	54	59
Preferred Stock	-	-	-	-	41	40	38	32	31	32	32
Retained Earnings	16	(6)	(1)	46	57	115	207	167	139	83	138
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	479	488	560	664	835	888	1,002	860	1,325	1,308	1,370
Total Liabilities and Shareholders' Equity	769	737	967	1,240	1,431	1,541	1,738	1,586	2,048	2,026	2,132
Return on Capital Employed (ROCE)	**3.5%**	**0.2%**	**1.6%**	**3.5%**	**2.2%**	**5.8%**	**7.9%**	**-2.4%**	**-0.1%**	**-1.1%**	**5.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$66.47	$37.60	$40.22	$40.51	$31.38	$33.38	$34.76	$18.16	$14.91	$19.94	$17.41	$17.63	$19.95
Production Costs	$16.39	$12.83	$11.41	$10.71	$9.37	$8.73	$7.51	$5.90	$5.55	$6.54	$6.22	$6.16	$6.29
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$30.23	$23.69	$17.77	$12.36	$12.90	$12.39	$10.86	$8.74	$7.02	$6.68	$6.41	$6.66	$7.52
G&A / Other	$2.20	$3.15	$2.36	$5.87	$3.77	$2.82	$2.16	$1.55	$1.13	$1.10	$0.99	$1.06	$1.28
Pre-tax Results of Operations	$17.65	-$2.07	$8.68	$11.57	$5.34	$9.45	$14.24	$1.97	$1.22	$5.62	$3.79	$3.75	$4.85
Income Taxes	$5.54	-$0.33	$4.28	$3.47	$1.95	$3.85	$3.81	$0.68	$0.24	$1.28	$1.06	$0.89	$1.29
Results of Operations	$12.11	-$1.75	$4.39	$8.11	$3.40	$5.60	$10.43	$1.29	$0.97	$4.34	$2.73	$2.87	$3.57

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Birchcliff Energy Ltd. (BIR - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	29.8	37.2	51.1	74.6	97.5	114.5	160.8	189.5	225.4	289.2	340.9	285.2	241.1
Liquids Production (b/d)	2,698	2,485	2,922	3,649	4,098	4,290	4,355	4,546	6,500	10,481	12,096	9,692	7,595
Total Production (boe/d)	7,664	8,686	11,446	16,090	20,354	23,373	31,147	36,125	44,059	58,689	68,914	57,221	47,787
% Gas Production	65%	71%	74%	77%	80%	82%	86%	87%	85%	82%	82%	83%	84%
% Oil Production	35%	29%	26%	23%	20%	18%	14%	13%	15%	18%	18%	17%	16%
Proven Reserves:													
Closing Gas Reserves (bcf)	155.9	319.7	492.0	719.2	887.1	1,069.7	1,395.6	1,765.7	2,521.6	3,125.2	3,296.2	2,981.0	2,420.9
Closing Oil Reserves (mmbbls)	16.1	16.5	18.5	19.9	20.6	20.2	24.0	28.9	66.3	66.8	72.2	68.4	51.6
Closing Total Proven Reserves (mmboe)	42.0	69.8	100.5	139.8	168.5	198.5	256.6	323.2	486.6	587.6	621.6	565.3	455.1
% Gas Reserves	62%	76%	82%	86%	88%	90%	91%	91%	86%	89%	88%	88%	89%
% Oil Reserves	38%	24%	18%	14%	12%	10%	9%	9%	14%	11%	12%	12%	11%
Proven Reserve Life Index	15.0	22.0	23.9	23.6	22.4	22.9	22.4	24.4	30.2	27.2	24.5	27.3	25.8
Proven Reserve Additions:													
Gas Additions (bcf)	90.4	167.0	141.9	248.3	193.0	228.1	376.4	432.3	894.7	724.2	221.8	1,840.7	2,649.4
Oil Additions (mmbbls)	3.5	2.1	1.9	2.7	2.6	1.8	5.5	4.9	40.4	4.7	10.4	55.5	65.9
Total Additions (mmboe)	18.6	29.9	25.6	44.1	34.7	39.8	68.2	76.9	189.5	125.4	47.4	362.3	507.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	18.4	18.9	25.0	36.6	26.8	41.3	38.6	56.0	64.8	120.1	29.8	214.8	309.4
Net Acquisitions	0.2	0.2	2.7	-1.0	-0.8	-1.8	24.6	-0.1	94.7	-19.0	-0.5	75.2	99.7
Revisions of Estimates	0.0	10.9	(2.1)	8.4	8.7	0.2	5.0	21.0	30.0	24.3	18.0	72.3	98.4
Components as % of Total Additions:													
Extensions, Discoveries and Additions	99.2%	63.1%	97.7%	83.0%	77.1%	103.9%	56.6%	72.8%	34.2%	95.8%	63.0%	59.3%	61.0%
Net Acquisitions	1.1%	0.6%	10.5%	-2.2%	-2.3%	-4.5%	36.1%	-0.2%	50.0%	-15.1%	-1.1%	20.8%	19.7%
Revisions of Estimates	-0.3%	36.3%	-8.2%	19.1%	25.2%	0.6%	7.3%	27.3%	15.8%	19.3%	38.1%	20.0%	19.4%
Additions as % of Production:													
Gas	830.7%	1229.9%	760.1%	911.2%	542.0%	545.7%	641.5%	625.1%	1087.7%	686.0%	178.2%	589.5%	602.0%
Oil	359.6%	227.1%	181.8%	201.8%	172.8%	114.4%	346.1%	292.9%	1703.6%	123.1%	236.0%	523.4%	475.5%
Total	664.9%	943.0%	612.4%	750.3%	467.6%	466.6%	600.2%	583.3%	1178.6%	585.4%	188.4%	578.3%	581.9%
Additions as % of Reserves:													
Gas	58.0%	52.2%	28.8%	34.5%	21.8%	21.3%	27.0%	24.5%	35.5%	23.2%	6.7%	61.7%	109.4%
Oil	22.0%	12.5%	10.5%	13.5%	12.5%	8.9%	22.9%	16.8%	60.9%	7.1%	14.4%	81.2%	127.6%
Total	44.2%	42.8%	25.5%	31.5%	20.6%	20.1%	26.6%	23.8%	39.0%	21.3%	7.6%	64.1%	111.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$28.4	$5.3	$30.6	$30.5	$16.1	$36.4	$22.5	$10.0	$4.3	$2.4	$2.7	$9.5	$42.0
Exploration & Development	$185.4	$81.3	$198.0	$212.6	$283.1	$223.9	$336.6	$191.3	$123.0	$319.0	$230.1	$672.1	$1,200.0
Net Acquisitions	$9.8	$2.9	-$15.0	-$2.9	$0.0	-$52.8	$47.9	-$8.6	$448.4	-$108.5	-$2.8	$337.1	$376.4
Total Expenditures	$223.6	$89.6	$213.7	$240.2	$299.1	$207.5	$407.0	$192.7	$575.7	$212.9	$230.0	$1,018.6	$1,618.4
Expenditures as % of Total:													
Land & Seismic	12.7%	5.9%	14.3%	12.7%	5.4%	17.5%	5.5%	5.2%	0.8%	1.1%	1.2%	0.9%	2.6%
Exploration & Development	82.9%	90.8%	92.7%	88.5%	94.6%	107.9%	82.7%	99.2%	21.4%	149.8%	100.0%	66.0%	74.1%
Net Acquisitions	4.4%	3.3%	-7.0%	-1.2%	0.0%	-25.4%	11.8%	-4.4%	77.9%	-51.0%	-1.2%	33.1%	23.3%
Cashflow (US$million)	$124.0	$59.4	$97.4	$132.4	$97.5	$167.5	$269.0	$105.8	$111.4	$245.0	$241.5	$597.9	$972.7
Cashflow (US$/boe)	$44.32	$18.75	$23.32	$22.54	$13.13	$19.63	$23.66	$8.03	$6.93	$11.44	$9.60	$9.54	$11.15
Recycle Ratio	3.7x	6.3x	2.8x	4.1x	1.5x	3.8x	4.0x	3.2x	2.3x	6.7x	2.0x	3.4x	3.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$11.62	$2.92	$9.99	$5.40	$8.41	$6.26	$8.24	$2.61	$1.34	$2.23	$4.86	$2.37	$3.05
Net Acquisition Costs	$47.62	$16.74	-$5.57	$3.06	$0.04	$29.58	$1.94	$70.82	$4.73	$5.71	$5.60	$4.48	$3.77
All Sources (incl. revisions)	$12.02	$3.00	$8.35	$5.45	$8.61	$5.21	$5.97	$2.51	$3.04	$1.70	$4.85	$2.81	$3.19
Exploration & Development (excl. revisions)	$11.59	$4.59	$9.15	$6.65	$11.16	$6.30	$9.30	$3.59	$1.97	$2.68	$7.80	$3.17	$4.01
Net Acquisition Costs	$47.62	$16.74	-$5.57	$3.06	$0.04	$29.58	$1.94	$70.82	$4.73	$5.71	$5.60	$4.48	$3.77
All Sources (excl. revisions)	$11.99	$4.71	$7.72	$6.74	$11.51	$5.25	$6.44	$3.45	$3.61	$2.10	$7.84	$3.51	$3.96

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Birchcliff Energy Ltd. (BIR - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.39	12.83	11.41	10.71	9.37	8.73	7.51	5.90	5.55	6.54	6.22	6.16	6.29
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.20	3.15	2.36	5.87	3.77	2.82	2.16	1.55	1.13	1.10	0.99	1.06	1.28
F&D Costs (1-Year)	12.02	3.00	8.35	5.45	8.61	5.21	5.97	2.51	3.04	2.68	4.85	3.52	3.81
Return on Capital	11.65	4.51	13.79	8.92	13.21	8.25	9.17	4.27	6.53	5.17	8.25	6.82	6.90
Income Taxes	5.33	0.85	13.45	3.81	7.57	5.67	3.35	2.26	1.64	1.53	3.22	2.12	2.49
Breakeven Oil Price	**47.59**	**24.35**	**49.35**	**34.77**	**42.54**	**30.68**	**28.15**	**16.48**	**17.89**	**17.02**	**23.54**	**19.68**	**20.76**
Quality Differential	(0.61)	(1.84)	(0.08)	3.33	4.66	4.86	1.16	2.37	4.84	5.66	8.00	6.17	4.41
Required Brent Price	**46.97**	**22.51**	**49.27**	**38.09**	**47.20**	**35.54**	**29.32**	**18.85**	**22.73**	**22.68**	**31.54**	**25.85**	**25.17**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.41	22.32	22.99	25.40	26.72	23.60	18.29	14.25	12.32	13.73	15.29	13.94	14.52
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.14	5.49	4.75	13.93	10.75	7.62	5.27	3.73	2.50	2.31	2.44	2.41	2.95
F&D Costs (1-Year)	19.22	6.73	22.27	18.32	34.78	19.83	16.13	6.74	6.16	4.99	11.07	7.40	9.02
Return on Capital	19.14	9.53	33.04	24.97	42.89	25.55	22.76	10.72	13.03	8.77	16.79	13.34	15.09
Income Taxes	8.76	1.80	32.23	10.67	24.58	17.56	8.32	5.68	3.28	2.59	6.56	4.14	5.44
Breakeven Oil Price	**73.67**	**45.86**	**115.27**	**93.30**	**139.71**	**94.16**	**70.77**	**41.11**	**37.28**	**32.39**	**52.14**	**41.22**	**47.01**
Quality Differential	(0.87)	(3.19)	(0.17)	7.89	13.29	13.13	2.83	5.71	10.73	11.88	16.79	13.14	9.59
Required Brent Price	**72.80**	**42.67**	**115.10**	**101.19**	**153.00**	**107.29**	**73.60**	**46.82**	**48.01**	**44.27**	**68.93**	**54.36**	**56.60**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.41	22.32	22.99	25.40	26.72	23.60	18.29	14.25	12.32	13.73	15.29	13.94	14.52
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.14	5.49	4.75	13.93	10.75	7.62	5.27	3.73	2.50	2.31	2.44	2.41	2.95
F&D Costs (1-Year)	80.58	21.04	33.74	52.78	54.02	51.23	29.60	15.67	16.73	13.10	10.50	13.96	17.12
Return on Capital	80.20	28.47	47.37	70.22	66.73	65.82	40.23	24.08	38.08	23.00	15.00	25.39	28.33
Income Taxes	36.72	5.36	46.21	30.01	38.24	45.23	14.72	12.77	9.59	6.80	5.86	7.87	10.21
Breakeven Oil Price	**224.05**	**82.68**	**155.05**	**192.34**	**196.46**	**193.49**	**108.11**	**70.51**	**79.21**	**58.95**	**49.08**	**63.56**	**73.13**
Quality Differential	(0.87)	(3.19)	(0.17)	7.89	13.29	13.13	2.83	5.71	10.73	11.88	16.79	13.14	9.59
Required Brent Price	**223.18**	**79.49**	**154.88**	**200.23**	**209.74**	**206.62**	**110.94**	**76.22**	**89.94**	**70.83**	**65.87**	**76.70**	**82.72**

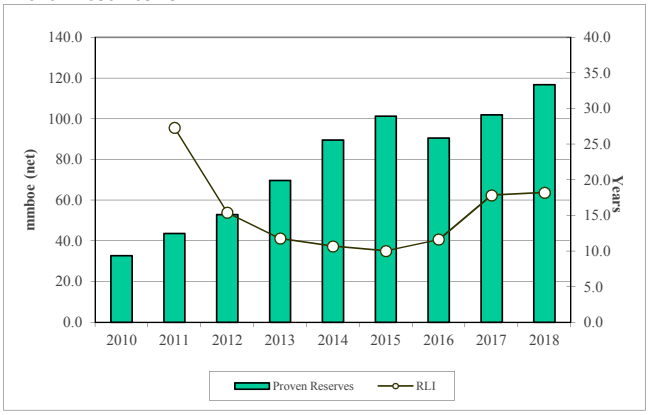
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

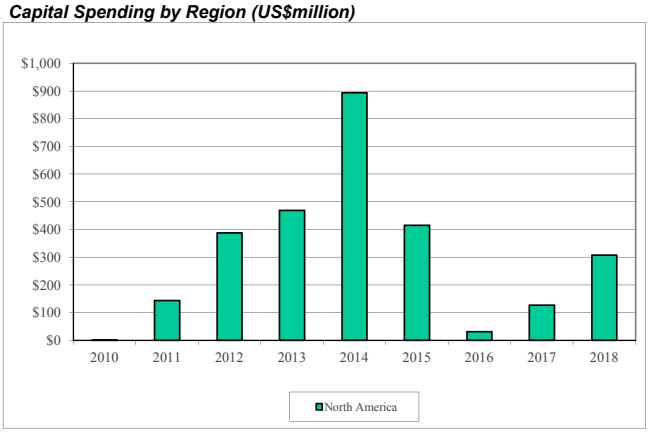
Bonanza Creek Energy (BCEI - NYSE) US$, net

- Bonanza Creek reported results of operations of $12.12/boe in 2018 compared to $1.32/boe in 2017.
- One-year F&D costs were recorded at $9.51/boe compared to $7.46/boe last year. On a realized oil:gas price ratio basis, F&D costs were $10.97/boe, while costs for PD reserves were $29.48/boe.
- Bonanza Creek's 2018 operations suggest a required Brent breakeven oil price of $72.15/boe on a realized ratio basis on total proved reserves, while its PD costs imply a Brent breakeven of $124.23/boe.
- The company reported return on capital of 21.3% in 2018 versus 0.4% in 2017.

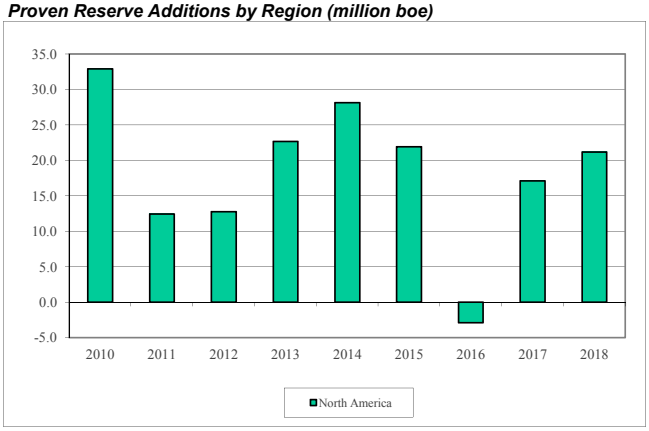
Proven Reserves vs RLI



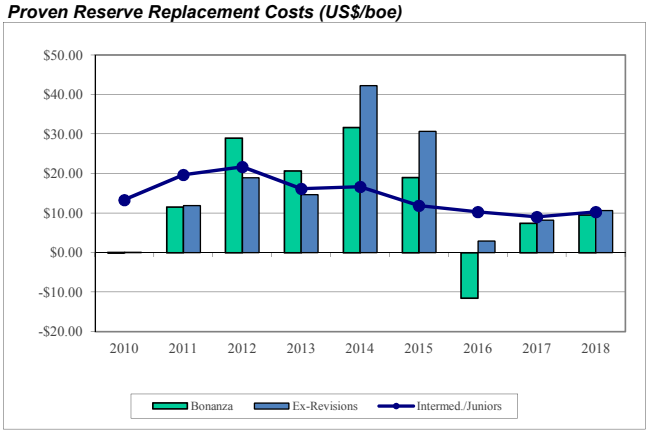
Capital Spending by Region (US$million)



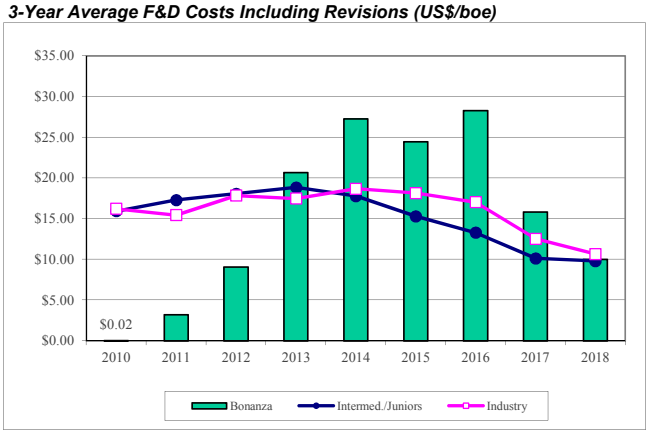
Proven Reserve Additions by Region (million boe)



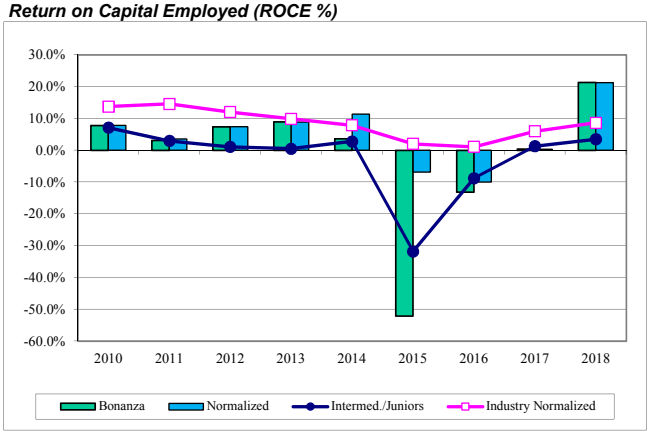
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

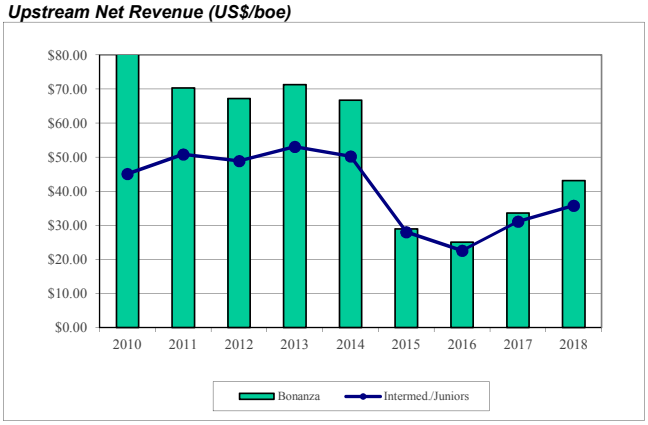
See pages F1 to F4 for analyst coverage.

Bonanza Creek Energy (BCEI - NYSE)

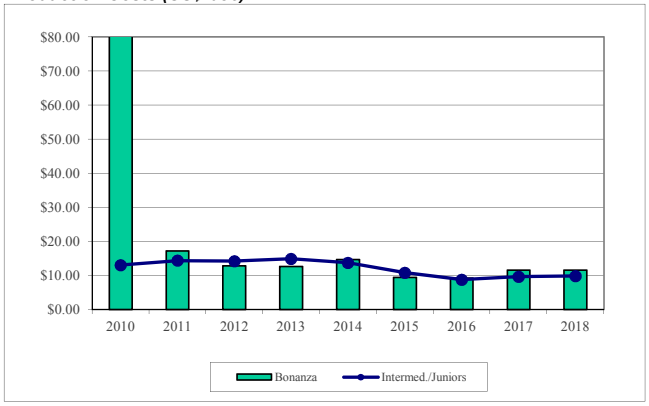
US$/boe, net

North America

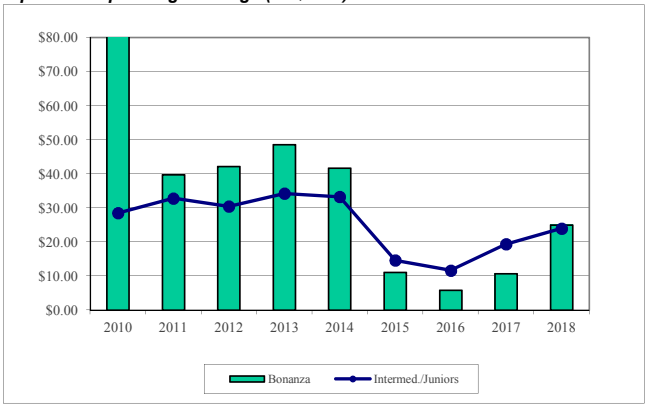
Upstream Net Revenue (US$/boe)



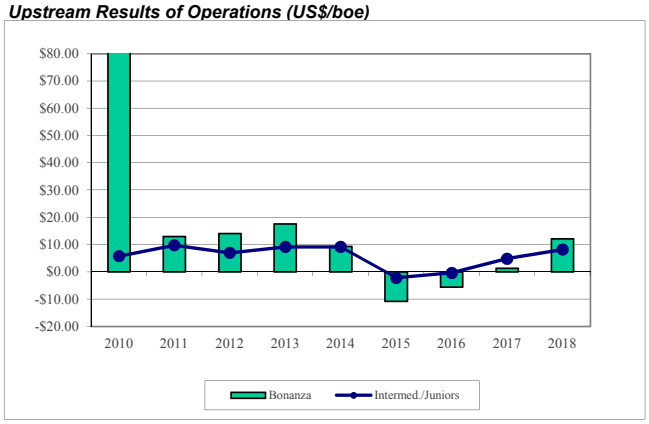
Production Costs (US$/boe)



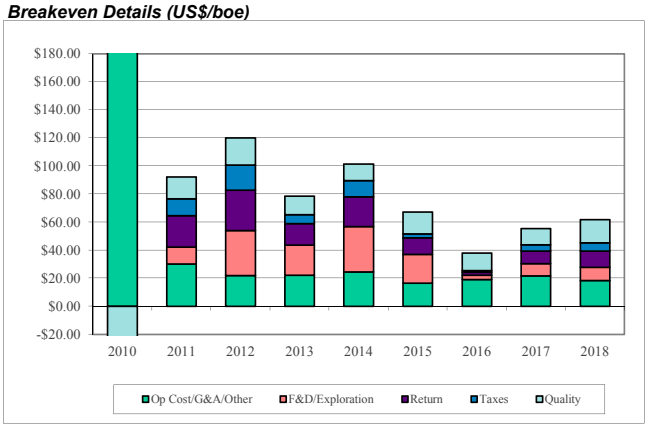
Upstream Operating Earnings (US$/boe)



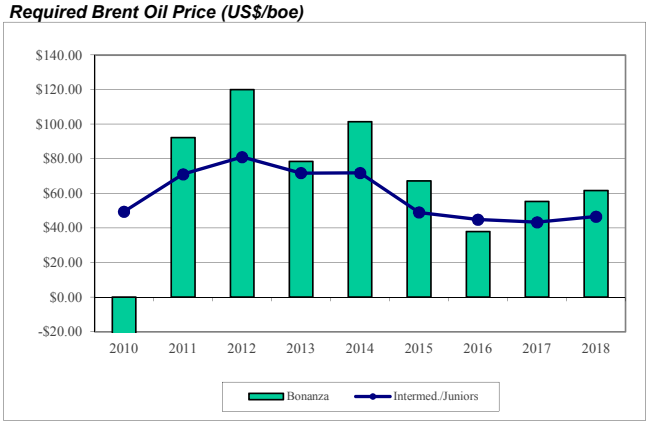
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Bonanza Creek Energy (BCEI - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	50	112	231	422	559	293	195	192	277
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	-	50	112	231	422	559	293	195	192	277
Crude Oil and Product Purchases											
Production and Transportation Expenses	-	-	17	28	44	75	123	95	72	66	74
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	0	1	11	4	5	16	1	7	0
General and Administrative	-	-	9	18	31	56	82	70	77	58	42
Depreciation, Depletion and Amortization	-	-	15	32	66	140	229	245	111	49	42
Asset Retirement Obligations	-	-	-	-	-	-	-	-	-	-	-
Interest, net	-	-	18	4	4	22	46	57	62	6	3
Other	-	-	(23)	7	(0)	13	46	720	71	8	(53)
Earnings Before Income Tax	-	-	15	24	75	113	28	(910)	(199)	(3)	168
Current Income Taxes	-	-	-	-	1	0	0	1	-	(0)	-
Future Income Taxes	-	-	(0)	11	29	43	11	(166)	-	-	-
Total Income Taxes			(0)	11	30	43	11	(165)	-	(0)	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	15	13	45	70	17	(746)	(199)	(2)	168
Discontinued Operations/Extraordinary Items			-	-	2	(0)	3			-	-
Cumulative Change in Accounting Principle			-	-	-	-	-	-	-	-	-
Net Earnings	-	-	15	13	47	69	20	(746)	(199)	(2)	168
Preferred Stock Dividends			-	-	-	-				-	-
Net Earnings to Common Shareholders	-	-	15	13	47	69	20	(746)	(199)	(2)	168

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	15	13	47	69	20	(746)	(199)	(2)	168
Charges and Credits Not Impacting Cash	-	-	15	47	110	185	409	820	121	52	47
Other	-	-	(11)	5	(0)	27	(103)	2	71	(14)	(72)
Cash Flow From Operations	-	-	18	65	156	281	326	76	(6)	36	143
Change in Working Capital / Other	-	-	3	(7)	1	26	1	19	21	(28)	(27)
Net Cash From Operating Activities	-	-	21	58	157	307	328	95	15	8	117
Total Capital Expenditures	-	-	(36)	(158)	(300)	(428)	(648)	(429)	(53)	(83)	(265)
Acquisitions, net	-	-	(1)	(2)	(5)	(14)	(180)	(16)	(0)	(6)	100
Other	-	-	4	1	0	(23)	2	124	(15)	0	-
Net Cash From Investing Activities	-	-	(33)	(159)	(305)	(465)	(825)	(322)	(67)	(89)	(164)
Net Change in Debt	-	-	9	(51)	151	339	326	46	113	(192)	48
Net Change in Common Stock	-	-	-	154	(0)	(4)	(6)	207	-	208	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	(1)	(0)	(1)	(7)	(1)	(3)	0
Net Cash From Financing Activities	-	-	9	103	150	334	319	245	112	13	48
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	(3)	2	2	176	(178)	19	59	(68)	0
Cash and Equivalents, Beginning of Year	-	-	3	(0)	2	4	181	3	21	81	12.782
Cash and Equivalents, End of Year	-	-	(0)	2	4	181	3	21	81	13	13.002

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonanza Creek Energy (BCEI - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	14	32	55	264	208	120	112	53	135
Net Property, Plant and Equipment	-	-	497	628	943	1,268	1,756	1,137	1,019	774	918
Other Assets	-	-	5	4	4	14	41	16	3	3	9
Total Assets	-	-	516	664	1,002	1,546	2,006	1,273	1,134	830	1,062
Total Current Liabilities	-	-	23	39	103	175	198	136	1,070	89	99
Long-term Debt	-	-	55	7	158	509	841	885	-	-	50
Deferred Income Taxes	-	-	68	80	110	153	166	-	-	-	-
Other Liabilities and Deferred Credits	-	-	13	12	53	53	61	43	45	53	48
Total Liabilities	-	-	160	136	424	890	1,266	1,064	1,115	142	198
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	0	0	0	0	0	0	0		4
Contributed Surplus (Paid-in Capital)	-	-	357	515	519	528	592	806	815		696
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	(0)	13	59	128	149	(597)	(796)	(5)	163
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	693	-
Total Shareholders' Equity	-	-	356	528	579	656	740	209	19	688	864
Total Liabilities and Shareholders' Equity	-	-	516	664	1,002	1,546	2,006	1,273	1,134	830	1,062
Return on Capital Employed (ROCE)	-	-	**7.8%**	**3.1%**	**7.4%**	**8.9%**	**3.7%**	**-52.1%**	**-13.1%**	**0.4%**	**21.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	$2,462.73	$70.30	$67.18	$71.26	$66.74	$28.98	$25.08	$33.60	$43.17	$33.35	$39.48
Production Costs	-	-	$761.88	$17.24	$12.80	$12.67	$14.68	$9.41	$9.22	$11.56	$11.60	$10.66	$11.21
Exploration	-	-	$14.62	$0.55	$3.11	$0.71	$0.64	$1.57	$0.12	$1.30	$0.05	$0.44	$0.78
DD&A	-	-	$804.50	$19.70	$19.32	$23.68	$27.33	$24.25	$14.28	$8.63	$6.54	$10.17	$17.62
G&A/Other	-	-	$446.85	$12.83	$9.13	$9.38	$9.75	$6.96	$9.90	$10.10	$6.62	$8.90	$8.58
Pre-tax Earnings	-	-	$434.88	$19.99	$22.82	$24.83	$14.35	-$13.21	-$8.44	$1.99	$18.36	$3.18	$1.30
Income Taxes	-	-	$142.15	$7.00	$8.71	$7.25	$5.02	-$2.39	-$2.87	$0.68	$6.24	$1.08	$1.03
Results of Operations	-	-	$292.73	$12.99	$14.11	$17.58	$9.33	-$10.82	-$5.57	$1.32	$12.12	$2.10	$0.28

Source: BMO Capital Markets, Company Reports

Bonanza Creek Energy (BCEI - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	0.1	7.6	15.0	27.3	38.7	38.7	32.6	24.7	23.5	26.9	31.6
Liquids Production (b/d)	-	-	52	3,115	6,929	11,663	16,488	21,227	15,893	11,553	13,647	13,698	15,762
Total Production (boe/d)	-	-	71	4,383	9,429	16,218	22,932	27,670	21,330	15,668	17,558	18,185	21,032
% Gas Production	-	-	27%	29%	27%	28%	28%	23%	25%	26%	22%	25%	25%
% Oil Production	-	-	73%	71%	73%	72%	72%	77%	75%	74%	78%	75%	75%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	62.9	93.0	118.5	139.6	188.6	144.2	138.0	157.7	165.0	153.6	158.7
Closing Oil Reserves (mmbbls)	-	-	22.4	28.2	33.3	46.5	58.1	77.3	67.6	75.7	89.3	77.6	73.6
Closing Total Proven Reserves (mmboe)	-	-	32.9	43.7	53.0	69.8	89.5	101.3	90.7	102.0	116.8	103.2	100.1
% Gas Reserves	-	-	32%	35%	37%	33%	35%	24%	25%	26%	24%	25%	26%
% Oil Reserves	-	-	68%	65%	63%	67%	65%	76%	75%	74%	76%	75%	74%
Proven Reserve Life Index	-	-	1263.8	27.3	15.4	11.8	10.7	10.0	11.6	17.8	18.2	15.9	13.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	62.9	32.9	31.0	31.0	63.1	-30.2	5.7	28.6	15.9	50.3	83.1
Oil Additions (mmbbls)	-	-	22.4	7.0	7.6	17.5	17.6	26.9	-3.9	12.3	18.5	27.0	71.6
Total Additions (mmboe)	-	-	32.9	12.5	12.8	22.6	28.2	21.9	-2.9	17.1	21.2	35.4	85.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0	12.1	20.5	30.1	20.2	12.0	10.8	15.5	28.8	55.2	87.4
Net Acquisitions	-	-	32.9	0.0	-0.7	1.9	0.9	1.5	-0.2	0.0	-11.2	(11.3)	(9.0)
Revisions of Estimates	-	-	-	0.3	(7.0)	(9.4)	7.1	8.4	(13.5)	1.5	3.5	(8.5)	7.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	0.0%	97.3%	160.4%	133.0%	71.8%	54.8%	-370.6%	91.0%	136.2%	156.1%	102.3%
Net Acquisitions	-	-	100.0%	0.0%	-5.2%	8.3%	3.0%	7.0%	6.6%	0.0%	-52.7%	-32.1%	-10.5%
Revisions of Estimates	-	-	0.0%	2.7%	-55.2%	-41.3%	25.2%	38.2%	464.0%	9.0%	16.5%	-24.0%	8.2%
Additions as % of Production:													
Gas	-	-	149823.8%	1184.2%	567.0%	311.2%	446.7%	-214.1%	48.1%	317.8%	185.7%	170.5%	144.0%
Oil	-	-	117884.2%	613.4%	299.7%	410.5%	293.3%	347.8%	-66.7%	292.1%	371.9%	179.8%	248.8%
Total	-	-	126483.3%	778.5%	370.6%	382.6%	336.4%	217.0%	-37.4%	298.8%	330.4%	177.5%	222.5%
Additions as % of Reserves:													
Gas	-	-	100.1%	35.4%	26.2%	22.2%	33.4%	-20.9%	4.1%	18.2%	9.6%	32.7%	52.4%
Oil	-	-	100.1%	24.7%	22.8%	37.6%	30.4%	34.9%	-5.7%	16.3%	20.7%	34.8%	97.2%
Total	-	-	100.1%	28.5%	24.1%	32.5%	31.4%	21.6%	-3.2%	16.8%	18.1%	34.3%	85.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	$0.0	$58.0	$4.8	$2.6	$5.3	$6.3	$0.1	$4.4	$0.3	$4.8	$16.4
Development	-	-	$0.8	$84.2	$325.0	$452.5	$659.6	$393.2	$31.2	$117.2	$304.2	$452.6	$1,505.5
Net Acquisitions	-	-	$0.0	$1.9	$58.8	$13.8	$228.6	$16.3	$0.1	$5.8	$2.9	$8.8	$253.7
Total Expenditures	-	-	$0.8	$144.1	$388.6	$468.8	$893.6	$415.7	$31.4	$127.5	$307.4	$466.3	$1,775.6
Expenditures as % of Total:													
Exploration	-	-	0.0%	40.3%	1.2%	0.6%	0.6%	1.5%	0.2%	3.5%	0.1%	1.0%	0.9%
Development	-	-	100.0%	58.4%	83.6%	96.5%	73.8%	94.6%	99.5%	91.9%	99.0%	97.1%	84.8%
Net Acquisitions	-	-	0.0%	1.3%	15.1%	2.9%	25.6%	3.9%	0.3%	4.6%	0.9%	1.9%	14.3%
Cashflow (US$million)	-	-	$28.9	$53.2	$125.8	$248.5	$312.2	$151.5	$68.8	$64.3	$119.8	$253.0	$716.7
Cashflow (US$/boe)	-	-	$1,111.85	$33.24	$36.54	$41.97	$37.30	$15.00	$8.83	$11.25	$18.70	$12.70	$18.67
Recycle Ratio	-	-	44733.9x	2.9x	1.3x	2.0x	1.2x	0.8x	-0.8x	1.5x	2.0x	1.0x	0.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	nm	$11.42	$24.57	$21.92	$24.36	$19.61	-$11.50	$7.12	$9.42	$9.80	$16.13
Net Acquisition Costs	-	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	-	-	$0.02	$11.57	$28.96	$20.70	$31.67	$18.97	-$11.53	$7.46	$9.51	$13.19	$20.79
Exploration & Development (excl. revisions)	-	-	nm	$11.74	$16.12	$15.11	$32.89	$33.27	$2.90	$7.83	$10.56	$8.29	$17.41
Net Acquisition Costs	-	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	-	-	$0.02	$11.89	$18.99	$14.65	$42.30	$30.69	$2.91	$8.20	$10.66	$10.64	$22.63

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonanza Creek Energy (BCEI - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	17.24	12.80	12.67	14.68	9.41	9.22	11.56	11.60	10.66	11.21
Exploration Expense	-	-	-	0.55	3.11	0.71	0.64	1.57	0.12	1.30	0.05	0.44	0.78
G&A/Other	-	-	-	12.83	9.13	9.38	9.75	6.96	9.90	10.10	6.62	8.90	8.58
F&D Costs (1-Year)	-	-	-	11.57	28.96	20.70	31.67	18.97	2.91	7.46	9.51	6.62	14.10
Return on Capital	-	-	-	22.39	28.78	15.46	21.33	11.93	2.14	8.82	11.49	6.84	12.36
Income Taxes	-	-	-	12.07	17.78	6.38	11.49	2.64	1.10	4.54	5.92	3.52	5.56
Breakeven Oil Price	**-**	**-**	**-**	**76.65**	**100.55**	**65.30**	**89.56**	**51.48**	**25.40**	**43.79**	**45.19**	**36.99**	**52.59**
Quality Differential	-	-	-	15.54	19.40	13.22	11.90	15.78	12.44	11.57	16.52	13.51	13.64
Required Brent Price	**-**	**-**	**-**	**92.19**	**119.95**	**78.51**	**101.46**	**67.26**	**37.84**	**55.36**	**61.70**	**50.49**	**66.23**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	21.42	16.01	15.74	17.75	11.17	10.93	13.88	13.78	12.69	13.38
Exploration Expense	-	-	-	0.69	3.89	0.88	0.77	1.86	0.14	1.56	0.05	0.52	0.93
G&A/Other	-	-	-	15.94	11.41	11.65	11.78	8.26	11.74	12.12	7.87	10.60	10.24
F&D Costs (1-Year)	-	-	-	16.46	40.87	24.61	41.12	16.42	3.39	9.07	10.97	7.81	16.19
Return on Capital	-	-	-	29.99	36.33	17.99	26.67	10.29	2.50	10.75	13.09	8.08	13.99
Income Taxes	-	-	-	16.16	22.44	7.42	14.36	2.28	1.29	5.54	6.74	4.16	6.29
Breakeven Oil Price	**-**	**-**	**-**	**100.67**	**130.95**	**78.30**	**112.45**	**50.28**	**30.00**	**52.91**	**52.52**	**43.87**	**61.02**
Quality Differential	-	-	-	19.32	24.26	16.43	14.39	18.73	14.75	13.88	19.63	16.09	16.28
Required Brent Price	**-**	**-**	**-**	**119.99**	**155.21**	**94.73**	**126.85**	**69.01**	**44.75**	**66.79**	**72.15**	**59.95**	**77.29**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	21.42	16.01	15.74	17.75	11.17	10.93	13.88	13.78	12.69	13.38
Exploration Expense	-	-	-	0.69	3.89	0.88	0.77	1.86	0.14	1.56	0.05	0.52	0.93
G&A/Other	-	-	-	15.94	11.41	11.65	11.78	8.26	11.74	12.12	7.87	10.60	10.24
F&D Costs (1-Year)	-	-	-	25.93	51.54	39.45	51.07	25.51	7.33	17.23	29.48	21.09	26.12
Return on Capital	-	-	-	47.67	45.76	27.90	32.53	16.00	5.40	20.43	35.25	21.79	22.66
Income Taxes	-	-	-	25.69	28.27	11.51	17.52	3.54	2.78	10.53	18.16	11.22	10.19
Breakeven Oil Price	**-**	**-**	**-**	**137.35**	**156.88**	**107.14**	**131.43**	**66.33**	**38.32**	**75.75**	**104.60**	**77.91**	**83.51**
Quality Differential	-	-	-	19.32	24.26	16.43	14.39	18.73	14.75	13.88	19.63	16.09	16.28
Required Brent Price	**-**	**-**	**-**	**156.67**	**181.14**	**123.56**	**145.83**	**85.06**	**53.07**	**89.62**	**124.23**	**93.99**	**99.79**

Source: BMO Capital Markets, Company Reports

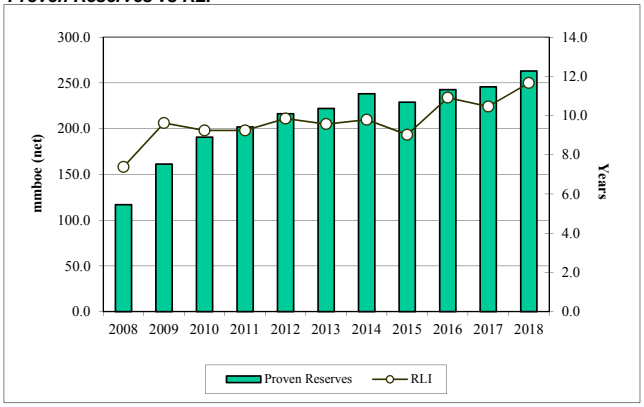
See pages F1 to F4 for analyst coverage.

Bonavista Energy Corporation (BNP - TSX) US$, net

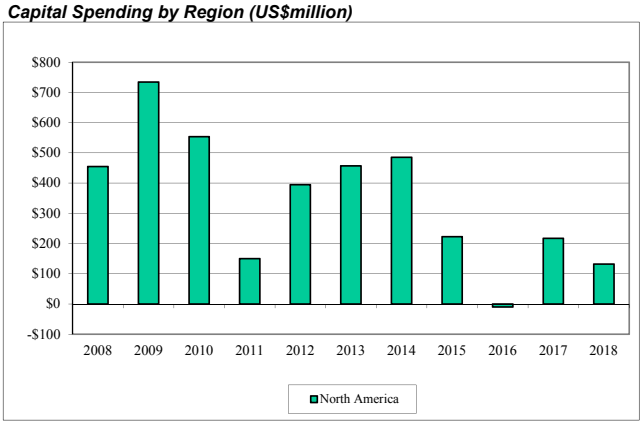
- Bonavista reported results of operations of $1.64/boe versus $1.78/boe in 2017.
- The company's one-year F&D costs came in at $3.34/boe. On a realized oil:gas price ratio basis, F&D costs were $6.04/boe while the costs for PD reserves were $14.13/boe in 2018.
- Bonavista's 2018 results imply a required Brent breakeven oil price of $55.97/boe on total proved reserves, while its PD costs suggest a Brent breakeven oil price of $72.73/boe.
- The company reported ROCE of 1.7% in 2018 relative to last year's normalized return of 4.6%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

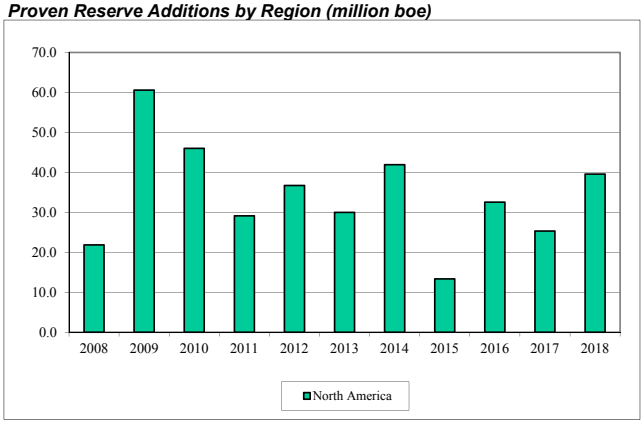
Proven Reserves vs RLI



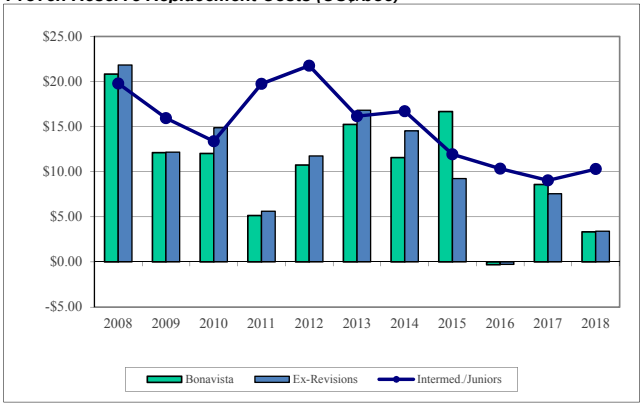
Capital Spending by Region (US$million)



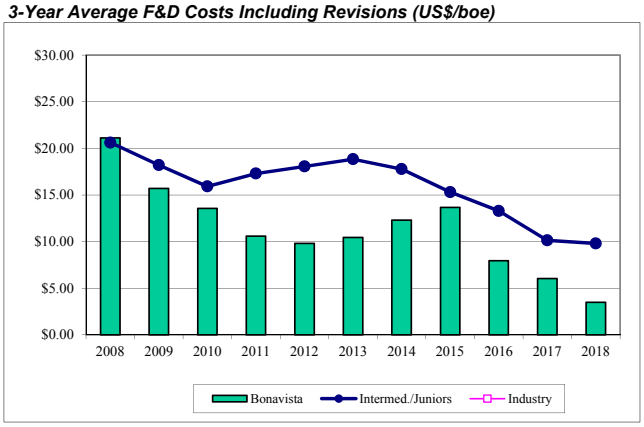
Proven Reserve Additions by Region (million boe)



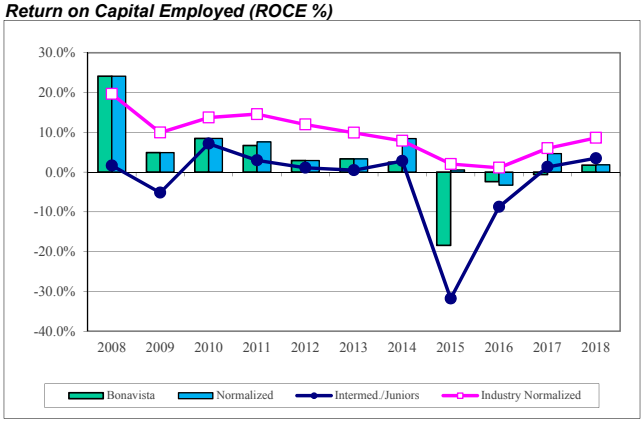
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

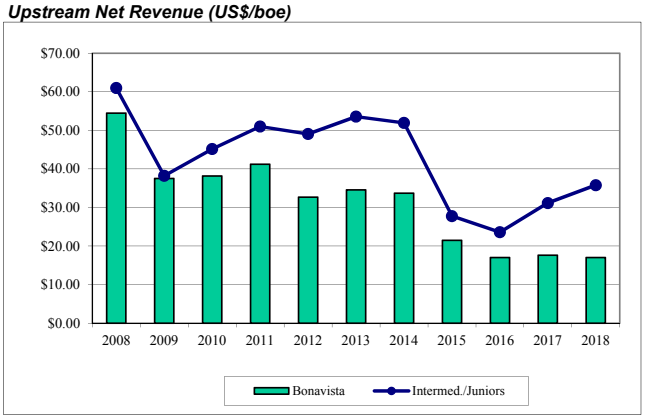
See pages F1 to F4 for analyst coverage.

Bonavista Energy Corporation (BNP - TSX)

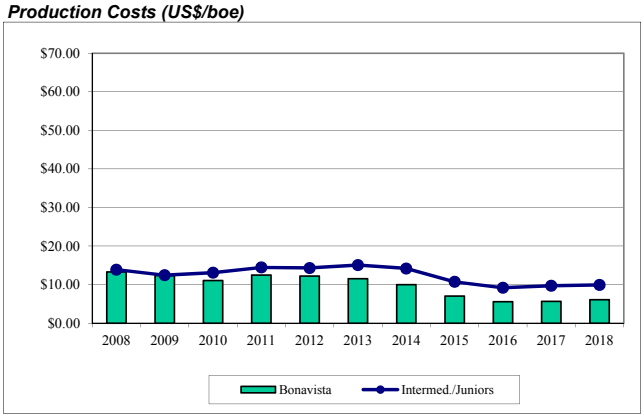
US$/boe, net

North America

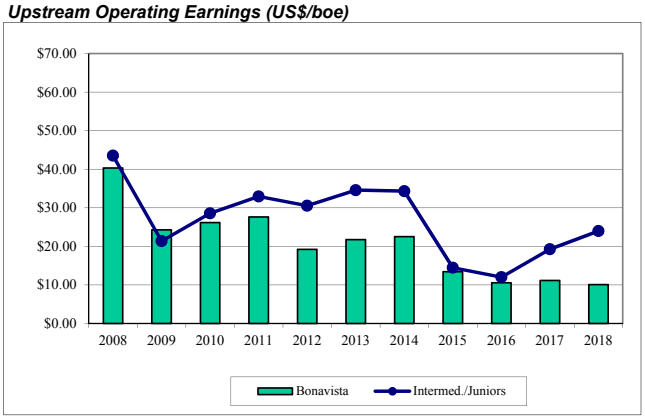
Upstream Net Revenue (US$/boe)



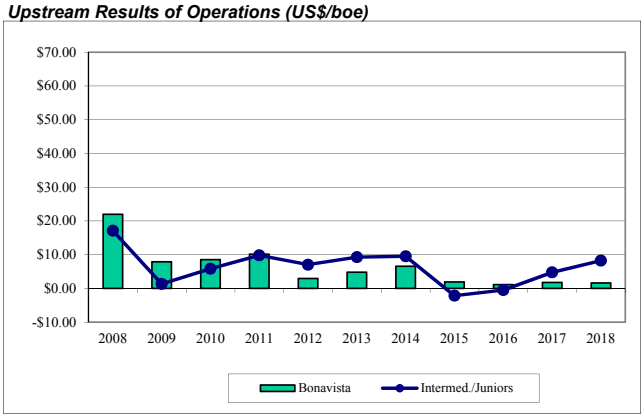
Production Costs (US$/boe)



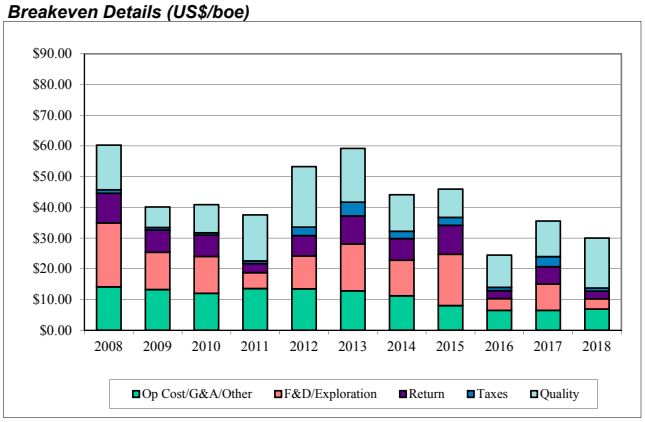
Upstream Operating Earnings (US$/boe)



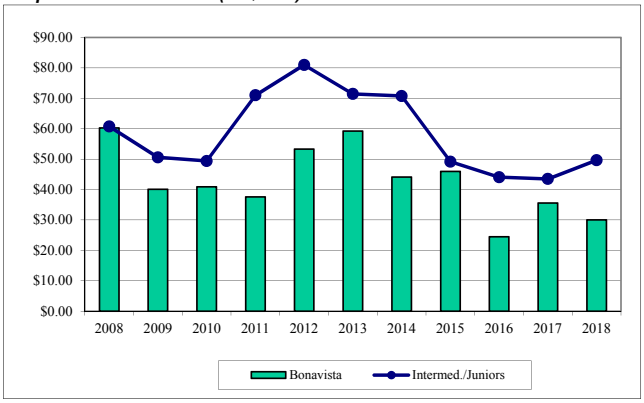
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonavista Energy Corporation (BNP - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	938	566	772	893	709	816	879	427	309	394	371
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	38	(12)	19	5	17	(47)	112	59	(53)	103	46
Total Revenue and Other Income	976	554	791	898	725	769	991	487	256	497	417
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	210	207	228	273	268	268	243	178	123	133	137
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	14	16	20	24	27	30	29	25	21	19	19
Depreciation, Depletion and Amortization	251	260	344	317	331	339	336	279	199	196	176
Interest, net	31	12	27	-	42	92	108	130	33	16	51
Other	10	11	(3)	26	(33)	(31)	240	622	(18)	167	13
Earnings Before Income Tax	460	48	174	258	91	71	35	(748)	(102)	(34)	21
Income Taxes:											
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	47	(46)	(21)	58	26	23	31	(160)	(29)	(13)	12
Total Income Taxes	47	(46)	(21)	58	26	23	31	(160)	(29)	(13)	12
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	413	94	196	200	64	48	4	(589)	(73)	(22)	9
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	413	94	196	200	64	48	4	(589)	(73)	(22)	9
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	413	94	196	200	64	48	4	(589)	(73)	(22)	9

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	413	94	196	200	64	48	4	(589)	(73)	(22)	9
Charges and Credits Not Impacting Cash	298	214	323	375	358	363	367	119	169	184	187
Other	(118)	87	(7)	88	(43)	94	119	810	137	100	31
Cash Flow From Operations	593	394	512	663	379	505	490	341	234	262	227
Change in Working Capital / Other	47	(21)	(12)	(90)	29	(32)	48	(23)	(37)	(11)	(3)
Net Cash From Operating Activities	640	373	499	574	408	473	538	318	197	251	225
Acquisitions, net	(167)	(649)	(213)	(195)	11	(20)	93	24	127	6	(5)
Other	33	91	22	(4)	9	5	3	(40)	14	(1)	(14)
Net Cash From Investing Activities	(422)	(738)	(531)	(658)	(382)	(446)	(483)	(262)	25	(218)	(145)
Financing Activities:											
Net Change in Debt	(117)	209	91	126	(182)	110	(69)	52	(195)	(61)	(46)
Net Issuance of Shares	210	356	183	194	336	(0)	174	-	83	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(311)	(200)	(244)	(207)	(138)	(99)	(125)	(70)	(10)	(8)	(8)
Other	(0)	(0)	1	(29)	(41)	(38)	(36)	(38)	(35)	(30)	(25)
Net Cash From Financing Activities	(218)	364	31	84	(25)	(27)	(55)	(56)	(157)	(99)	(80)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	(0)	(0)	-	(0)	65	(66)	-
Cash and Equivalents, Beginning of Year	-	-	-	-	-	(0)	(0)	(0)	(0)	65	(1)
Cash and Equivalents, End of Year	-	-	-	-	(0)	(0)	(0)	(0)	65	(1)	(1)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonavista Energy Corporation (BNP - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	172	127	149	159	137	144	247	126	135	118	98
Net Property, Plant and Equipment	2,188	2,560	3,057	3,560	3,694	3,735	3,562	2,400	2,148	2,050	1,461
Other Assets	39	36	40	251	234	235	202	234	113	114	697
Total Assets	2,399	2,724	3,246	3,970	4,065	4,114	4,012	2,760	2,397	2,282	2,257
Liabilities and Stockholders' Equity											
Total Current Liabilities	183	204	217	210	212	260	285	153	264	140	92
Long-term Debt	597	733	924	1,093	890	1,016	896	964	586	617	619
Deferred Income Taxes	167	127	114	192	213	230	244	51	18	6	18
Other Liabilities and Deferred Credits	120	141	168	449	463	403	451	379	349	331	331
Total Liabilities	1,067	1,205	1,423	1,945	1,778	1,909	1,876	1,547	1,218	1,095	1,059
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Shareholder Capital	1,037	1,349	1,687	1,464	2,061	2,164	2,277	2,127	2,144	2,200	2,216
Contributed Surplus (Paid-in Capital)	10	12	14	32	45	59	52	41	40	44	41
Preferred Stock	1	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	218	105	67	(64)	(224)	(317)	(441)	(1,030)	(1,077)	(1,128)	(1,128)
Accumulated Cash Distributions / Other	66	52	56	593	405	299	247	74	71	72	69
Total Shareholders' Equity	1,332	1,518	1,823	2,025	2,287	2,205	2,135	1,213	1,179	1,187	1,198
Total Liabilities and Shareholders' Equity	2,399	2,724	3,246	3,970	4,065	4,114	4,012	2,760	2,397	2,282	2,257
Return on Capital Employed (ROCE)	**24.1%**	**4.9%**	**8.5%**	**6.7%**	**2.9%**	**3.3%**	**2.5%**	**-18.4%**	**-2.4%**	**-0.6%**	**1.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$54.46	$37.53	$38.18	$41.22	$32.68	$34.57	$33.72	$21.46	$17.00	$17.63	$17.00	$17.22	$21.53
Production Costs	$13.28	$12.33	$11.03	$12.48	$12.23	$11.54	$10.00	$7.02	$5.54	$5.65	$6.08	$5.76	$6.90
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$15.87	$15.51	$16.69	$14.51	$15.09	$14.62	$13.80	$10.99	$8.94	$8.36	$7.78	$8.36	$10.05
G&A / Other	$0.86	$0.94	$0.98	$1.12	$1.23	$1.29	$1.19	$1.00	$0.92	$0.81	$0.83	$0.85	$0.96
Pre-tax Results of Operations	$24.45	$8.75	$9.48	$13.11	$4.13	$7.13	$8.73	$2.44	$1.59	$2.81	$2.30	$2.25	$3.63
Income Taxes	$2.48	$0.87	$0.95	$2.94	$1.20	$2.33	$2.18	$0.52	$0.46	$1.03	$0.67	$0.71	$1.02
Results of Operations	$21.97	$7.87	$8.53	$10.17	$2.93	$4.80	$6.55	$1.92	$1.13	$1.78	$1.64	$1.54	$2.60

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonavista Energy Corporation (BNP - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	141.6	162.7	212.1	228.1	227.3	247.7	278.0	303.6	253.9	278.0	270.9	267.6	276.9
Liquids Production (b/d)	19,751	18,821	21,187	21,851	22,256	22,302	20,298	18,892	18,586	17,981	16,634	17,734	18,478
Total Production (boe/d)	43,351	45,932	56,535	59,873	60,136	63,592	66,631	69,496	60,905	64,319	61,785	62,336	64,627
% Gas Production	54%	59%	63%	64%	63%	65%	70%	73%	69%	72%	73%	72%	71%
% Oil Production	46%	41%	37%	36%	37%	35%	30%	27%	31%	28%	27%	28%	29%
Proven Reserves:													
Closing Gas Reserves (bcf)	378.8	622.3	738.1	759.0	829.2	849.1	970.2	925.6	1,023.4	1,052.9	1,114.9	1,063.8	1,017.4
Closing Oil Reserves (mmbbls)	53.7	57.5	67.7	75.4	78.0	80.5	76.4	74.7	72.1	70.2	77.2	73.1	74.1
Closing Total Proven Reserves (mmboe)	116.8	161.2	190.7	201.9	216.2	222.1	238.1	229.0	242.6	245.7	263.0	250.4	243.7
% Gas Reserves	54%	64%	65%	63%	64%	64%	68%	67%	70%	71%	71%	71%	70%
% Oil Reserves	46%	36%	35%	37%	36%	36%	32%	33%	30%	29%	29%	29%	30%
Proven Reserve Life Index	7.4	9.6	9.2	9.2	9.8	9.6	9.8	9.1	10.9	10.5	11.7	11.0	10.4
Proven Reserve Additions:													
Gas Additions (bcf)	81.1	290.0	171.7	85.6	157.2	116.7	229.2	49.1	185.4	126.0	159.6	471.0	749.2
Oil Additions (mmbbls)	8.3	12.3	17.4	14.9	10.5	10.5	3.7	5.2	1.6	4.3	12.9	18.9	27.8
Total Additions (mmboe)	21.8	60.6	46.0	29.1	36.7	30.0	41.9	13.4	32.5	25.3	39.6	97.4	152.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	14.8	12.5	20.6	15.5	20.9	19.5	34.6	28.5	29.8	28.8	28.3	87.0	150.1
Net Acquisitions	6.1	47.9	16.6	11.1	12.7	7.7	-1.2	-4.4	8.5	-0.1	10.5	18.9	13.3
Revisions of Estimates	1.0	0.3	8.8	2.5	3.1	2.8	8.5	-10.7	-5.8	-3.4	0.7	(8.5)	(10.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	67.7%	20.6%	44.8%	53.3%	56.9%	65.1%	82.5%	213.3%	91.7%	114.0%	71.5%	89.3%	98.3%
Net Acquisitions	27.8%	79.0%	36.1%	38.1%	34.5%	25.6%	-2.9%	-33.0%	26.2%	-0.5%	26.7%	19.5%	8.7%
Revisions of Estimates	4.5%	0.4%	19.2%	8.5%	8.6%	9.4%	20.4%	-80.3%	-17.9%	-13.5%	1.8%	-8.7%	-7.0%
Additions as % of Production:													
Gas	157.0%	488.4%	221.8%	102.8%	189.5%	129.0%	225.8%	44.3%	200.0%	124.1%	161.5%	160.7%	185.3%
Oil	115.3%	178.5%	225.0%	186.4%	129.4%	129.4%	50.4%	75.1%	24.3%	65.6%	213.3%	97.3%	103.1%
Total	138.0%	361.4%	223.0%	133.3%	167.3%	129.2%	172.4%	52.7%	146.4%	107.8%	175.4%	142.7%	161.8%
Additions as % of Reserves:													
Gas	21.4%	46.6%	23.3%	11.3%	19.0%	13.7%	23.6%	5.3%	18.1%	12.0%	14.3%	44.3%	73.6%
Oil	15.5%	21.3%	25.7%	19.7%	13.5%	13.1%	4.9%	6.9%	2.3%	6.1%	16.8%	25.8%	37.5%
Total	18.7%	37.6%	24.1%	14.4%	17.0%	13.5%	17.6%	5.8%	13.4%	10.3%	15.0%	38.9%	62.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$34.8	$24.0	$80.9	$6.0	$45.3	$37.5	$40.1	$13.8	$5.3	$15.1	$12.1	$32.5	$86.3
Exploration & Development	$253.4	$155.6	$258.4	$76.2	$345.9	$399.6	$541.9	$233.0	$111.4	$208.2	$115.5	$435.1	$1,210.0
Net Acquisitions	$166.7	$554.9	$214.1	$67.9	$3.6	$19.9	-$96.7	-$23.9	-$126.9	-$6.0	$4.7	-$128.2	-$248.9
Total Expenditures	$454.9	$734.5	$553.5	$150.1	$394.7	$457.0	$485.3	$222.8	-$10.1	$217.3	$132.2	$339.3	$1,047.4
Expenditures as % of Total:													
Land & Seismic	7.6%	3.3%	14.6%	4.0%	11.5%	8.2%	8.3%	6.2%	-52.2%	7.0%	9.1%	9.6%	8.2%
Exploration & Development	55.7%	21.2%	46.7%	50.8%	87.6%	87.4%	111.7%	104.6%	-1098.0%	95.8%	87.3%	128.2%	115.5%
Net Acquisitions	36.7%	75.6%	38.7%	45.2%	0.9%	4.4%	-19.9%	-10.7%	1250.2%	-2.8%	3.5%	-37.8%	-23.8%
Cashflow (C$million)	593.0	394.4	511.7	663.3	378.9	504.6	490.0	340.7	234.2	262.3	227.5	723.9	1554.6
Cashflow (C$/boe)	$37.47	$23.52	$24.80	$30.35	$17.26	$21.74	$20.15	$13.43	$10.54	$11.17	$10.09	$10.61	$13.18
Recycle Ratio	1.8x	1.9x	2.1x	5.9x	1.6x	1.4x	1.7x	0.8x	-33.8x	1.3x	3.0x	3.0x	1.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$18.28	$14.10	$11.54	$4.56	$16.27	$19.58	$13.49	$13.89	$4.86	$8.79	$4.40	$5.96	$9.30
Net Acquisition Costs	$27.48	$11.60	$12.90	$6.11	$0.28	$2.60	$79.14	$5.43	-$14.89	$52.50	$0.44	-$6.77	-$18.68
All Sources (incl. revisions)	$20.84	$12.12	$12.03	$5.15	$10.75	$15.24	$11.57	$16.68	-$0.31	$8.59	$3.34	$3.48	$6.86
Exploration & Development (excl. revisions)	$19.51	$14.39	$16.48	$5.29	$18.73	$22.40	$16.82	$8.66	$3.91	$7.74	$4.51	$5.38	$8.64
Net Acquisition Costs	$27.48	$11.60	$12.90	$6.11	$0.28	$2.60	$79.14	$5.43	-$14.89	$52.50	$0.44	-$6.77	-$18.68
All Sources (excl. revisions)	$21.83	$12.17	$14.88	$5.63	$11.76	$16.82	$14.53	$9.25	-$0.26	$7.56	$3.40	$3.20	$6.41

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

Bonavista Energy Corporation (BNP - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.28	12.33	11.03	12.48	12.23	11.54	10.00	7.02	5.54	5.65	6.08	5.76	6.90
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	0.86	0.94	0.98	1.12	1.23	1.29	1.19	1.00	0.92	0.81	0.83	0.85	0.96
F&D Costs (1-Year)	20.84	12.12	12.03	5.15	10.75	15.24	11.57	16.68	3.80	8.59	3.34	5.24	8.80
Return on Capital	9.64	7.24	6.92	2.98	6.63	9.16	7.08	9.47	2.61	5.65	2.47	3.61	5.74
Income Taxes	1.09	0.80	0.77	0.86	2.71	4.45	2.36	2.57	1.06	3.29	1.01	1.66	2.26
Breakeven Oil Price	**45.71**	**33.44**	**31.73**	**22.60**	**33.55**	**41.67**	**32.20**	**36.75**	**13.94**	**23.99**	**13.73**	**17.13**	**24.66**
Quality Differential	14.55	6.67	9.16	14.97	19.75	17.53	11.92	9.19	10.53	11.58	16.27	12.80	11.90
Required Brent Price	**60.26**	**40.11**	**40.90**	**37.57**	**53.29**	**59.20**	**44.12**	**45.94**	**24.47**	**35.57**	**30.01**	**29.93**	**36.56**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.72	17.27	16.91	21.56	23.17	20.70	16.35	9.92	7.79	9.09	11.82	9.35	10.88
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.08	1.32	1.51	1.93	2.33	2.31	1.95	1.42	1.30	1.31	1.62	1.39	1.51
F&D Costs (1-Year)	27.20	19.76	18.38	7.63	23.13	27.31	23.57	22.13	5.46	15.22	6.04	8.91	14.48
Return on Capital	12.60	11.47	10.44	4.46	14.04	16.64	14.58	12.89	3.70	10.07	4.61	6.25	9.60
Income Taxes	1.42	1.27	1.16	1.29	5.75	8.08	4.86	3.50	1.50	5.86	1.88	2.88	3.77
Breakeven Oil Price	**59.03**	**51.09**	**48.40**	**36.88**	**68.42**	**75.04**	**61.31**	**49.86**	**19.75**	**41.55**	**25.97**	**28.78**	**40.24**
Quality Differential	18.32	9.35	14.05	25.86	37.42	31.44	19.48	12.99	14.79	18.63	30.00	21.14	19.18
Required Brent Price	**77.35**	**60.43**	**62.45**	**62.74**	**105.84**	**106.49**	**80.80**	**62.86**	**34.54**	**60.18**	**55.97**	**49.92**	**59.42**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.72	17.27	16.91	21.56	23.17	20.70	16.35	9.92	7.79	9.09	11.82	9.35	10.88
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.08	1.32	1.51	1.93	2.33	2.31	1.95	1.42	1.30	1.31	1.62	1.39	1.51
F&D Costs (1-Year)	37.99	42.43	28.07	9.06	30.17	34.04	31.60	15.48	8.71	16.20	14.13	12.22	17.22
Return on Capital	17.61	24.62	15.96	5.30	18.40	20.72	19.69	9.03	5.96	10.72	10.77	8.59	11.41
Income Taxes	1.99	2.74	1.77	1.53	7.54	10.06	6.56	2.45	2.42	6.24	4.40	3.96	4.48
Breakeven Oil Price	**75.39**	**88.37**	**64.21**	**39.38**	**81.61**	**87.83**	**76.15**	**38.30**	**26.17**	**43.55**	**42.73**	**35.50**	**45.50**
Quality Differential	18.32	9.35	14.05	25.86	37.42	31.44	19.48	12.99	14.79	18.63	30.00	21.14	19.18
Required Brent Price	**93.71**	**97.72**	**78.26**	**65.25**	**119.02**	**119.28**	**95.64**	**51.29**	**40.96**	**62.18**	**72.73**	**56.64**	**64.68**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

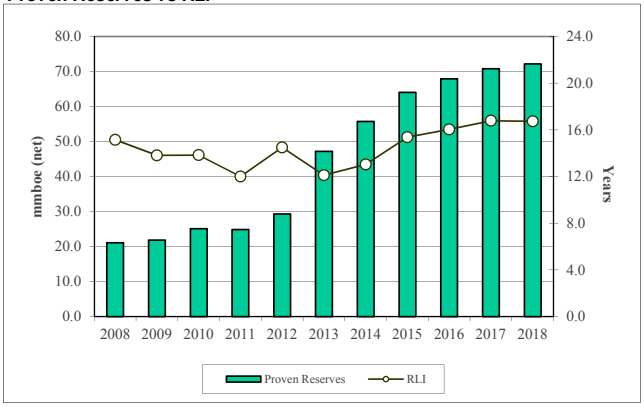
Bonterra Energy Corp. (BNE - TSX)

US$, net

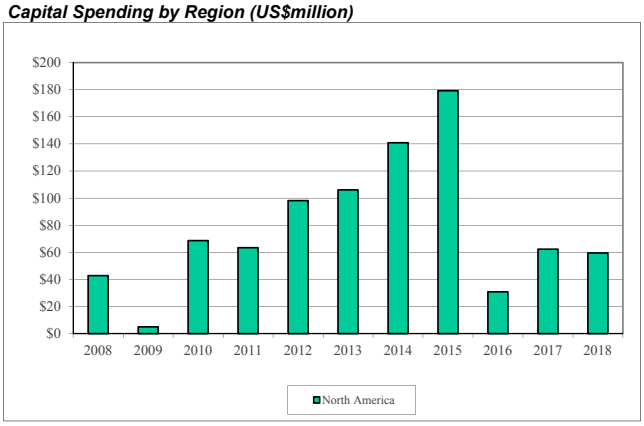
- Bonterra's results of operations were flat at $4.96/boe in 2018 from $5.04/boe in 2017.
- The company reported one-year F&D costs of $9.61/boe, up from $7.65/boe last year. On a realized oil:gas price ratio basis, F&D costs increased to $17.48/boe from $10.85/boe, while the costs for PD reserves jumped to $41.66/boe from $20.00/boe.
- Bonterra's 2018 costs imply a required Brent breakeven oil price of $74.40/boe on a realized ratio basis on total proved reserves, while PD costs imply a Brent breakeven oil price of $142.70/boe.
- The company reported ROCE of 2.3% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

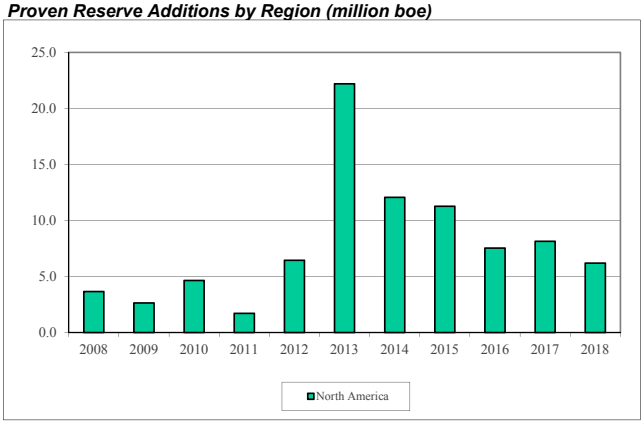
Proven Reserves vs RLI



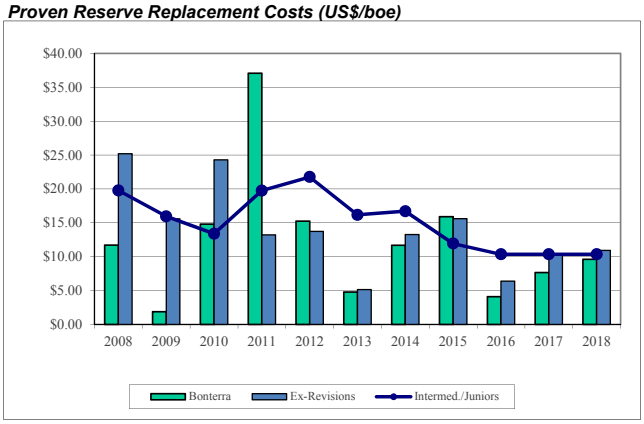
Capital Spending by Region (US$million)



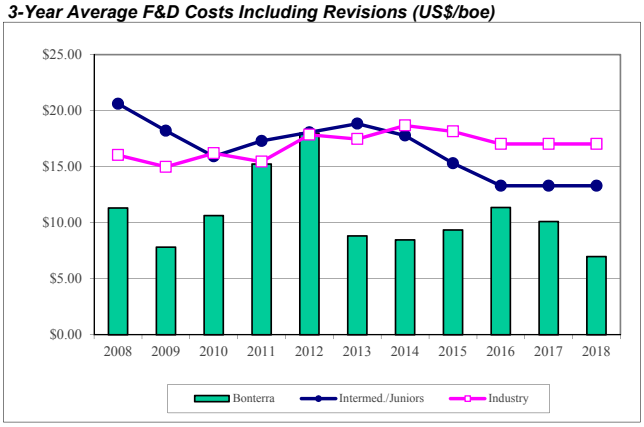
Proven Reserve Additions by Region (million boe)



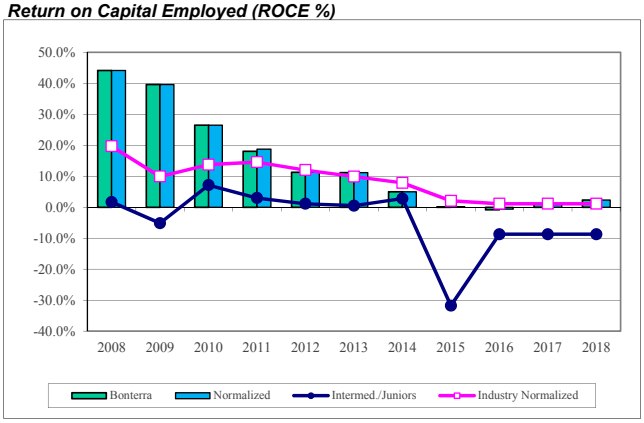
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

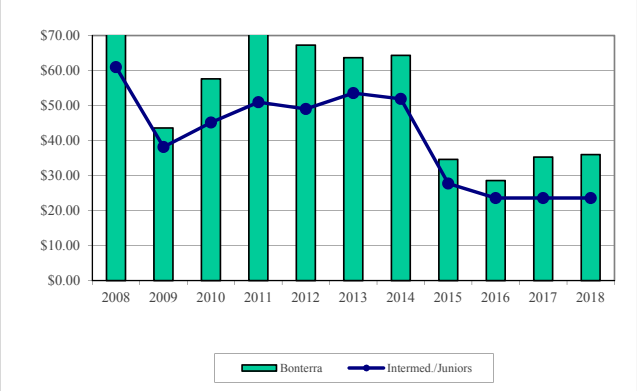
See pages F1 to F4 for analyst coverage.

Bonterra Energy Corp. (BNE - TSX)

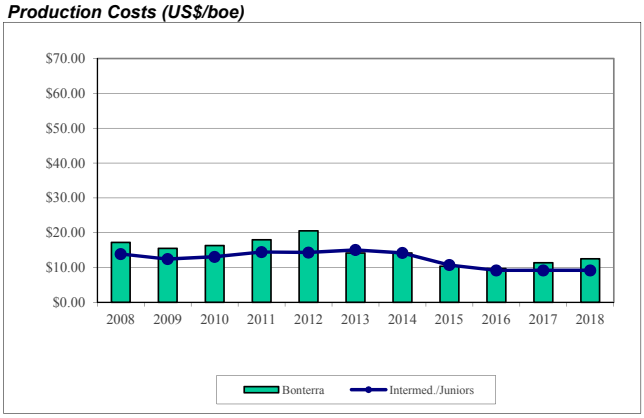
US$/boe, net

North America

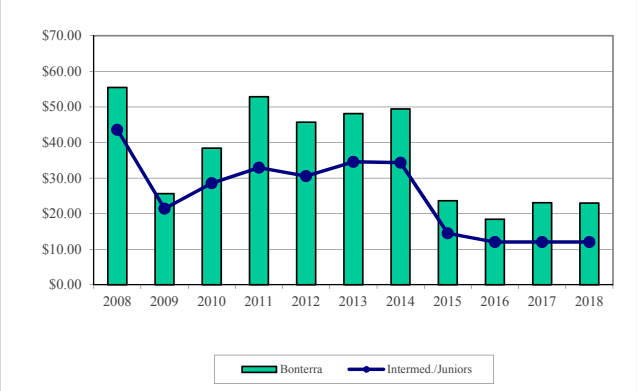
Upstream Net Revenue (US$/boe)



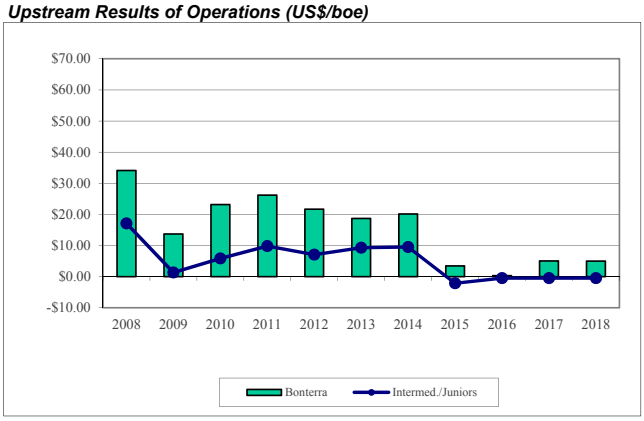
Production Costs (US$/boe)



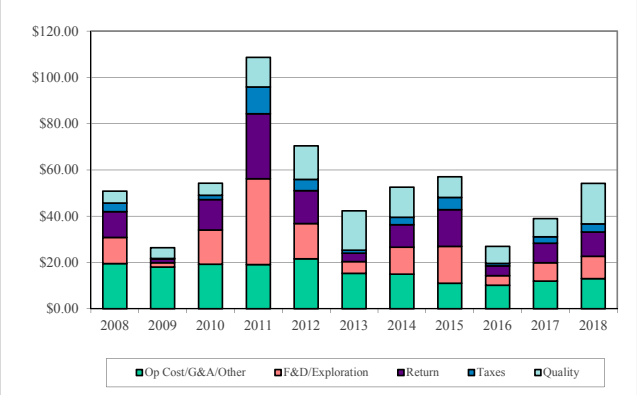
Upstream Operating Earnings (US$/boe)



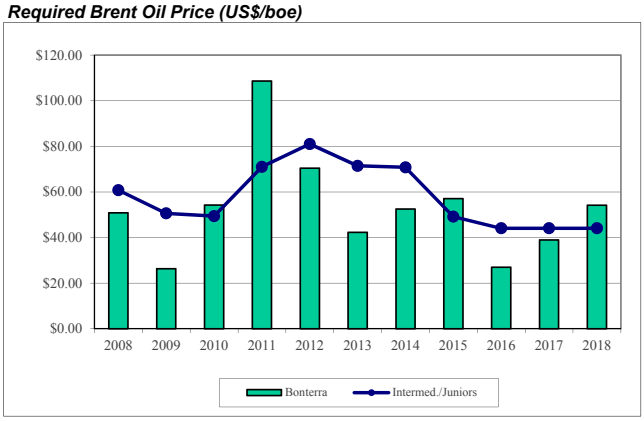
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonterra Energy Corp. (BNE - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	106	69	104	146	129	250	273	144	121	145	154
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(4)	-	-	3	7	(0)	2	0	0	4	1
Total Revenue and Other Income	101	69	104	149	136	250	275	144	121	149	155
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	24	25	30	37	41	55	61	43	41	48	54
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	1	0	0	-	1	0
General and Administrative	3	4	5	2	2	4	3	3	2	2	2
Depreciation, Depletion and Amortization	14	17	22	33	34	89	97	79	76	69	71
Interest, net	3	3	3	4	6	8	6	11	15	15	14
Other	3	(45)	(10)	10	8	10	9	6	9	7	6
Earnings Before Income Tax	55	66	55	62	45	82	99	2	(23)	6	9
Current Income Taxes	0	0	0	-	-	-	10	(0)	(3)	(0)	(0)
Future Income Taxes	2	5	7	18	11	21	55	9	(2)	4	3
Total Income Taxes	2	5	7	18	11	21	64	9	(4)	4	3
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	52	60	48	44	33	61	35	(7)	(18)	2	6
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	52	60	48	44	33	61	35	(7)	(18)	2	6
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	52	60	48	44	33	61	35	(7)	(18)	2	6

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	52	60	48	44	33	61	35	(7)	(18)	2	6
Charges and Credits Not Impacting Cash	16	22	28	33	34	90	151	88	77	79	77
Other	(2)	(21)	(10)	24	16	29	7	24	19	11	13
Cash Flow From Operations	66	62	67	101	83	180	194	105	78	92	96
Change in Working Capital / Other	(1)	(27)	(2)	0	(7)	(13)	8	(21)	(21)	(12)	(6)
Net Cash From Operating Activities	66	34	64	102	75	167	201	84	57	80	90
Total Capital Expenditures	(28)	(25)	(75)	(64)	(85)	(118)	(141)	(46)	(31)	(60)	(61)
Acquisitions, net	(13)	21	11	4	(10)	13	1	(133)	0	40	-
Other	(6)	(4)	(1)	14	(2)	2	(5)	(7)	13	(1)	(4)
Net Cash From Investing Activities	(47)	(8)	(64)	(46)	(97)	(104)	(145)	(186)	(17)	(21)	(65)
Net Change in Debt	25	(31)	25	(0)	97	(10)	12	127	(12)	(29)	3
Net Change in Common Stock	-	15	-	-	-	(1)	-	24	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(51)	(27)	(46)	(59)	(62)	(97)	(102)	(50)	(30)	(31)	(29)
Other	7	17	20	7	(13)	43	34	(0)	2	0	1
Net Cash From Financing Activities	(19)	(26)	(0)	(53)	22	(65)	(56)	102	(40)	(59)	(25)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	0	(0)	0	3	1	(2)	(0)	0	-	(0)	(0)
Cash and Equivalents, Beginning of Year	0	(0)	(0)	0	3	2	(0)	(0)	(0)	-	0
Cash and Equivalents, End of Year	0	(0)	0	3	4	(0)	(0)	(0)	(0)	(0)	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonterra Energy Corp. (BNE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	20	35	52	26	26	34	27	22	19	19	9
Net Property, Plant and Equipment	148	148	216	278	344	819	824	825	771	771	764
Other Assets	82	76	57	64	51	118	93	80	78	79	79
Total Assets	250	259	325	368	420	972	945	927	867	868	852
Total Current Liabilities	43	44	66	79	56	69	76	45	38	40	32
Long-term Debt	75	53	68	71	167	152	140	260	249	225	231
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	100	103
Other Liabilities and Deferred Credits	78	58	56	35	34	102	153	155	170	109	112
Total Liabilities	197	154	191	185	257	323	369	460	456	474	478
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	94	107	131	144	150	666	660	595	577	589	591
Contributed Surplus (Paid-in Capital)	2	3	3	5	9	12	10	12	16	20	22
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	(44)	(7)	(5)	31	3	(34)	(99)	(141)	(182)	(215)	(238)
Other / Comprehensive Income (Loss)	1	2	6	3	2	4	3	0	0	(0)	(1)
Total Shareholders' Equity	54	105	134	184	163	648	575	467	411	393	374
Total Liabilities and Shareholders' Equity	250	259	325	368	420	972	945	927	867	868	852
Return on Capital Employed (ROCE)	**44.2%**	**39.6%**	**26.5%**	**18.1%**	**11.3%**	**11.2%**	**5.0%**	**0.2%**	**-0.8%**	**1.0%**	**2.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$75.00	$43.63	$57.62	$71.98	$67.26	$63.71	$64.35	$34.63	$28.59	$35.28	$36.00	$33.31	$39.82
Production Costs	$17.22	$15.52	$16.32	$17.97	$20.51	$14.17	$14.17	$10.38	$9.72	$11.35	$12.50	$11.20	$11.64
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.29	$0.01	$0.03	$0.00	$0.29	$0.05	$0.11	$0.08
DD&A	$9.99	$10.74	$11.94	$15.97	$16.61	$22.89	$22.61	$19.01	$18.01	$16.33	$16.37	$16.90	$18.47
G&A / Other	$2.30	$2.48	$2.90	$1.14	$1.05	$1.11	$0.75	$0.62	$0.46	$0.59	$0.47	$0.51	$0.58
Pre-tax Results of Operations	$45.48	$14.89	$26.47	$36.89	$29.09	$25.26	$26.81	$4.58	$0.40	$6.72	$6.61	$4.59	$9.06
Income Taxes	$11.37	$1.19	$3.31	$10.73	$7.44	$6.56	$6.70	$1.14	$0.08	$1.68	$1.65	$1.06	$2.16
Results of Operations	$34.11	$13.69	$23.17	$26.16	$21.65	$18.69	$20.11	$3.43	$0.32	$5.04	$4.96	$3.53	$6.90

Source: BMO Capital Markets, Company Reports

Bonterra Energy Corp. (BNE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	6.7	9.9	9.7	10.3	10.5	20.2	21.0	18.1	21.3	22.1	22.6	22.0	21.0
Liquids Production (b/d)	2,700	2,679	3,354	3,961	3,784	7,304	8,210	8,398	8,052	7,876	8,057	7,995	8,118
Total Production (boe/d)	3,814	4,331	4,965	5,674	5,534	10,670	11,711	11,414	11,605	11,555	11,816	11,658	11,620
% Gas Production	29%	38%	32%	30%	32%	32%	30%	26%	31%	32%	32%	31%	30%
% Oil Production	71%	62%	68%	70%	68%	68%	70%	74%	69%	68%	68%	69%	70%
Proven Reserves:													
Closing Gas Reserves (bcf)	31.9	32.6	35.4	38.5	45.7	76.4	99.5	102.8	119.9	129.6	141.5	130.3	118.6
Closing Oil Reserves (mmbbls)	15.8	16.4	19.2	18.4	21.7	34.5	39.2	46.9	47.9	49.2	48.6	48.6	46.4
Closing Total Proven Reserves (mmboe)	21.1	21.8	25.1	24.8	29.3	47.2	55.7	64.0	67.9	70.8	72.2	70.3	66.1
% Gas Reserves	25%	25%	24%	26%	26%	27%	30%	27%	29%	31%	33%	31%	30%
% Oil Reserves	75%	75%	76%	74%	74%	73%	70%	73%	71%	69%	67%	69%	70%
Proven Reserve Life Index	15.1	13.9	13.9	12.0	14.5	12.2	13.0	15.4	16.0	16.8	16.7	16.5	15.6
Proven Reserve Additions:													
Gas Additions (bcf)	13.3	3.7	5.2	6.8	10.7	38.5	30.7	9.4	24.4	19.3	19.8	63.5	103.7
Oil Additions (mmbbls)	1.4	2.0	3.8	0.6	4.7	15.8	7.0	9.7	3.5	4.9	2.9	11.3	27.9
Total Additions (mmboe)	3.7	2.6	4.6	1.7	6.4	22.2	12.1	11.3	7.5	8.1	6.2	21.9	45.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.7	1.1	3.0	4.8	6.1	4.6	10.6	1.9	4.7	5.1	4.7	14.5	27.0
Net Acquisitions	1.0	-0.7	-0.2	0.0	1.1	16.0	0.0	9.6	0.1	0.9	0.8	1.8	11.5
Revisions of Estimates	2.0	2.3	1.8	-3.1	-0.7	1.6	1.4	-0.2	2.7	2.1	0.7	5.5	6.8
Components as % of Total Additions:													
Extensions, Discoveries and Additions	17.9%	39.9%	65.3%	280.3%	94.1%	20.6%	87.7%	17.1%	62.3%	62.9%	75.4%	66.2%	59.7%
Net Acquisitions	28.6%	-27.8%	-4.4%	0.0%	16.8%	72.2%	0.4%	84.8%	1.7%	11.5%	12.6%	8.4%	25.3%
Revisions of Estimates	53.5%	87.9%	39.1%	-180.3%	-11.0%	7.2%	12.0%	-1.9%	36.0%	25.5%	12.0%	25.3%	15.0%
Additions as % of Production:													
Gas	545.3%	101.7%	148.4%	181.5%	279.8%	522.0%	400.7%	142.6%	314.1%	239.5%	240.6%	264.0%	270.4%
Oil	146.1%	207.3%	307.7%	39.8%	336.9%	592.2%	232.0%	316.6%	118.0%	171.2%	98.3%	128.9%	188.6%
Total	262.7%	167.1%	256.0%	82.6%	318.9%	570.0%	282.4%	270.6%	178.1%	193.0%	143.5%	171.3%	213.2%
Additions as % of Reserves:													
Gas	41.7%	11.3%	14.8%	17.7%	23.5%	50.3%	30.9%	9.2%	20.4%	14.9%	14.0%	48.8%	87.4%
Oil	9.1%	12.4%	19.6%	3.1%	21.5%	45.8%	17.8%	20.7%	7.2%	10.0%	5.9%	23.2%	60.3%
Total	17.3%	12.1%	18.5%	6.9%	22.0%	47.0%	21.7%	17.6%	11.1%	11.5%	8.6%	31.1%	68.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$0.0	$5.1	$0.0	$0.3	$0.2	$0.0	$0.4	$0.4	$0.0	$0.0	$0.0	$0.0	$0.7
Exploration & Development	$28.4	$20.2	$74.7	$63.3	$84.6	$118.1	$141.6	$45.4	$30.9	$58.7	$56.7	$146.3	$333.3
Net Acquisitions	$14.5	-$20.3	-$6.1	-$0.2	$13.4	-$12.1	-$1.0	$133.5	$0.0	$3.6	$2.8	$6.3	$138.7
Total Expenditures	$42.8	$5.0	$68.6	$63.4	$98.2	$106.1	$140.9	$179.3	$30.8	$62.3	$59.5	$152.6	$472.8
Expenditures as % of Total:													
Land & Seismic	0.0%	103.1%	0.0%	0.5%	0.2%	0.0%	0.3%	0.2%	0.0%	0.0%	0.0%	0.0%	0.2%
Exploration & Development	66.2%	406.2%	108.8%	99.9%	86.2%	111.3%	100.5%	25.3%	100.1%	94.2%	95.4%	95.9%	70.5%
Net Acquisitions	33.8%	-409.3%	-8.8%	-0.4%	13.6%	-11.4%	-0.7%	74.4%	-0.1%	5.8%	4.6%	4.1%	29.3%
Cashflow (US$million)	$66.4	$61.6	$66.8	$101.3	$82.9	$180.1	$193.6	$105.3	$77.8	$90.0	$93.7	$261.5	$560.4
Cashflow (US$/boe)	$47.74	$38.99	$36.85	$48.94	$41.03	$46.25	$45.30	$25.26	$18.37	$21.33	$21.72	$20.48	$26.42
Recycle Ratio	4.1x	20.7x	2.5x	1.3x	2.7x	9.7x	3.9x	1.6x	4.5x	2.8x	2.3x	2.9x	2.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$10.86	$7.50	$15.42	$37.21	$15.84	$19.12	$11.80	$26.74	$4.16	$8.15	$10.48	$7.30	$9.89
Net Acquisition Costs	$13.84	$27.71	$29.74	na	$12.33	-$0.75	-$23.05	$13.96	-$0.32	$3.82	$3.54	$3.42	$12.12
All Sources (incl. revisions)	$11.71	$1.88	$14.79	$37.07	$15.24	$4.78	$11.67	$15.90	$4.09	$7.65	$9.61	$6.98	$10.46
Exploration & Development (excl. revisions)	$43.37	$24.03	$24.65	$13.28	$13.99	$25.83	$13.41	$23.73	$6.57	$11.46	$12.16	$10.10	$12.37
Net Acquisition Costs	$13.84	$27.71	$29.74	na	$12.33	-$0.75	-$23.05	$13.96	-$0.32	$3.82	$3.54	$3.42	$12.12
All Sources (excl. revisions)	$25.20	$15.58	$24.28	$13.23	$13.74	$5.15	$13.26	$15.60	$6.39	$10.28	$10.92	$9.34	$12.30

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Bonterra Energy Corp. (BNE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.22	15.52	16.32	17.97	20.51	14.17	14.17	10.38	9.72	11.35	12.50	11.20	11.64
Exploration Expense	-	-	-	-	-	0.29	0.01	0.03	-	0.29	0.05	0.11	0.08
G&A/Other	2.30	2.48	2.90	1.14	1.05	1.11	0.75	0.62	0.46	0.59	0.47	0.51	0.58
F&D Costs (1-Year)	11.32	1.88	14.79	37.07	15.24	4.78	11.67	15.90	4.09	7.65	9.61	6.98	10.46
Return on Capital	11.10	1.67	13.18	28.13	14.22	3.65	9.71	15.89	4.28	8.44	10.54	7.56	10.60
Income Taxes	3.70	0.15	1.88	11.54	4.88	1.28	3.24	5.30	1.01	2.81	3.51	2.26	3.32
Breakeven Oil Price	**45.64**	**21.70**	**49.07**	**95.84**	**55.91**	**25.28**	**39.55**	**48.12**	**19.56**	**31.13**	**36.70**	**28.62**	**36.66**
Quality Differential	5.18	4.65	5.20	12.77	14.48	17.02	12.97	8.94	7.41	7.84	17.50	10.91	10.93
Required Brent Price	**50.82**	**26.35**	**54.27**	**108.62**	**70.39**	**42.30**	**52.52**	**57.07**	**26.97**	**38.97**	**54.20**	**39.53**	**47.60**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	19.74	19.96	20.75	23.16	27.49	18.62	17.69	12.56	12.36	14.88	17.09	14.73	14.89
Exploration Expense	-	-	-	-	-	0.38	0.01	0.04	-	0.38	0.07	0.15	0.10
G&A/Other	2.64	3.20	3.68	1.47	1.41	1.46	0.94	0.75	0.59	0.77	0.65	0.67	0.74
F&D Costs (1-Year)	13.46	2.18	16.88	73.06	19.61	6.12	16.27	17.51	6.56	10.85	17.48	11.02	14.44
Return on Capital	13.49	2.13	16.09	57.83	19.59	4.90	13.54	17.44	6.93	12.13	12.13	13.94	10.70
Income Taxes	4.50	0.19	2.30	23.72	6.73	1.72	4.51	5.81	1.64	4.04	4.04	4.17	3.35
Breakeven Oil Price	**53.83**	**27.64**	**59.69**	**179.24**	**74.82**	**33.20**	**52.96**	**54.12**	**28.07**	**43.04**	**51.46**	**44.68**	**44.21**
Quality Differential	5.94	5.98	6.62	16.47	19.40	22.38	16.20	10.83	9.42	10.27	22.94	14.21	13.93
Required Brent Price	**59.76**	**33.62**	**66.31**	**195.70**	**94.22**	**55.58**	**69.16**	**64.94**	**37.49**	**53.31**	**74.40**	**58.89**	**58.14**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	19.74	19.96	20.75	23.16	27.49	18.62	17.69	12.56	12.36	14.88	17.09	14.73	14.89
Exploration Expense	-	-	-	-	-	0.38	0.01	0.04	-	0.38	0.07	0.15	0.10
G&A/Other	2.64	3.20	3.68	1.47	1.41	1.46	0.94	0.75	0.59	0.77	0.65	0.67	0.74
F&D Costs (1-Year)	15.36	18.29	24.21	29.58	41.12	12.47	25.83	17.28	10.81	20.00	41.66	20.63	23.12
Return on Capital	15.43	18.03	23.26	23.51	41.04	10.07	21.51	17.21	11.43	22.33	45.21	22.42	23.49
Income Taxes	5.14	1.57	3.32	9.64	14.10	3.53	7.17	5.74	2.71	7.44	15.07	6.71	7.35
Breakeven Oil Price	**58.32**	**61.04**	**75.22**	**87.37**	**125.15**	**46.54**	**73.16**	**53.58**	**37.89**	**65.78**	**119.76**	**65.31**	**69.68**
Quality Differential	5.94	5.98	6.62	16.47	19.40	22.38	16.20	10.83	9.42	10.27	22.94	14.21	13.93
Required Brent Price	**64.25**	**67.02**	**81.84**	**103.84**	**144.55**	**68.92**	**89.36**	**64.41**	**47.31**	**76.06**	**142.70**	**79.52**	**83.61**

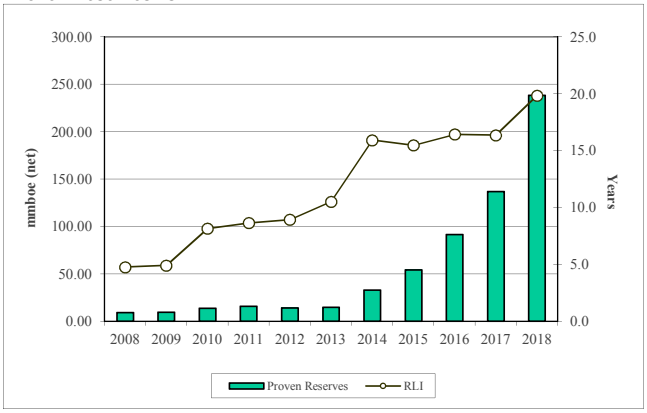
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

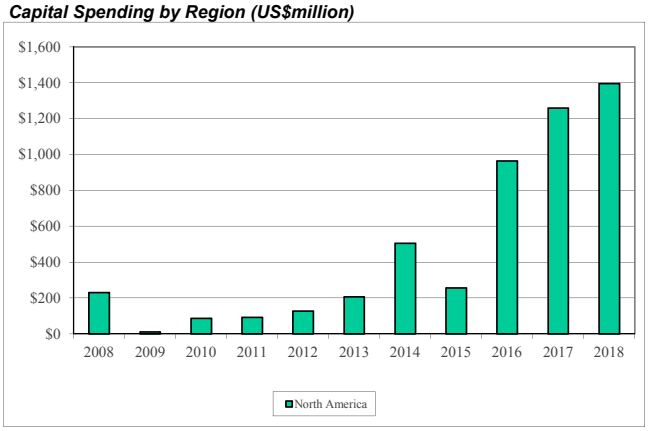
Callon Petroleum (CPE - NYSE) US$, net

- The company reported results of operations of $14.53/boe versus $11.88/boe last year.
- One-year F&D costs dropped to $12.30/boe from $23.43/boe in 2017. On a realized oil:gas price ratio basis, F&D costs came in lower at $14.76/boe versus $26.21/boe, while costs for PD reserves improved to $24.01/boe versus $42.06/boe the previous year.
- Callon Petroleum's 2018 operations imply a required Brent breakeven oil price of $70.32/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a breakeven of $97.42/boe.
- The company reported return on capital of 9.4% in 2018 versus 5.6% in 2017.

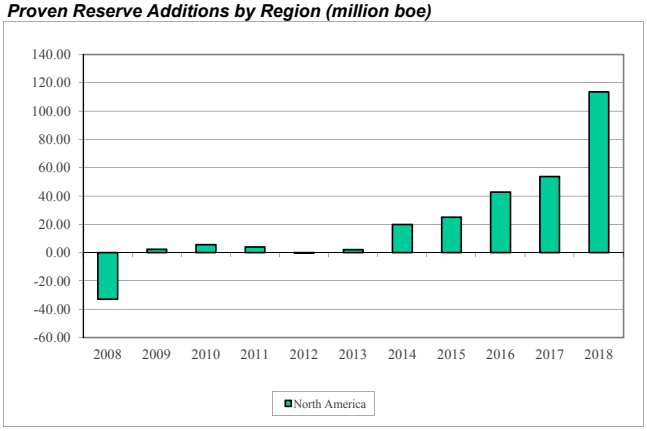
Proven Reserves vs RLI



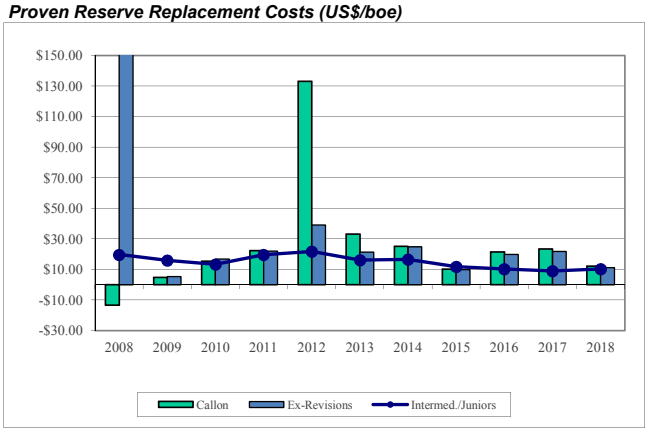
Capital Spending by Region (US$million)



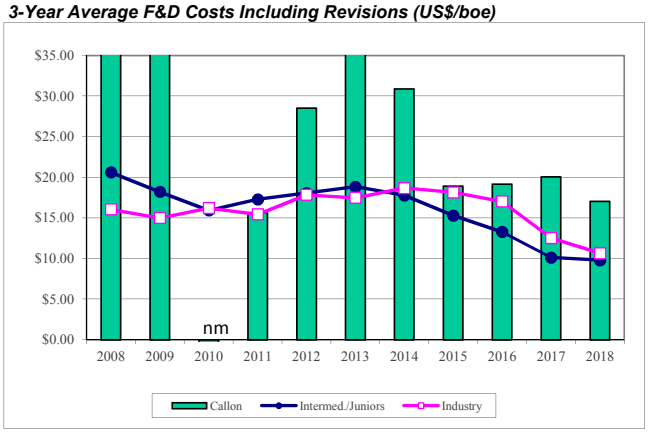
Proven Reserve Additions by Region (million boe)



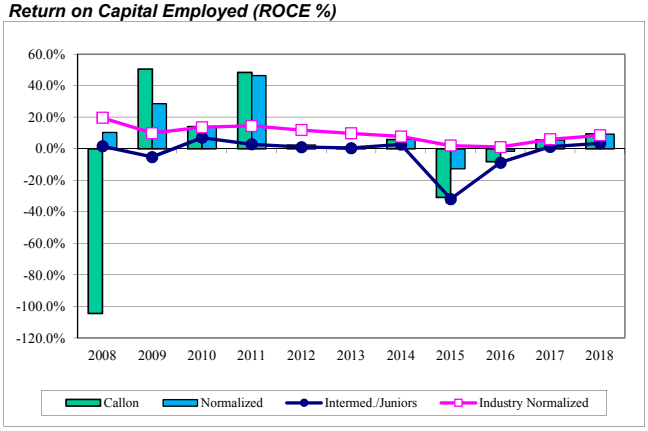
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



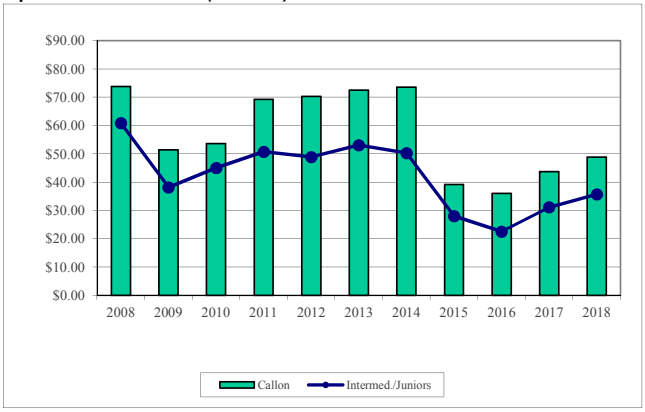
Source: BMO Capital Markets, Company Reports

Callon Petroleum (CPE - NYSE)

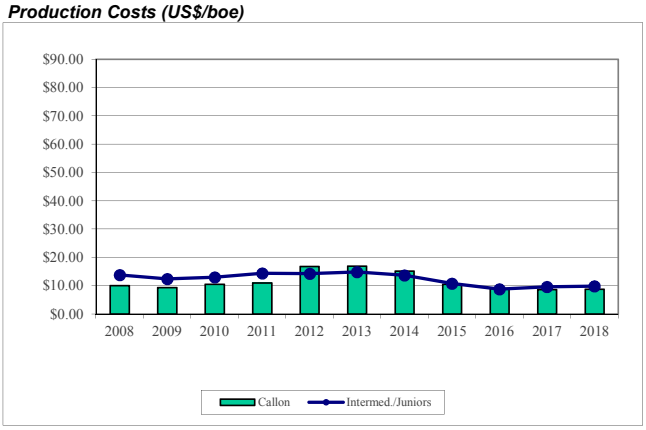
US$/boe, net

North America

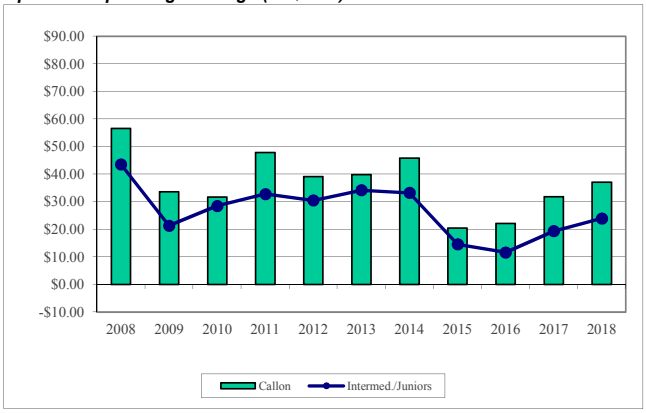
Upstream Net Revenue (US$/boe)



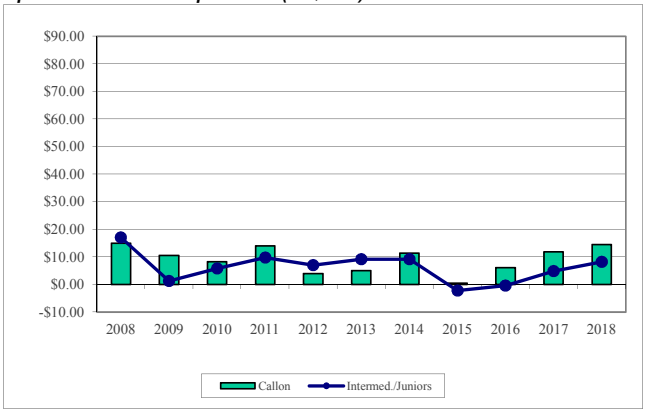
Production Costs (US$/boe)



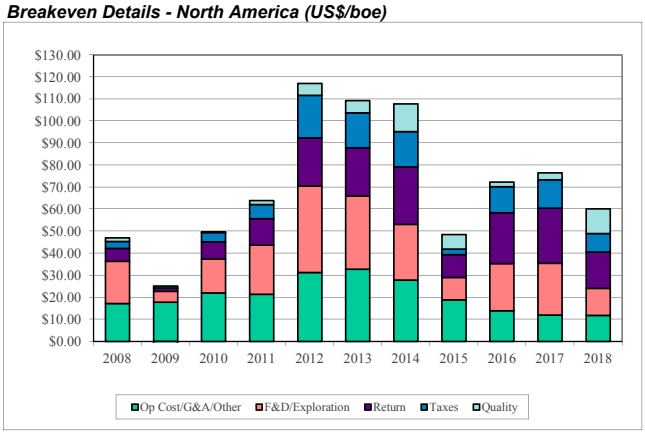
Upstream Operating Earnings (US$/boe)



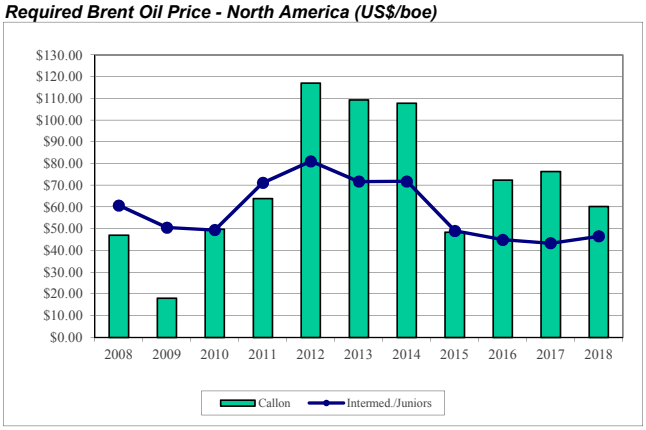
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Callon Petroleum (CPE - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	141	101	90	128	111	103	152	138	201	366	588
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	41	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	141	142	90	128	111	103	152	138	201	366	588
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	19	18	18	20	27	24	31	37	50	72	105
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	10	13	17	17	20	21	25	28	26	27	35
Depreciation, Depletion and Amortization	64	33	32	49	50	44	57	69	71	116	182
Interest, net	27	26	13	12	9	6	10	21	12	2	3
Other	496	(6)	0	(8)	(2)	(1)	(33)	183	132	27	(46)
Earnings Before Income Tax	(479)	54	8	36	5	7	61	(202)	(92)	122	308
Current Income Taxes	-	(19)	(2)	(80)	-	0	-	-	(0)	(0)	-
Future Income Taxes	(40)	19	2	13	2	3	23	38	0	1	8
Total Income Taxes	(40)	-	(0)	(67)	2	3	23	38	(0)	1	8
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(439)	54	8	103	3	4	38	(240)	(92)	120	300
Discontinued Operations/Extraordinary Items	0	1	0	1	0	0	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(439)	54	8	104	3	4	38	(240)	(92)	120	300
Preferred Stock Dividends	-	-	-			5	8	8	7	7	7
Net Earnings to Common Shareholders	(439)	54	8	104	3	(0)	30	(248)	(99)	113	293

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(439)	54	8	103	3	4	38	(240)	(92)	120	300
Charges and Credits Not Impacting Cash	511	53	34	63	53	48	81	317	169	119	193
Other	13	(7)	(2)	(88)	(0)	4	(26)	14	58	23	(72)
Cash Flow From Operations	85	100	41	78	55	57	93	91	135	263	421
Change in Working Capital / Other	8	(73)	59	1	(4)	(2)	1	(4)	(17)	(33)	47
Net Cash From Operating Activities	93	26	100	79	51	54	94	87	119	230	468
Total Capital Expenditures	(177)	(36)	(60)	(100)	(133)	(160)	(233)	(227)	(190)	(420)	(611)
Acquisitions, net	167	(16)	(1)	8	38	79	(220)	(32)	(630)	(653)	(710)
Other	0	2	1	1	2	1	-	-	(46)	-	(3)
Net Cash From Investing Activities	(9)	(50)	(60)	(92)	(94)	(80)	(453)	(259)	(866)	(1,073)	(1,324)
Net Change in Debt	(122)	10	(26)	(35)	(0)	(38)	261	5	60	226	566
Net Change in Common Stock	-	-	-	74	-	-	122	175	1,358	-	288
Net Change in Preferred Stock	-	-	-	-	-	70	-	-	-		
Cash Dividends Paid	-	-	-	-	-	(5)	(8)	(8)	(7)	(7)	(7)
Other	1	-	(0)	-	(0)	-	(20)	-	(11)	(1)	(2)
Net Cash From Financing Activities	(121)	10	(26)	39	(0)	27	356	173	1,399	218	844
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(36)	(13)	14	26	(43)	2	(2)	0	652	(625)	(12)
Cash and Equivalents, Beginning of Year	53	17	3	17	44	1	3	1	1	653	28
Cash and Equivalents, End of Year	17	4	17	44	1	3	1	1	653	28	16

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Callon Petroleum (CPE - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	84	78	30	63	20	30	60	62	725	145	223
Net Property, Plant and Equipment	162	133	172	226	280	331	749	719	1,490	2,534	3,741
Other Assets	20	17	16	78	79	63	67	7	53	15	16
Total Assets	266	228	218	367	378	424	877	789	2,268	2,693	3,979
Total Current Liabilities	86	118	21	27	38	63	99	88	132	206	315
Long-term Debt	273	179	166	125	121	76	335	329	390	620	1,189
Deferred Income Taxes	-	-	-	-	-	-	-	-	0	1	10
Other Liabilities and Deferred Credits	37	12	16	16	13	6	9	9	12	10	20
Total Liabilities	396	309	203	169	172	145	443	426	534	837	1,534
Minority Interests										-	-
Common Shares	0	0	0	0	0	0	1	1	2	2	2
Contributed Surplus (Paid-in Capital)	228	244	248	324	328	402	526	703	2,172	2,181	2,477
Preferred Stock	-	-	-	-	-	0	0	0	0	0	0
Retained Earnings	(372)	(318)	(224)	(128)	(123)	(123)	(93)	(341)	(440)	(327)	(34)
Other / Comprehensive Income (Loss)	14	(7)	(9)	2	-	-	-	-	-	-	-
Total Shareholders' Equity	(130)	(81)	16	199	206	279	434	363	1,733	1,856	2,445
Total Liabilities and Shareholders' Equity	266	228	218	367	378	424	877	789	2,268	2,693	3,979
Return on Capital Employed (ROCE)	**-104.4%**	**50.5%**	**14.2%**	**48.5%**	**2.4%**	**0.9%**	**6.0%**	**-30.7%**	**-8.1%**	**5.6%**	**9.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$73.78	$51.44	$53.68	$69.27	$70.31	$72.60	$73.65	$39.20	$36.04	$43.77	$48.90	$44.48	$45.80
Production Costs	$10.03	$9.37	$10.58	$11.04	$16.86	$16.92	$15.20	$10.50	$9.01	$8.64	$8.73	$8.76	$9.38
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$33.44	$16.99	$19.00	$26.43	$31.56	$31.12	$27.51	$19.74	$12.81	$13.82	$15.14	$14.21	$15.70
G&A/Other	$7.17	$8.38	$11.32	$10.30	$14.36	$15.80	$12.58	$8.27	$4.89	$3.31	$3.01	$3.51	$4.63
Pre-tax Results of Operations	$23.14	$16.69	$12.79	$21.50	$7.53	$8.76	$18.36	$0.69	$9.33	$18.00	$22.02	$18.00	$16.10
Income Taxes	$8.10	$6.12	$4.48	$7.53	$3.53	$3.68	$6.97	$0.13	$3.17	$6.12	$7.49	$6.12	$5.51
Results of Operations	$15.04	$10.57	$8.31	$13.98	$4.00	$5.08	$11.39	$0.56	$6.16	$11.88	$14.53	$11.88	$10.59

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$73.78	$51.44	$53.68	$69.27	$70.31	$72.60	$73.65	$39.20	$36.04	$43.77	$48.90	$44.48	$45.80
Production Costs	$10.03	$9.37	$10.58	$11.04	$16.86	$16.92	$15.20	$10.50	$9.01	$8.64	$8.73	$8.76	$9.38
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$33.44	$16.99	$19.00	$26.43	$31.56	$31.12	$27.51	$19.74	$12.81	$13.82	$15.14	$14.21	$15.70
G&A/Other	$7.17	$8.38	$11.32	$10.30	$14.36	$15.80	$12.58	$8.27	$4.89	$3.31	$3.01	$3.51	$4.63
Pre-tax Results of Operations	$23.14	$16.69	$12.79	$21.50	$7.53	$8.76	$18.36	$0.69	$9.33	$18.00	$22.02	$18.00	$16.10
Income Taxes	$8.10	$6.12	$4.48	$7.53	$3.53	$3.68	$6.97	$0.13	$3.17	$6.12	$7.49	$6.12	$5.51
Results of Operations	$15.04	$10.57	$8.31	$13.98	$4.00	$5.08	$11.39	$0.56	$6.16	$11.88	$14.53	$11.88	$10.59

Source: BMO Capital Markets, Company Reports

Callon Petroleum (CPE - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	16.0	15.7	13.4	13.9	9.8	8.2	6.1	11.8	21.3	29.9	42.3	31.1	22.3
Liquids Production (b/d)	2,581	2,773	2,353	2,729	2,677	2,496	4,636	7,641	11,726	17,964	25,871	18,521	13,568
Total Production (boe/d)	5,247	5,394	4,587	5,049	4,315	3,871	5,649	9,610	15,268	22,940	32,925	23,711	17,278
% Gas Production	51%	49%	49%	46%	38%	36%	18%	20%	23%	22%	21%	22%	21%
% Oil Production	49%	51%	51%	54%	62%	64%	82%	80%	77%	78%	79%	78%	79%
Proven Reserves:													
Gas Reserves (bcf)	18.7	19.1	33.0	35.1	19.8	17.8	42.5	65.5	122.6	179.4	350.5	217.5	152.1
Oil Reserves (mmbbls)	6.0	6.5	8.1	10.1	10.8	11.9	25.7	43.3	71.1	107.1	180.1	119.4	85.5
Total Proven Reserves (mmboe)	9.1	9.7	13.6	15.9	14.1	14.9	32.8	54.3	91.6	137.0	238.5	155.7	110.8
% Gas Reserves	34%	33%	40%	37%	23%	20%	22%	20%	22%	22%	24%	23%	23%
% Oil Reserves	66%	67%	60%	63%	77%	80%	78%	80%	78%	78%	76%	77%	77%
Proven Reserve Life Index	4.8	4.9	8.1	8.6	8.9	10.5	15.9	15.5	16.4	16.4	19.8	17.5	16.8
Proven Reserve Additions:													
Gas Additions (bcf)	-92.0	6.2	18.7	7.2	-11.8	1.0	27.0	27.3	64.8	67.7	186.5	319.0	373.3
Oil Additions (mmbbls)	-17.6	1.5	2.5	2.9	1.7	2.0	15.5	20.4	32.1	42.5	82.5	157.0	193.0
Total Additions (mmboe)	-32.9	2.5	5.7	4.1	-0.3	2.2	20.0	25.0	42.9	53.8	113.6	210.2	255.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.0	0.0	5.2	4.2	3.2	9.5	15.7	22.4	17.3	47.4	85.0	149.7	187.7
Acquisitions	0.0	2.2	0.0	0.0	0.1	0.2	4.7	3.4	31.1	10.5	39.7	81.3	89.4
Dispositions	-15.6	0.0	-	(0.1)	(1.2)	(4.1)	-	(0.0)	(2.2)	-	-	(2.2)	(2.2)
Revisions of Estimates	-17.3	0.2	0.5	(0.0)	(2.3)	(3.4)	(0.3)	(0.8)	(3.4)	(4.1)	(11.1)	(18.6)	(19.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-0.1%	0.0%	91.5%	102.7%	-1137.4%	431.6%	78.2%	89.8%	40.4%	88.1%	74.8%	71.2%	73.6%
Acquisitions	0.0%	90.0%	0.0%	0.0%	-20.4%	9.2%	23.2%	13.7%	72.6%	19.5%	34.9%	38.7%	35.0%
Dispositions	47.5%	0.0%	0.0%	-2.0%	440.8%	-184.6%	0.0%	-0.2%	-5.1%	0.0%	0.0%	-1.0%	-0.9%
Revisions of Estimates	52.5%	10.0%	8.5%	-0.7%	817.0%	-156.2%	-1.4%	-3.3%	-8.0%	-7.7%	-9.8%	-8.9%	-7.7%
Additions as % of Production:													
Gas	-1574.7%	107.9%	383.2%	142.5%	-328.2%	33.5%	1217.0%	633.1%	835.7%	621.3%	1207.4%	935.5%	918.8%
Oil	-1864.3%	144.7%	294.4%	293.4%	172.2%	222.7%	917.7%	731.6%	749.5%	647.9%	873.3%	774.3%	779.3%
Total	-1717.2%	126.8%	337.6%	224.1%	-17.8%	155.5%	971.4%	711.4%	769.5%	642.1%	944.9%	809.6%	809.3%
Additions as % of Reserves:													
Gas	-493.1%	32.4%	56.9%	20.6%	-59.6%	5.7%	63.5%	41.7%	52.9%	37.7%	53.2%	146.7%	245.4%
Oil	-291.4%	22.6%	31.0%	29.0%	15.6%	17.1%	60.3%	47.1%	45.1%	39.7%	45.8%	131.5%	225.7%
Total	-360.0%	25.8%	41.4%	25.9%	-2.0%	14.8%	61.0%	46.0%	46.8%	39.3%	47.6%	135.0%	230.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$2.6	$0.0	$14.7	$5.5	$57.4	$157.9	$129.4	$85.9	$47.2	$245.8	$323.5	$616.5	$831.9
Development	$223.1	-$11.6	$62.0	$88.3	$38.4	$36.5	$153.5	$138.7	$151.7	$279.4	$259.4	$690.6	$982.8
Acquisitions	$6.1	$23.7	$10.7	$0.0	$31.7	$13.1	$222.9	$32.2	$765.2	$734.7	$814.1	$2,314.0	$2,569.2
Dispositions	na	na	na	na	na	na	na	na	na	$0.0	$0.0	na	na
Total Expenditures	$231.8	$12.2	$87.4	$93.8	$127.5	$207.6	$505.9	$256.8	$964.2	$1,259.9	$1,397.0	$3,621.1	$4,383.8
Expenditures as % of Total:													
Exploration	1.1%	0.0%	16.9%	5.8%	45.0%	76.1%	25.6%	33.4%	4.9%	19.5%	23.2%	17.0%	19.0%
Development	96.2%	-94.9%	70.9%	94.2%	30.2%	17.6%	30.4%	54.0%	15.7%	22.2%	18.6%	19.1%	22.4%
Acquisitions	2.6%	194.9%	12.2%	0.0%	24.8%	6.3%	44.1%	12.6%	79.4%	58.3%	58.3%	63.9%	58.6%
Cashflow (US$million)	$84.9	$99.7	$40.6	$78.3	$55.5	$56.6	$92.9	$90.7	$135.2	$262.6	$420.8	$818.5	$1,002.1
Cashflow (US$/boe)	$44.34	$50.66	$24.23	$42.49	$35.23	$40.04	$45.05	$25.85	$24.25	$31.36	$35.02	$31.53	$31.78
Recycle Ratio	-3.3x	10.4x	1.6x	1.9x	0.3x	1.2x	1.8x	2.5x	1.1x	1.3x	2.8x	1.8x	1.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-$13.07	-$46.37	$13.57	$22.27	$106.47	$32.13	$18.40	$10.41	$14.29	$12.14	$7.89	$9.97	$10.80
Acquisition Costs	na	$10.57	na	na	$553.91	$64.80	$47.88	$9.43	$24.58	$69.92	$20.52	$28.45	$28.74
All Sources (incl. revisions)	-$13.43	$4.88	$15.46	$22.27	$133.19	$33.19	$25.26	$10.27	$21.40	$23.43	$12.30	$17.05	$17.03
Exploration & Development (excl. revisions)	$12,895.31	na	$14.83	$22.12	$30.00	$20.50	$18.08	$10.03	$11.47	$11.09	$6.86	$8.73	$9.67
Acquisition Costs	na	$10.57	na	na	$553.91	$64.80	$47.88	$9.43	$24.58	$69.92	$20.52	$28.45	$28.74
All Sources (excl. revisions)	$13,245.37	$5.42	$16.90	$22.12	$39.21	$21.43	$24.91	$9.95	$19.89	$21.77	$11.21	$15.68	$15.82

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Callon Petroleum (CPE - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.03	9.37	10.58	11.04	16.86	16.92	15.20	10.50	9.01	8.64	8.73	8.76	9.38
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	7.17	8.38	11.32	10.30	14.36	15.80	12.58	8.27	4.89	3.31	3.01	3.51	4.63
F&D Costs (1-Year)	19.06	4.88	15.46	22.27	39.21	33.19	25.26	10.27	21.40	23.43	12.30	17.05	17.03
Return on Capital	5.86	1.53	7.80	12.04	21.89	21.96	26.15	10.33	23.00	25.04	16.45	19.76	18.80
Income Taxes	3.16	0.89	4.20	6.48	19.30	15.90	16.02	2.44	11.85	12.90	8.47	10.18	8.77
Breakeven Oil Price	**45.28**	**25.06**	**49.35**	**62.13**	**111.62**	**103.78**	**95.21**	**41.81**	**70.15**	**73.32**	**48.96**	**59.27**	**58.61**
Quality Differential	1.68	(7.10)	0.37	1.80	5.42	5.47	12.49	6.61	2.17	3.07	11.24	3.93	9.14
Required Brent Price	**46.96**	**17.96**	**49.72**	**63.93**	**117.05**	**109.24**	**107.70**	**48.42**	**72.32**	**76.39**	**60.20**	**63.20**	**67.75**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.41	12.55	15.07	16.17	23.66	22.77	17.00	12.02	10.38	9.70	10.04	10.00	10.69
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	8.88	11.23	16.13	15.08	20.15	21.25	14.07	9.47	5.64	3.72	3.46	4.01	5.28
F&D Costs (1-Year)	82.72	6.23	23.36	28.06	67.53	37.19	29.12	11.58	24.94	26.21	14.76	19.97	19.84
Return on Capital	29.40	2.16	12.77	16.63	45.81	28.70	29.18	11.67	26.94	28.34	19.23	22.94	21.68
Income Taxes	15.83	1.25	6.88	8.95	40.39	20.78	17.87	2.75	13.88	14.60	9.91	11.82	11.28
Breakeven Oil Price	**149.23**	**33.42**	**74.21**	**84.89**	**197.55**	**130.68**	**107.23**	**47.49**	**81.77**	**82.57**	**57.39**	**68.74**	**68.79**
Quality Differential	2.08	(9.51)	0.53	2.64	7.61	7.35	13.97	7.57	2.50	3.45	12.93	6.29	8.08
Required Brent Price	**151.31**	**23.92**	**74.74**	**87.53**	**205.16**	**138.03**	**121.20**	**55.06**	**84.27**	**86.02**	**70.32**	**75.03**	**76.87**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.41	12.55	15.07	16.17	23.66	22.77	17.00	12.02	10.38	9.70	10.04	10.00	10.69
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	8.88	11.23	16.13	15.08	20.15	21.25	14.07	9.47	5.64	3.72	3.46	4.01	5.28
F&D Costs (1-Year)	22.38	11.50	64.30	51.72	124.95	47.55	46.02	21.10	50.41	42.06	24.01	33.76	36.72
Return on Capital	7.32	3.96	35.20	30.38	81.06	36.54	46.44	21.27	54.45	44.94	31.01	38.85	40.15
Income Taxes	3.94	2.29	18.96	16.36	71.48	26.46	28.45	5.01	28.05	23.15	15.97	20.01	20.89
Breakeven Oil Price	**54.93**	**41.54**	**149.66**	**129.71**	**321.31**	**154.57**	**151.98**	**68.87**	**148.92**	**123.58**	**84.50**	**106.63**	**113.74**
Quality Differential	2.08	(9.51)	0.53	2.64	7.61	7.35	13.97	7.57	2.50	3.45	12.93	6.29	8.08
Required Brent Price	**57.01**	**32.03**	**150.19**	**132.35**	**328.92**	**161.92**	**165.96**	**76.44**	**151.42**	**127.02**	**97.42**	**112.92**	**121.82**

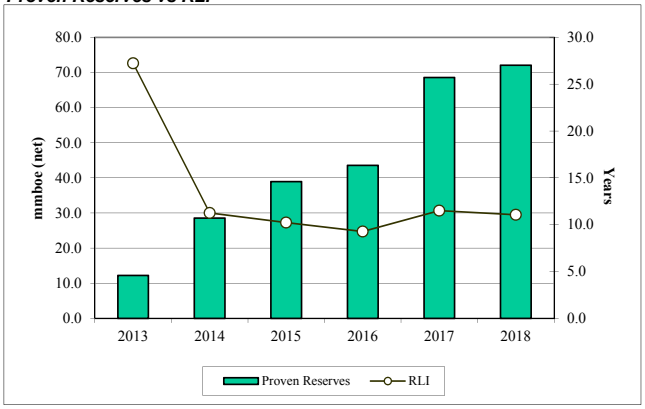
Source: BMO Capital Markets, Company Reports

Cardinal Energy (CJ - TSX) US$, net

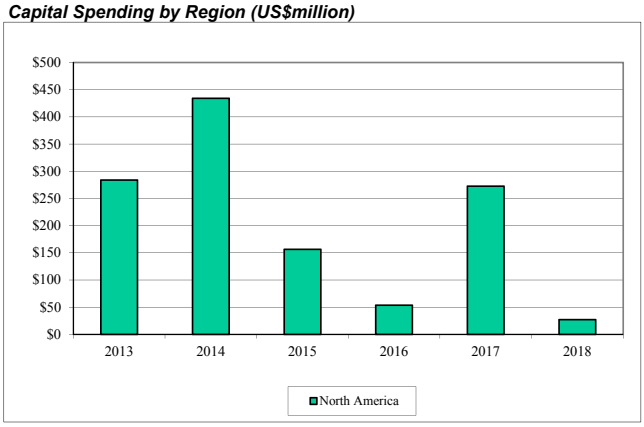
- Cardinal reported results from operations of $0.78/boe versus a loss of $0.22/boe in 2017.
- The company's one-year F&D costs were recorded at $2.43/boe, down from $8.76/boe last year. On a realized oil:gas basis, F&D costs decreased to $2.37/boe from $10.15/boe while the costs for PD reserves also decreased to $6.05/boe from $10.99/boe in 2017.
- Cardinal's 2018 operations suggest a required Brent breakeven oil price of $58.95/boe, while its PD cost assessment implies a Brent breakeven oil price of $66.38/boe.
- The company reported 2018 ROCE of 7.3% compared to a normalized ROCE of 0.2% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

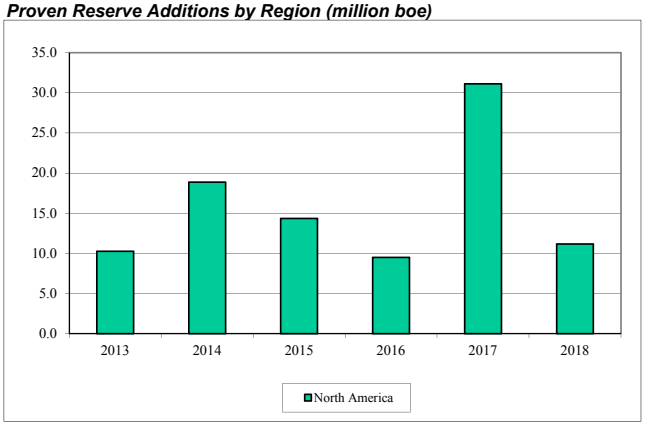
Proven Reserves vs RLI



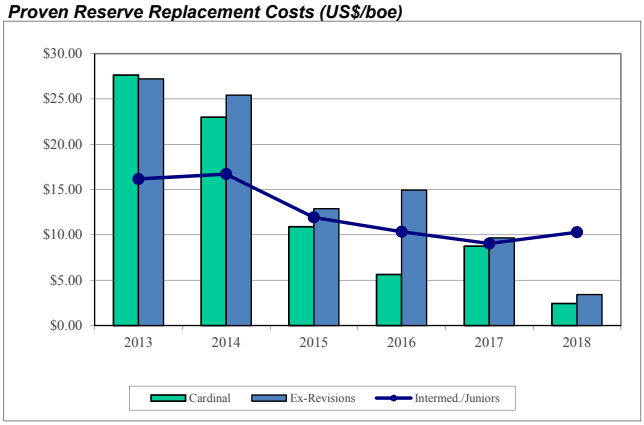
Capital Spending by Region (US$million)



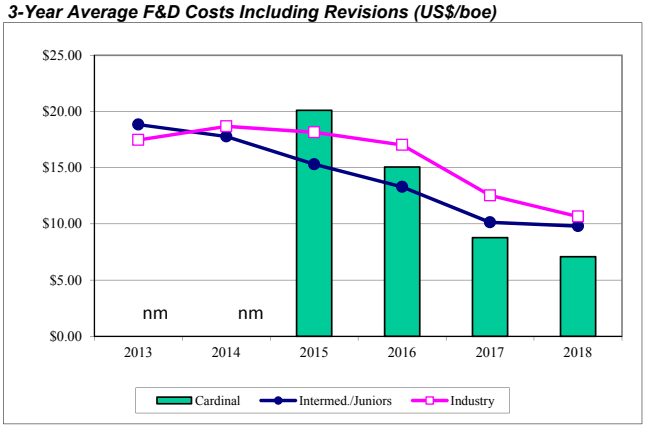
Proven Reserve Additions by Region (million boe)



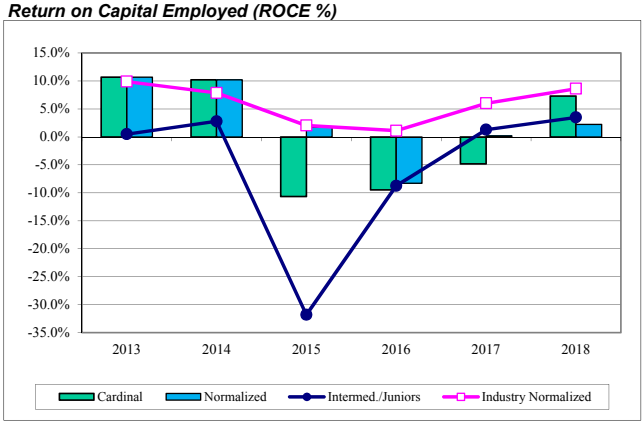
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



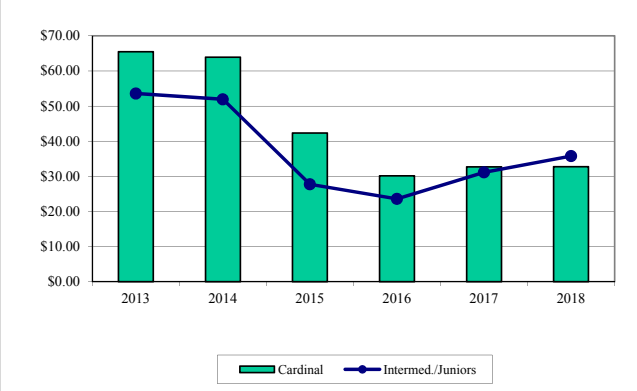
Source: BMO Capital Markets, Company Reports

Cardinal Energy (CJ - TSX)

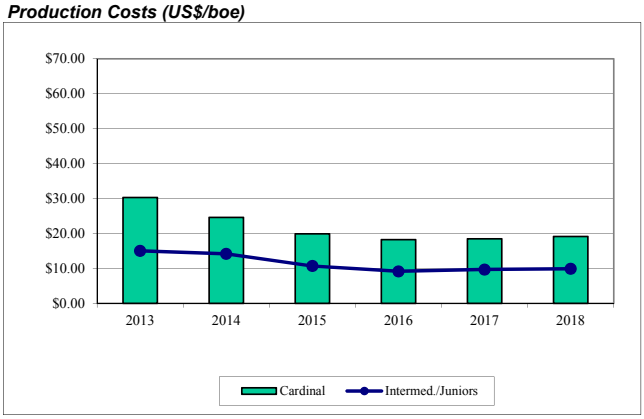
US$/boe, net

North America

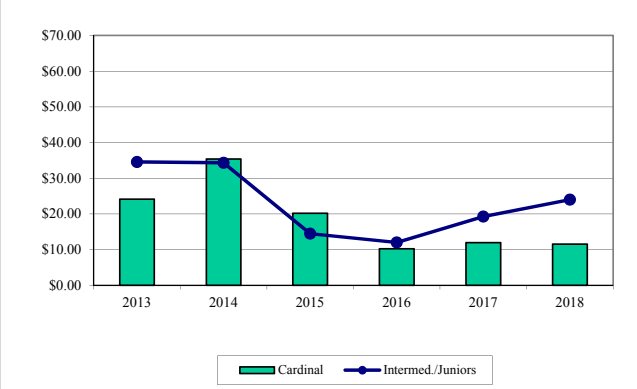
Upstream Net Revenue (US$/boe)



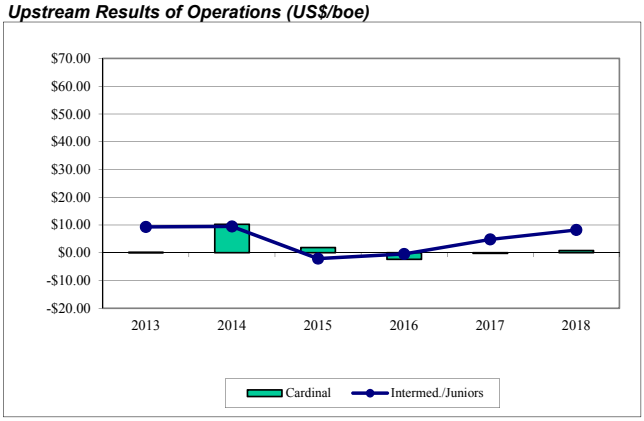
Production Costs (US$/boe)



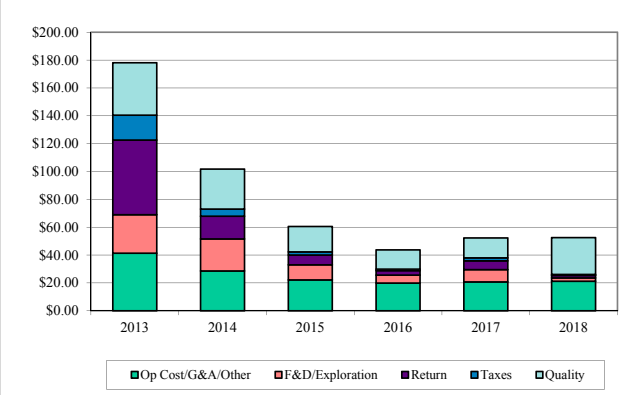
Upstream Operating Earnings (US$/boe)



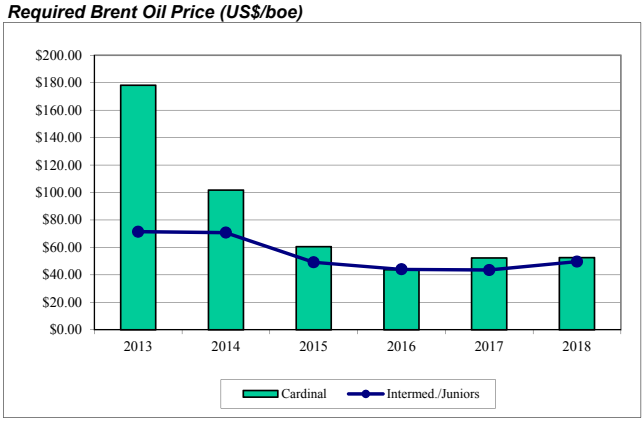
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Cardinal Energy (CJ - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	30	162	122	129	207	243
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	(2)	37	29	(33)	1	(5)
Total Revenue and Other Income	-	-	-	-	-	29	200	151	96	208	238
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	-	-	14	62	76	86	110	125
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	-	-	-	5	10	8	8	14	14
Depreciation, Depletion and Amortization	-	-	-	-	-	11	56	67	63	73	68
Interest, net	-	-	-	-	-	2	5	7	11	14	17
Other	-	-	-	-	-	(36)	3	105	17	56	(52)
Earnings Before Income Tax	-	-	-	-	-	34	64	(113)	(87)	(60)	66
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	-	-	-	-	-	(1)	15	(38)	(22)	(15)	20
Total Income Taxes	-	-	-	-	-	(1)	15	(38)	(22)	(15)	20
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	34	49	(75)	(66)	(44)	47
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	34	49	(75)	(66)	(44)	47
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	34	49	(75)	(66)	(44)	47

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	34	49	(75)	(66)	(44)	47
Charges and Credits Not Impacting Cash	-	-	-	-	-	10	71	30	41	58	88
Other	-	-	-	-	-	(35)	(34)	119	67	47	(74)
Cash Flow From Operations	-	-	-	-	-	9	85	73	43	60	61
Change in Working Capital / Other	-	-	-	-	-	(1)	(2)	(5)	3	(1)	8
Net Cash From Operating Activities	-	-	-	-	-	9	83	68	46	59	69
Total Capital Expenditures	-	-	-	-	-	(9)	(37)	(29)	(32)	(53)	(49)
Acquisitions, net	-	-	-	-	-	(223)	(397)	(123)	(22)	(220)	22
Other	-	-	-	-	-	(2)	4	3	1	(1)	(4)
Net Cash From Investing Activities	-	-	-	-	-	(235)	(430)	(149)	(53)	(274)	(31)
Net Change in Debt	-	-	-	-	-	(2)	35	72	(23)	122	(6)
Net Change in Common Stock	-	-	-	-	-	227	352	46	53	127	7
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	(26)	(36)	(21)	(31)	(36)
Other	-	-	-	-	-	1	(13)	(1)	(2)	(3)	(3)
Net Cash From Financing Activities	-	-	-	-	-	226	347	81	7	215	(38)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	-	0	(0)	(0)	(0)	0
Cash and Equivalents, Beginning of Year	-	-	-	-	-	-	-	0	(0)	(0)	(0)
Cash and Equivalents, End of Year	-	-	-	-	-	-	0	(0)	(0)	(0)	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cardinal Energy (CJ - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	7	56	39	26	46	30
Net Property, Plant and Equipment	-	-	-	-	-	384	771	645	602	793	814
Other Assets	-	-	-	-	-	-	-	71	87	107	87
Total Assets	-	-	-	-	-	392	827	755	715	946	931
Total Current Liabilities	-	-	-	-	-	8	27	25	50	62	29
Long-term Debt	-	-	-	-	-	9	43	108	81	207	200
Deferred Income Taxes	-	-	-	-	-	8	9	-	-	-	-
Other Liabilities and Deferred Credits	-	-	-	-	-	39	71	89	91	100	90
Total Liabilities	-	-	-	-	-	64	150	222	223	369	319
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	-	-	294	622	593	634	804	828
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	1	7	11	14	11	10
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	-	30	48	(73)	(159)	(238)	(227)
Other / Comprehensive Income (Loss)	-	-	-	-	-	2	1	2	2	1	1
Total Shareholders' Equity	-	-	-	-	-	327	677	533	492	578	612
Total Liabilities and Shareholders' Equity	-	-	-	-	-	392	827	755	715	947	931
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**10.7%**	**10.2%**	**-10.7%**	**-9.5%**	**-4.8%**	**7.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	-	-	$65.49	$63.94	$42.33	$30.16	$32.72	$32.75	$32.03	$37.14
Production Costs	-	-	-	-	-	$30.30	$24.62	$19.93	$18.24	$18.47	$19.14	$18.66	$19.51
Exploration	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	-	-	-	$23.97	$21.94	$17.69	$13.34	$12.24	$10.43	$11.85	$13.88
G&A / Other	-	-	-	-	-	$11.05	$3.97	$2.23	$1.70	$2.30	$2.09	$2.06	$2.29
Pre-tax Results of Operations	-	-	-	-	-	$0.17	$13.42	$2.48	-$3.12	-$0.29	$1.11	-$0.54	$1.45
Income Taxes	-	-	-	-	-	$0.04	$3.16	$0.62	-$0.77	-$0.07	$0.33	-$0.14	$0.37
Results of Operations	-	-	-	-	-	$0.13	$10.26	$1.86	-$2.35	-$0.22	$0.78	-$0.39	$1.08

Source: BMO Capital Markets, Company Reports

Cardinal Energy (CJ - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)						0.3	3.7	5.6	9.7	15.6	14.7	13.3	9.8
Liquids Production (b/d)						1,186	6,333	9,498	11,274	13,751	15,418	13,481	11,255
Total Production (boe/d)						1,230	6,945	10,430	12,884	16,344	17,864	15,697	12,893
% Gas Production						4%	9%	9%	12%	16%	14%	14%	13%
% Oil Production						96%	91%	91%	88%	84%	86%	86%	87%
Proven Reserves:													
Closing Gas Reserves (bcf)						9.4	11.3	22.4	27.4	55.5	48.2	43.7	33.0
Closing Oil Reserves (mmbbls)						10.7	26.7	35.2	39.0	59.3	64.0	54.1	54.1
Closing Total Proven Reserves (mmboe)						12.2	28.5	38.9	43.6	68.6	72.1	61.4	59.6
% Gas Reserves						13%	7%	10%	10%	13%	11%	12%	9%
% Oil Reserves						87%	93%	90%	90%	87%	89%	88%	91%
Proven Reserve Life Index						27.4	11.2	10.2	9.3	11.5	11.1	10.6	10.7
Proven Reserve Additions:													
Gas Additions (bcf)						9.5	3.0	12.8	8.9	33.2	-1.8	13.4	11.2
Oil Additions (mmbbls)						8.7	18.4	12.2	8.0	25.6	11.5	15.0	15.1
Total Additions (mmboe)						10.3	18.9	14.4	9.5	31.1	11.2	17.3	17.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions						0.8	0.7	0.5	1.7	3.3	6.3	11.3	12.5
Net Acquisitions						9.6	16.4	11.7	1.8	25.0	1.8	28.6	56.7
Revisions of Estimates						-0.2	1.8	2.2	5.9	2.9	3.2	12.1	16.1
Components as % of Total Additions:													
Extensions, Discoveries and Additions						7.9%	3.6%	3.2%	18.3%	10.5%	56.6%	65.7%	73.4%
Net Acquisitions						93.6%	87.0%	81.3%	19.3%	80.2%	16.3%	165.6%	333.4%
Revisions of Estimates						-1.5%	9.6%	15.5%	62.4%	9.4%	28.9%	69.9%	94.7%
Additions as % of Production:													
Gas						9780.2%	223.4%	625.4%	253.1%	584.2%	-34.4%	92.1%	62.4%
Oil						2007.1%	794.8%	352.7%	194.9%	510.0%	204.1%	101.9%	73.7%
Total						2286.9%	744.5%	377.0%	202.2%	521.8%	171.5%	100.5%	72.3%
Additions as % of Reserves:													
Gas						101.0%	26.5%	56.9%	32.6%	59.8%	-3.8%	30.7%	34.0%
Oil						81.5%	68.9%	34.7%	20.6%	43.2%	17.9%	27.8%	28.0%
Total						84.0%	66.1%	36.9%	21.8%	45.4%	15.5%	28.1%	28.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic						$2.6	$6.0	$5.9	$0.2	$3.1	$1.3	$4.6	$16.5
Exploration & Development						$6.5	$31.1	$23.3	$31.5	$49.8	$47.5	$128.8	$183.3
Net Acquisitions						$274.7	$396.9	$127.2	$21.7	$219.8	-$21.6	$219.9	$744.0
Total Expenditures						$283.8	$434.1	$156.4	$53.5	$272.6	$27.1	$353.2	$943.7
Expenditures as % of Total:													
Land & Seismic						0.9%	1.4%	3.8%	0.4%	1.1%	4.7%	1.3%	1.7%
Exploration & Development						2.3%	7.2%	14.9%	59.0%	18.3%	175.0%	36.5%	19.4%
Net Acquisitions						96.8%	91.4%	81.3%	40.6%	80.6%	-79.7%	62.2%	78.8%
Cashflow (US$million)						$9.3	$85.3	$73.1	$42.6	$60.2	$60.2	$163.0	$321.5
Cashflow (US$/boe)						$20.67	$33.65	$19.21	$9.06	$10.09	$9.24	$9.48	$13.66
Recycle Ratio						0.7x	1.5x	1.8x	1.6x	1.2x	3.8x	1.4x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)						$13.86	$14.90	$10.91	$4.14	$8.53	$5.10	$5.69	$6.99
Net Acquisition Costs						$28.59	$24.24	$10.89	$11.84	$8.81	-$13.29	$7.68	$13.12
All Sources (incl. revisions)						$27.65	$23.00	$10.90	$5.62	$8.76	$2.43	$6.79	$11.06
Exploration & Development (excl. revisions)						$11.16	$54.04	$63.50	$18.20	$16.16	$7.70	$11.76	$15.99
Net Acquisition Costs						$28.59	$24.24	$10.89	$11.84	$8.81	-$13.29	$7.68	$13.12
All Sources (excl. revisions)						$27.23	$25.44	$12.89	$14.94	$9.67	$3.41	$8.84	$13.64

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Cardinal Energy (CJ - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	-	30.30	24.62	19.93	18.24	18.47	19.14	18.66	19.51
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	11.05	3.97	2.23	1.70	2.30	2.09	2.06	2.29
F&D Costs (1-Year)	-	-	-	-	-	27.65	23.00	10.90	5.62	8.76	2.43	7.09	11.10
Return on Capital	-	-	-	-	-	53.56	16.35	6.97	3.26	6.36	1.68	4.73	7.39
Income Taxes	-	-	-	-	-	17.85	5.04	2.32	1.06	2.16	0.71	1.71	2.55
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**140.41**	**72.97**	**42.35**	**29.88**	**38.05**	**26.04**	**34.24**	**42.83**
Quality Differential	-	-	-	-	-	37.73	28.83	18.16	13.88	14.29	26.50	18.22	20.33

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	-	31.14	26.10	21.16	19.86	21.05	21.73	20.97	21.58
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	11.36	4.21	2.37	1.85	2.62	2.37	2.31	2.53
F&D Costs (1-Year)	-	-	-	-	-	31.27	23.40	12.05	6.27	10.15	2.37	7.83	12.04
Return on Capital	-	-	-	-	-	55.28	16.92	7.63	3.66	7.47	1.69	5.33	8.21
Income Taxes	-	-	-	-	-	18.43	5.22	2.54	1.19	2.54	0.71	1.92	2.83
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**147.47**	**75.84**	**45.75**	**32.84**	**43.84**	**28.86**	**38.36**	**47.19**
Quality Differential	-	-	-	-	-	38.78	30.56	19.27	15.12	16.29	30.09	20.50	22.27
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**186.25**	**106.40**	**65.02**	**47.96**	**60.13**	**58.95**	**58.86**	**69.46**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	-	31.14	26.10	21.16	19.86	21.05	21.73	20.97	21.58
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	11.36	4.21	2.37	1.85	2.62	2.37	2.31	2.53
F&D Costs (1-Year)	-	-	-	-	-	26.77	24.26	11.88	6.64	10.99	6.05	9.77	11.96
Return on Capital	-	-	-	-	-	47.66	17.54	7.53	3.91	8.17	4.33	6.65	8.15
Income Taxes	-	-	-	-	-	15.89	5.41	2.51	1.28	2.78	1.82	2.40	2.81
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**132.82**	**77.51**	**45.44**	**33.54**	**45.61**	**36.29**	**42.10**	**47.04**
Quality Differential	-	-	-	-	-	38.78	30.56	19.27	15.12	16.29	30.09	20.50	22.27
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**171.60**	**108.08**	**64.71**	**48.66**	**61.90**	**66.38**	**62.60**	**69.30**

Source: BMO Capital Markets, Company Reports

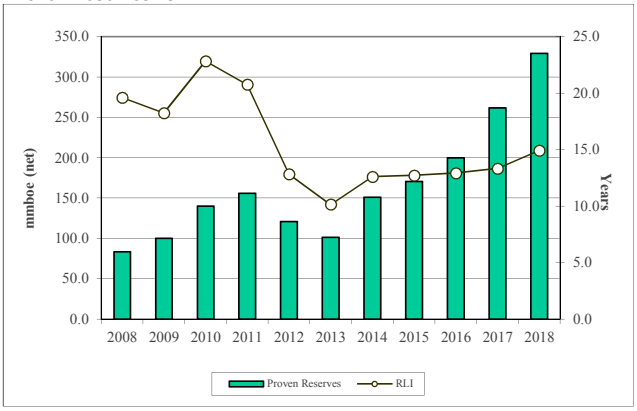
See pages F1 to F4 for analyst coverage.

Carrizo Oil & Gas Inc. (CRZO - NASDAQ)

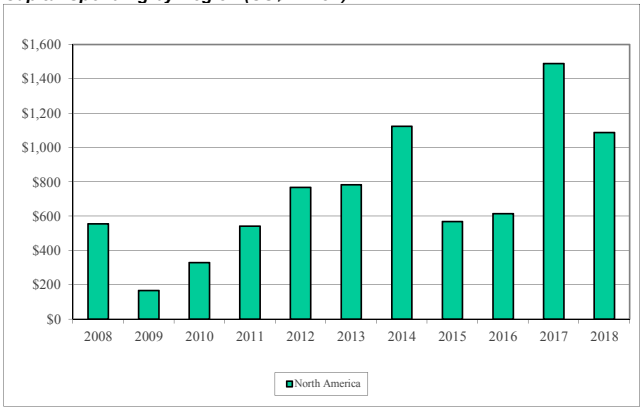
US$, net

- Carrizo reported results of operations of $14.23/boe in 2018 versus results of $7.98/boe last year.
- One-year F&D costs decreased slightly to $10.34/boe compared to $13.45/boe in 2017. On a realized oil:gas price ratio basis, F&D costs decreased to $13.89/boe from $17.54/boe, while the costs for PD reserves decreased to $23.39/boe versus $29.87/boe the previous year.
- Carrizo's 2018 operations imply a required Brent breakeven oil price of $64.07/boe on total proved reserves, while its PD costs suggest a Brent breakeven oil price of $86.49/boe.
- The company reported ROCE of 15.4% in 2018 versus 6.7% in 2017.

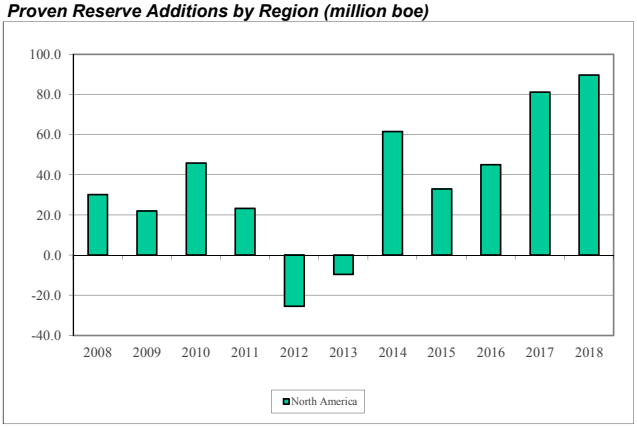
Proven Reserves vs RLI



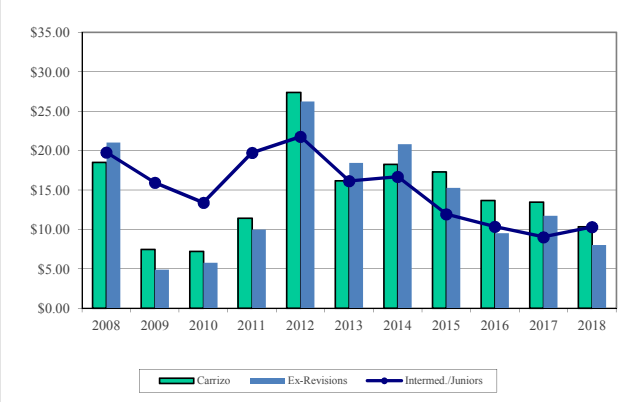
Capital Spending by Region (US$million)



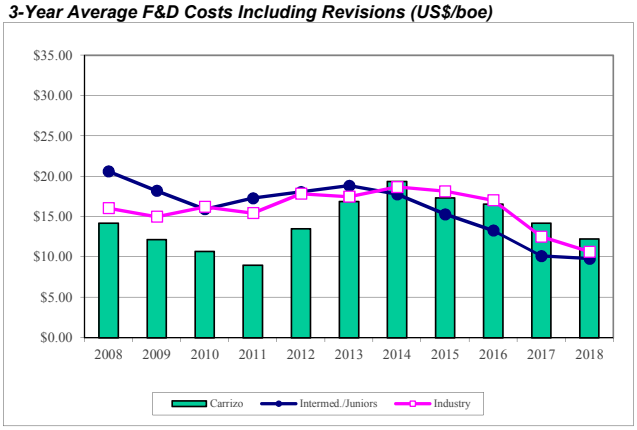
Proven Reserve Additions by Region (million boe)



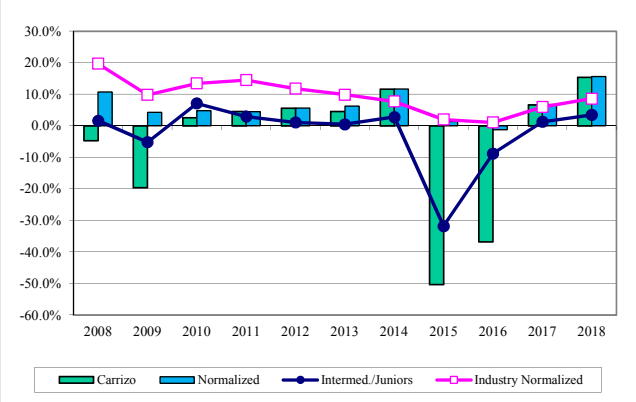
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



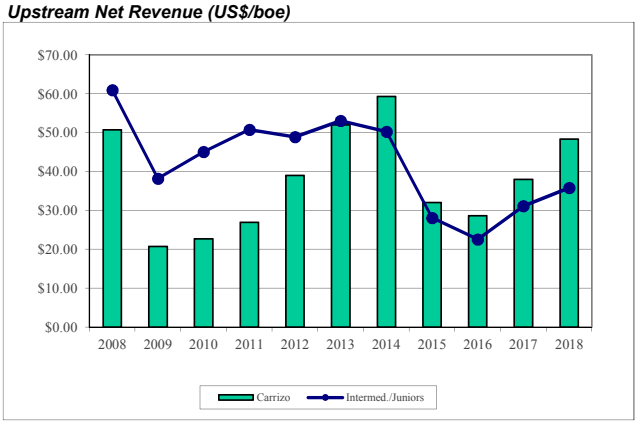
Source: BMO Capital Markets, Company Reports

Carrizo Oil & Gas Inc. (CRZO - NASDAQ)

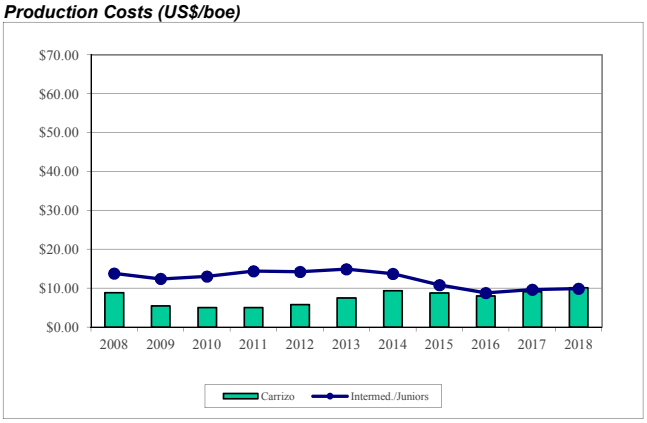
US$/boe, net

North America

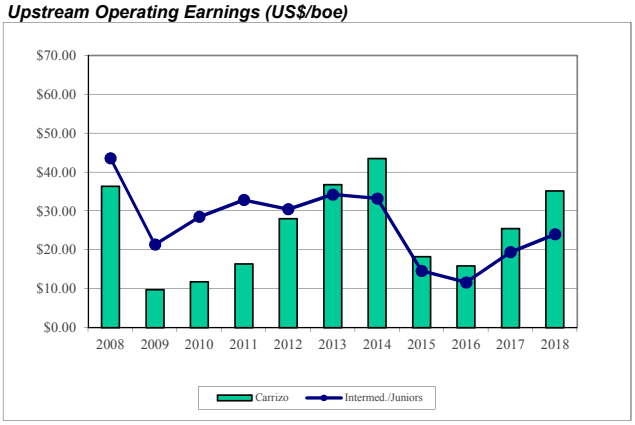
Upstream Net Revenue (US$/boe)



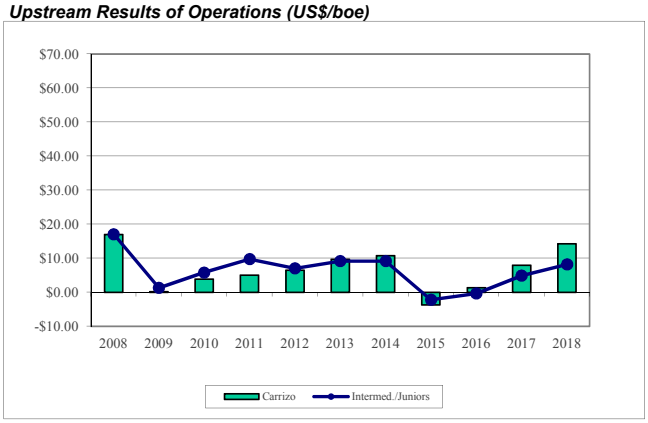
Production Costs (US$/boe)



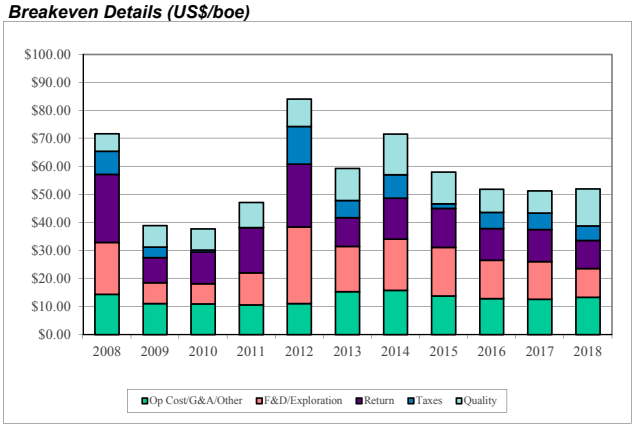
Upstream Operating Earnings (US$/boe)



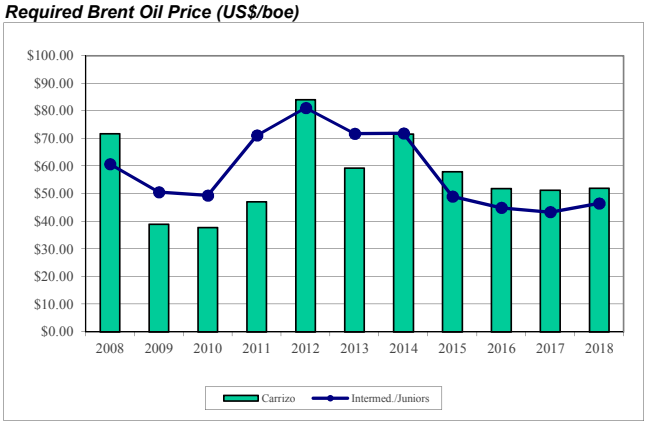
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Carrizo Oil & Gas Inc. (CRZO - NASDAQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	217	114	139	202	368	520	710	429	444	746	1,066
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	217	114	139	202	368	520	710	429	444	746	1,066
Crude Oil and Product Purchases	7	1	1	-	-	-	-	-	-		
Production and Transportation Expenses	38	30	31	38	55	75	112	117	123	180	223
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	23	30	36	42	49	77	77	67	75	66	69
Depreciation, Depletion and Amortization	58	52	47	85	166	214	317	300	214	263	300
Interest, net	9	38	23	29	48	55	53	69	79	81	62
Other	147	280	(14)	(46)	(32)	64	(200)	1,175	627	65	3
Earnings Before Income Tax	(66)	(318)	16	55	82	34.761	350	(1,299)	(675)	91	410
Income Taxes:											
Current Income Taxes	(14)	-	4	1	1	1.969	-	-	-	0	1
Future Income Taxes	(6)	(113)	1	17	30	10.934	128	(141)	-	4	4
Total Income Taxes	(21)	(113)	6	18	31	12.903	128	(141)	-	4	5
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(45)	(205)	10	37	51	21.858	222	(1,158)	(675)	87	404
Discontinued Operations/Extraordinary Items	-	-	-	-	4.310	21.825	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(45)	(205)	10	37	55	44	222	(1,158)	(675)	87	404
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	9	28
Net Earnings to Common Shareholders	(45)	(205)	10	37	55	44	222	(1,158)	(675)	78	376

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(45)	(205)	10	37	51	22	222	(1,158)	(675)	87	404
Charges and Credits Not Impacting Cash	216	278	51	102	196	225	445	1,384	791	266	304
Other	(26)	60	45	8	30	114	(183)	158	212	91	(73)
Cash Flow From Operations	145	132	106	146	277	360	485	384	327	445	635
Change in Working Capital / Other	4	1	(11)	8	(25)	6	17	(6)	(55)	(22)	18
Net Cash From Operating Activities	149	133	94	154	252	367	502	377	273	423	654
Total Capital Expenditures	(571)	(183)	(348)	(556)	(740)	(788)	(861)	(676)	(481)	(655)	(969)
Acquisitions, net	3	49	54	167	342	238	(80)	6	(138)	(498)	177
Other	13	(28)	23	103	(109)	164	(7)	(6)	(1)	(7)	(4)
Net Cash From Investing Activities	(555)	(162)	(270)	(286)	(507)	(385)	(949)	(676)	(620)	(1,159)	(796)
Net Change in Debt	279	32	(1)	168	245	(69)	302	23	87	292	(9)
Net Change in Common Stock	135	-	189	-	-	190	-	470	224	222	164
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	236	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	(8)	(18)
Other	(11)	(4)	(11)	(13)	35	3	(1)	(163)	(2)	(2)	(1)
Net Cash From Financing Activities	404	28	176	156	280	123	300	331	308	742	135
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(3)	(1)	1	24	25	105	(147)	32	(39)	5	(7.258)
Cash and Equivalents, Beginning of Year	8	5	4	4	28	53	157	11	43	4	9.540
Cash and Equivalents, End of Year	5	4	4	28	53	157	11	43	4	10	2.282

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Carrizo Oil & Gas Inc. (CRZO - NASDAQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	56	35	60	120	209	280	279	232	73	123	150
Net Property, Plant and Equipment	1,022	734	983	1,311	1,488	1,794	2,629	1,717	1,546	2,636	3,019
Other Assets	30	94	101	97	188	37	74	78	8	20	16
Total Assets	1,108	863	1,144	1,528	1,884	2,111	2,981	2,027	1,626	2,778	3,185
Total Current Liabilities	114	83	119	271	299	323	424	285	212	373	322
Long-term Debt	533	520	558	729	968	900	1,351	1,256	1,325	1,629	1,634
Deferred Income Taxes	27	-	-	-	-	17	77	-	-	4	8
Other Liabilities and Deferred Credits	7	13	10	17	32	29	25	42	65	187	66
Total Liabilities	681	615	687	1,018	1,299	1,269	1,878	1,583	1,603	2,193	2,030
Minority Interests	-	-	-							-	-
Common Shares	0	0	0	0	0	0	0	1	1	1	1
Contributed Surplus (Paid-in Capital)	381	432	631	647	667	880	915	1,411	1,666	1,926	2,132
Preferred Stock	-	-	-	-	-	-	-	-	-	214	174
Retained Earnings	47	(185)	(175)	(138)	(82)	(39)	188	(968)	(1,643)	(1,556)	(1,152)
Other / Comprehensive Income (Loss)	(1)	0	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	427	248	457	510	585	842	1,103	444	23	585	1,155
Total Liabilities and Shareholders' Equity	1,108	863	1,144	1,528	1,884	2,111	2,981	2,027	1,626	2,778	3,185
Return on Capital Employed (ROCE)	**-4.7%**	**-19.7%**	**2.6%**	**4.6%**	**5.6%**	**4.6%**	**11.7%**	**-50.4%**	**-36.8%**	**6.7%**	**15.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$50.73	$20.74	$22.73	$26.92	$39.02	$52.02	$59.30	$32.02	$28.67	$37.98	$48.37	$39.46	$41.13
Production Costs	$8.87	$5.49	$5.06	$5.01	$5.81	$7.53	$9.36	$8.73	$7.97	$9.15	$10.10	$9.20	$9.14
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$13.65	$9.46	$7.67	$11.27	$17.55	$21.38	$26.50	$22.39	$13.83	$13.37	$13.59	$13.58	$16.88
G&A/Other	$5.48	$5.48	$5.85	$5.56	$5.16	$7.75	$6.43	$5.02	$4.85	$3.37	$3.11	$3.67	$4.29
Pre-tax Earnings	$22.72	$0.32	$4.16	$5.08	$10.49	$15.35	$17.00	-$4.11	$2.03	$12.09	$21.56	$13.02	$10.81
Income Taxes	$5.76	$0.09	$0.26	$0.01	$3.96	$5.70	$6.21	-$0.45	$0.69	$4.11	$7.33	$4.43	$3.89
Results of Operations	$16.97	$0.22	$3.90	$5.07	$6.54	$9.66	$10.79	-$3.66	$1.34	$7.98	$14.23	$8.59	$6.92

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Carrizo Oil & Gas Inc. (CRZO - NASDAQ)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	64.5	82.1	93.4	106.8	103.0	86.1	68.2	59.8	70.1	78.0	67.5	71.9	68.7
Liquids Production (b/d)	951	1,378	1,238	2,770	8,677	13,047	21,455	26,759	30,715	40,803	49,132	40,216	33,773
Total Production (boe/d)	11,703	15,067	16,807	20,574	25,851	27,395	32,814	36,719	42,393	53,804	60,382	52,193	45,222
% Gas Production	92%	91%	93%	87%	66%	52%	35%	27%	28%	24%	19%	23%	25%
% Oil Production	8%	9%	7%	13%	34%	48%	65%	73%	72%	76%	81%	77%	75%
Proven Reserves:													
Closing Gas Reserves (bcf)	392.7	513.0	669.9	727.7	428.3	188.0	221.0	244.9	287.4	310.5	483.1	360.3	309.4
Closing Oil Reserves (mmbbls)	18.3	14.8	28.5	34.7	49.7	70.2	114.2	129.8	152.3	210.0	248.9	203.7	171.0
Closing Total Proven Reserves (mmboe)	83.8	100.3	140.1	155.9	121.1	101.5	151.1	170.6	200.2	261.7	329.4	263.7	222.6
% Gas Reserves	78%	85%	80%	78%	59%	31%	24%	24%	24%	20%	24%	23%	23%
% Oil Reserves	22%	15%	20%	22%	41%	69%	76%	76%	76%	80%	76%	77%	77%
Proven Reserve Life Index	19.6	18.2	22.8	20.8	12.8	10.2	12.6	12.7	12.9	13.3	14.9	13.7	13.3
Proven Reserve Additions:													
Gas Additions (bcf)	167.9	150.3	190.9	96.8	-261.7	-209.0	57.9	45.7	68.1	51.5	197.2	316.8	420.5
Oil Additions (mmbbls)	2.1	(3.0)	14.1	7.2	18.2	25.3	51.9	25.4	33.7	72.6	56.8	163.1	240.3
Total Additions (mmboe)	30.1	22.0	45.9	23.3	-25.4	-9.6	61.5	33.0	45.0	81.2	89.7	215.9	310.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	26.5	34.3	57.1	54.3	29.3	42.5	38.5	37.3	58.6	80.8	131.0	270.3	346.2
Net Acquisitions	0.0	(0.4)	0.0	-24.1	-53.5	-58.1	15.5	0.0	6.1	16.6	-11.0	11.7	27.3
Revisions of Estimates	3.6	(11.8)	(11.1)	(6.9)	(1.2)	6.1	7.5	(4.3)	(19.7)	(16.1)	(30.4)	(66.2)	(63.0)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	87.9%	155.5%	124.2%	232.8%	-115.3%	-444.2%	62.6%	113.1%	130.1%	99.5%	146.1%	125.2%	111.5%
Net Acquisitions	0.0%	-2.0%	0.0%	-103.4%	210.5%	607.5%	25.2%	0.0%	13.7%	20.4%	-12.2%	5.4%	8.8%
Revisions of Estimates	12.1%	-53.5%	-24.2%	-29.4%	4.8%	-63.3%	12.1%	-13.1%	-43.8%	-19.9%	-33.8%	-30.7%	-20.3%
Additions as % of Production:													
Gas	712.8%	501.3%	559.9%	248.3%	-695.9%	-665.0%	232.9%	209.7%	266.2%	180.9%	800.5%	402.6%	335.4%
Oil	612.1%	-596.8%	3124.3%	711.9%	574.9%	530.4%	662.2%	259.6%	300.2%	487.5%	316.8%	370.3%	389.9%
Total	704.6%	400.9%	748.9%	310.7%	-269.4%	-95.7%	513.6%	246.1%	290.8%	413.4%	407.0%	377.7%	376.1%
Additions as % of Reserves:													
Gas	42.7%	29.3%	28.5%	13.3%	-61.1%	-111.2%	26.2%	18.7%	23.7%	16.6%	40.8%	87.9%	135.9%
Oil	11.6%	-20.3%	49.6%	20.8%	36.6%	36.0%	45.4%	19.5%	22.1%	34.6%	22.8%	80.1%	140.5%
Total	35.9%	22.0%	32.8%	15.0%	-21.0%	-9.4%	40.7%	19.3%	22.5%	31.0%	27.2%	81.9%	139.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$235.4	$77.3	$139.9	$374.4	$557.5	$106.3	$195.0	$117.2	$37.5	$91.1	$48.6	$177.2	$489.4
Development	$49.6	$55.3	$63.0	$58.5	$61.0	$423.9	$530.3	$389.4	$374.1	$570.0	$809.6	$1,753.8	$2,673.4
Net Acquisitions	$271.6	$35.2	$127.6	$109.2	$150.5	$254.1	$398.7	$63.4	$204.2	$828.4	$229.6	$1,262.2	$1,724.3
Total Expenditures	$556.6	$167.8	$330.4	$542.1	$769.0	$784.3	$1,123.9	$570.1	$615.8	$1,489.4	$1,087.8	$3,193.1	$4,887.0
Expenditures as % of Total:													
Exploration	42.3%	46.0%	42.3%	69.1%	72.5%	13.6%	17.3%	20.6%	6.1%	6.1%	4.5%	5.5%	10.0%
Development	8.9%	32.9%	19.1%	10.8%	7.9%	54.0%	47.2%	68.3%	60.8%	38.3%	74.4%	54.9%	54.7%
Net Acquisitions	48.8%	21.0%	38.6%	20.1%	19.6%	32.4%	35.5%	11.1%	33.2%	55.6%	21.1%	39.5%	35.3%
Cashflow (US$million)	$130.8	$53.2	$71.0	$122.6	$227.3	$310.4	$446.6	$251.0	$234.6	$419.3	$613.2	$1,267.1	$1,964.7
Cashflow (US$/boe)	$30.62	$9.68	$11.57	$16.33	$24.09	$31.04	$37.29	$18.73	$15.16	$21.35	$27.82	$22.17	$23.81
Recycle Ratio	1.7x	1.3x	1.6x	1.4x	0.9x	1.9x	2.0x	1.1x	1.1x	1.6x	2.7x	1.5x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$9.47	$5.89	$4.41	$9.12	$22.03	$10.92	$15.77	$15.36	$10.59	$10.23	$8.53	$9.46	$11.17
Net Acquisition Costs	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	$18.49	$7.46	$7.19	$11.42	$27.38	$16.15	$18.27	$17.28	$13.68	$13.45	$10.34	$14.79	$15.75
Exploration & Development (excl. revisions)	$10.77	$3.87	$3.55	$7.97	$21.11	$12.47	$18.82	$13.58	$7.03	$8.19	$6.55	$7.14	$9.14
Net Acquisition Costs	na	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	$21.04	$4.89	$5.79	$9.98	$26.24	$18.45	$20.80	$15.28	$9.52	$11.74	$8.03	$11.32	$13.09

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Carrizo Oil & Gas Inc. (CRZO - NASDAQ)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	8.87	5.49	5.06	5.01	5.81	7.53	9.36	8.73	7.97	9.15	10.10	9.20	9.14
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	5.48	5.48	5.85	5.56	5.16	7.75	6.43	5.02	4.85	3.37	3.11	3.67	4.29
F&D Costs (1-Year)	18.49	7.46	7.19	11.42	27.38	16.15	18.27	17.28	13.68	13.45	10.34	12.24	13.75
Return on Capital	24.31	9.04	11.30	16.10	22.39	10.29	14.56	13.96	11.28	11.46	10.00	10.78	11.70
Income Taxes	8.25	3.75	0.74	0.04	13.54	6.08	8.38	1.70	5.81	5.90	5.15	5.55	6.58
Breakeven Oil Price	**65.40**	**31.22**	**30.14**	**38.14**	**74.29**	**47.80**	**57.01**	**46.69**	**43.59**	**43.33**	**38.71**	**41.44**	**45.46**
Quality Differential	6.30	7.69	7.59	8.92	9.75	11.49	14.54	11.28	8.24	7.95	13.25	9.82	11.05
Required Brent Price	**71.70**	**38.91**	**37.74**	**47.06**	**84.03**	**59.29**	**71.55**	**57.97**	**51.83**	**51.28**	**51.97**	**51.26**	**56.52**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.31	14.16	15.82	16.76	14.12	13.46	12.82	10.99	9.93	11.01	11.74	11.02	11.25
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	10.70	14.13	18.31	18.61	12.55	13.84	8.80	6.32	6.04	4.06	3.62	4.40	5.28
F&D Costs (1-Year)	36.50	31.56	14.64	23.37	37.62	22.99	20.81	20.96	16.70	17.54	13.89	15.96	17.37
Return on Capital	56.28	42.56	31.00	42.23	36.28	19.77	18.70	17.75	14.19	15.58	12.82	14.04	15.27
Income Taxes	19.10	17.63	2.03	0.11	21.94	11.67	10.76	2.16	7.31	8.02	6.60	7.23	8.59
Breakeven Oil Price	**139.89**	**120.03**	**81.79**	**101.09**	**122.52**	**81.73**	**71.90**	**58.18**	**54.16**	**56.21**	**48.66**	**52.65**	**57.77**
Quality Differential	12.29	19.83	23.76	29.82	23.69	20.52	19.90	14.21	10.27	9.57	15.41	11.75	13.87
Required Brent Price	**152.18**	**139.86**	**105.55**	**130.91**	**146.21**	**102.25**	**91.80**	**72.39**	**64.43**	**65.78**	**64.07**	**64.40**	**71.64**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.31	14.16	15.82	16.76	14.12	13.46	12.82	10.99	9.93	11.01	11.74	11.02	11.25
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	10.70	14.13	18.31	18.61	12.55	13.84	8.80	6.32	6.04	4.06	3.62	4.40	5.28
F&D Costs (1-Year)	51.33	31.06	61.60	42.03	55.44	62.16	37.76	27.73	25.49	29.87	23.39	26.49	28.85
Return on Capital	75.26	40.93	139.40	76.83	53.32	53.36	33.95	23.22	21.77	26.44	21.35	23.42	25.30
Income Taxes	25.53	16.95	9.11	0.21	32.25	31.50	19.54	2.82	11.22	13.62	11.00	12.06	14.23
Breakeven Oil Price	**180.14**	**117.23**	**244.24**	**154.44**	**167.68**	**174.31**	**112.87**	**71.08**	**74.45**	**85.00**	**71.09**	**77.38**	**84.91**
Quality Differential	12.29	19.83	23.76	29.82	23.69	20.52	19.90	14.21	10.27	9.57	15.41	11.75	13.87
Required Brent Price	**192.43**	**137.06**	**268.00**	**184.27**	**191.37**	**194.83**	**132.77**	**85.29**	**84.72**	**94.57**	**86.49**	**89.13**	**98.78**

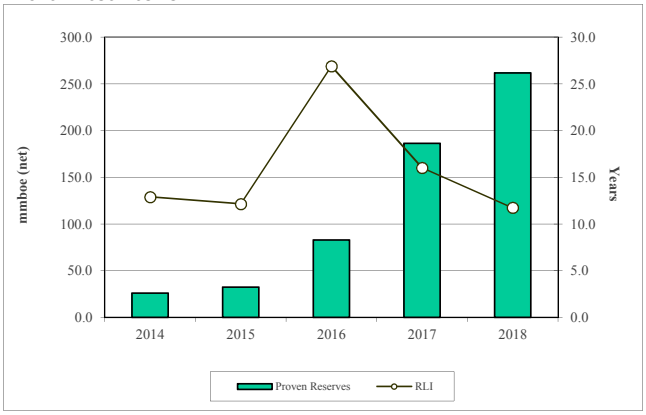
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

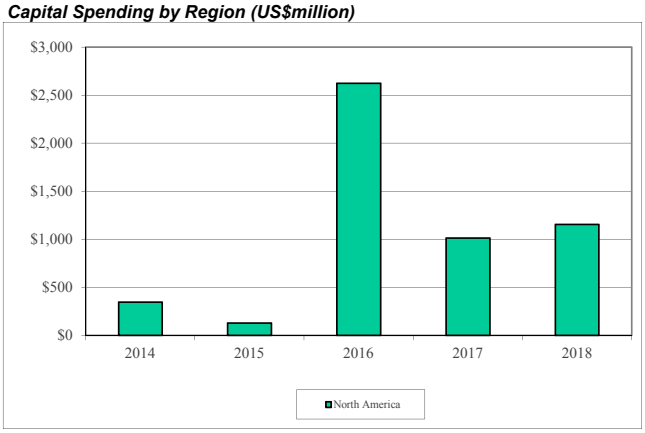
Centennial Resource Development (CDEV - NASDAQ) US$, net

- Centennial reported results of operations of $12.52/boe versus $9.15/boe in 2017.
- One-year F&D costs rose to $11.61/boe in 2018 from $8.75/boe last year. On a realized oil:gas price ratio basis, F&D costs came in at $13.52/boe while costs for PD reserves were recorded at $21.60/boe.
- Centennial's 2018 operations imply a required Brent breakeven oil price of $60.61/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a breakeven of $76.09/boe.
- The company reported return on capital of 6.2% in 2018, up from 2.9% in 2017.

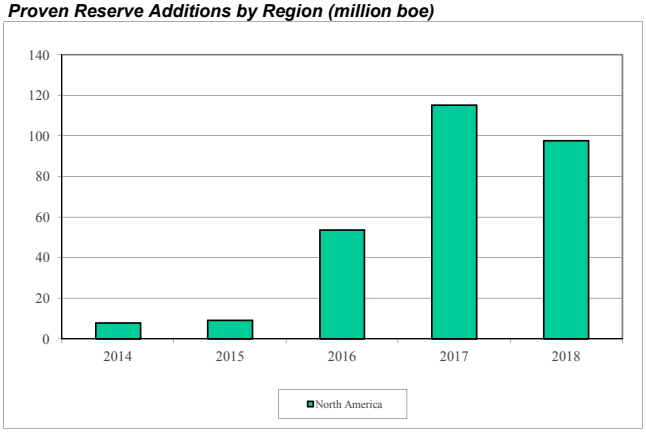
Proven Reserves vs RLI



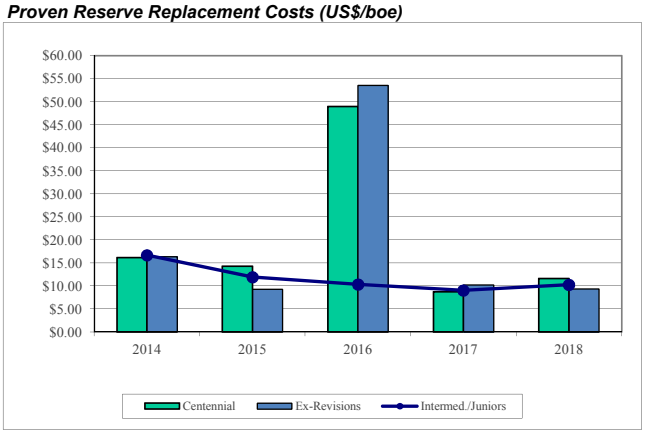
Capital Spending by Region (US$million)



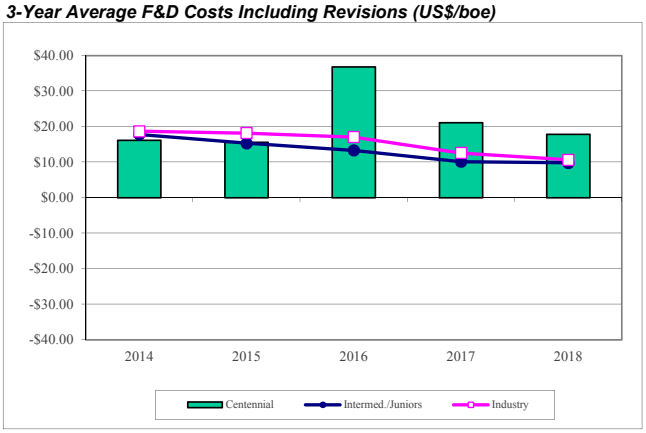
Proven Reserve Additions by Region (million boe)



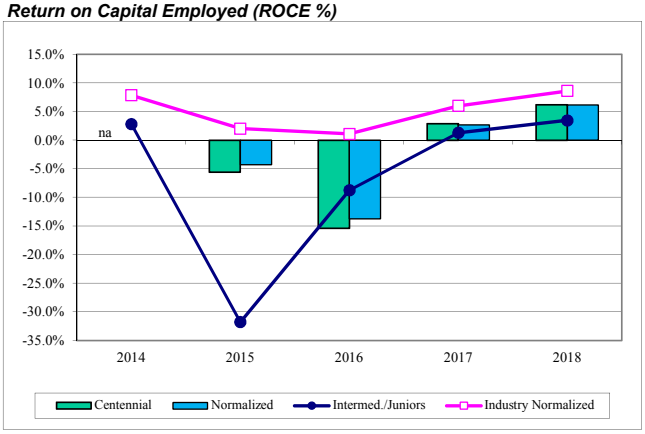
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)

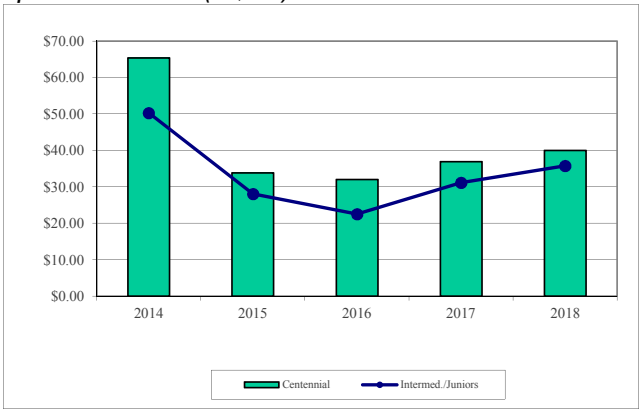


Source: BMO Capital Markets, Company Reports

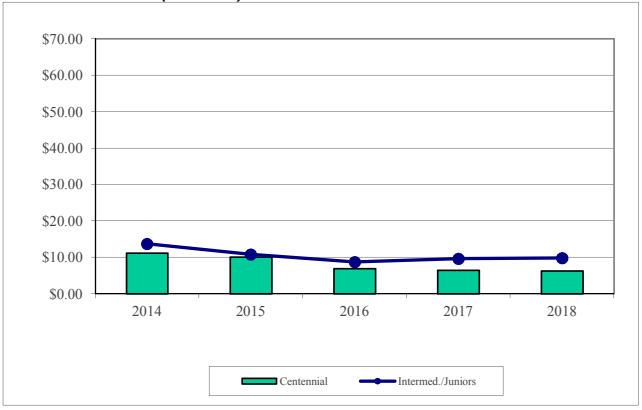
Centennial Resource Development (CDEV - NASDAQ) US$/boe, net

North America

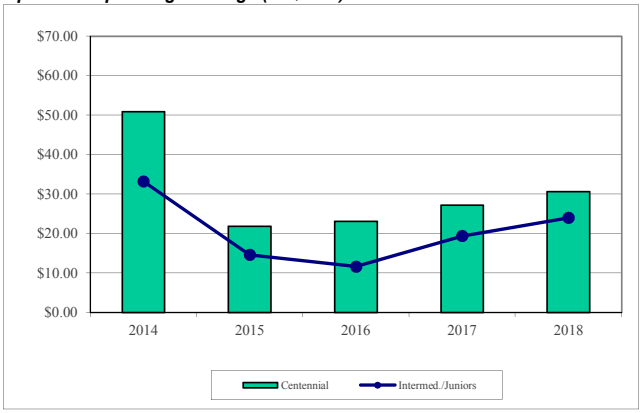
Upstream Net Revenue (US$/boe)



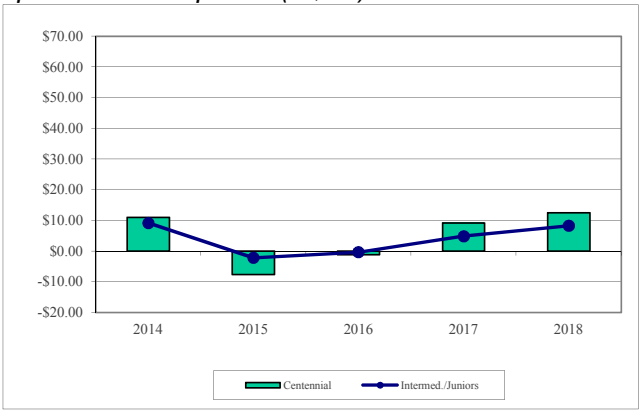
Production Costs (US$/boe)



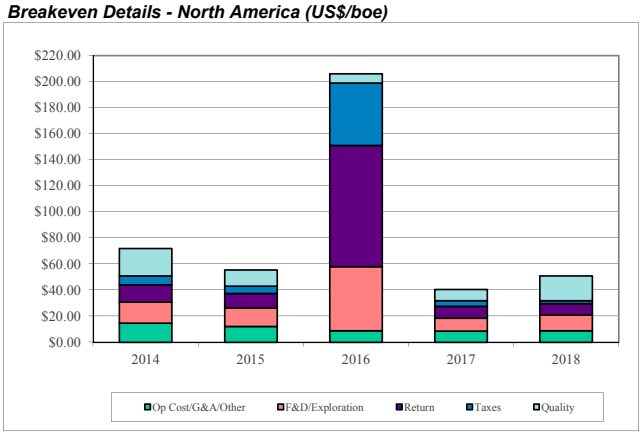
Upstream Operating Earnings (US$/boe)



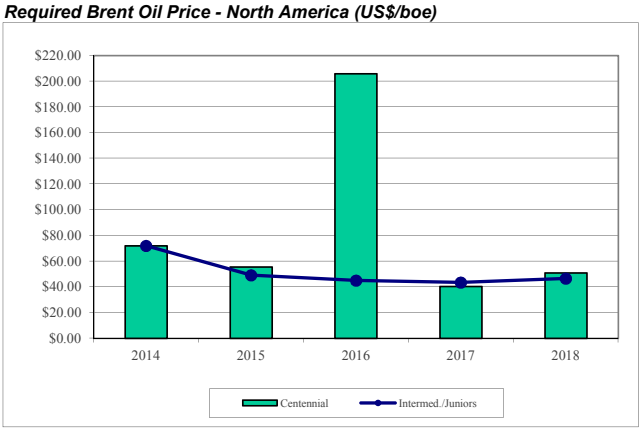
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Centennial Resource Development (CDEV - NASDAQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties							132	90	99	430	891
Midstream / Downstream Revenue											
Other											
Total Revenue and Other Income	-	-	-	-	-	-	132	90	99	430	891
Crude Oil and Product Purchases							-				
Production and Transportation Expenses							29	32	27	99	197
Marketing Expenses							-	-	-	-	-
Exploration / Dry Hole Costs							-	0	1	14	10
General and Administrative							32	14	39	50	63
Depreciation, Depletion and Amortization							69	90	78	162	326
Interest, net							2	6	6	6	26
Other							(20)	(13)	176	(14)	(5)
Earnings Before Income Tax	-	-	-	-	-	-	19	(39)	(228)	113	272
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes							2	(1)	(0)	30	59
Total Income Taxes							2	(1)	(0)	30	59
Minority Interest	-	-	-	-	-	-	0	-	1	(8)	(13)
Earnings From Continuing Operations	-	-	-	-	-	-	18	(38)	(227)	76	200
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	-	18	(38)	(227)	76	200
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	-	18	(38)	(227)	76	200

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	-	18	(38)	(227)	76	200
Charges and Credits Not Impacting Cash	-	-	-	-	-	-	70	89	78	197	386
Other				-	-	-	(3)	22	209	8	51
Cash Flow From Operations	-	-	-	-	-	-	85	73	60	281	638
Change in Working Capital / Other	-	-	-	-	-	-	12	(4)	2	(21)	32
Net Cash From Operating Activities	-	-	-	-	-	-	97	69	61	260	670
Upstream Spending							(298)	(199)	(70)	(566)	(998)
Midstream / Downstream Spending											
Acquisitions, net							144	1	(1,781)	(418)	(70)
Other						-	(9)	-	-	(8)	-
Net Cash From Investing Activities	-	-	-	-	-	-	(163)	(199)	(1,851)	(992)	(1,069)
Net Change in Debt							65	9	-	391	295
Net Change in Common Stock							60	111	1,541	333	-
Net Change in Preferred Stock							-	-	379		
Cash Dividends Paid							(3)	-	-	-	-
Other	-	-	-	-	-	-	(85)	(2)	2	0	(1)
Net Cash From Financing Activities	-	-	-	-	-	-	37	119	1,922	724	294
Effect of Exchange Rate on Cash	-	-	-	-						-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	-	(29)	(11)	132	(8)	(104)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	-	42	13	2	134	126
Cash and Equivalents, End of Year	-	-	-	-	-	-	13	2	134	126	21

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Centennial Resource Development (CDEV - NASDAQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	-	-	34	151	203	130
Net Property, Plant and Equipment	-	-	-	-	-	-	-	579	2,499	3,386	4,087
Other Assets								3	1	28	43
Total Assets	-	-	-	-	-	-	-	616	2,652	3,617	4,260
Total Current Liabilities								22	91	200	248
Long-term Debt								139	-	391	692
Deferred Income Taxes								-	-	10	62
Other Liabilities and Deferred Credits	-	-	-	-	-	-	-	5	7	12	15
Total Liabilities	-	-	-	-	-	-	-	165	99	613	1,016
Minority Interests	-	-						-	198	170	144
Common Shares								-	0	0	0
Contributed Surplus (Paid-in Capital)								-	2,364	2,768	2,834
Preferred Stock								-	-	-	-
Retained Earnings								-	(9)	67	267
Other / Comprehensive Income (Loss)								-	-	-	-
Total Shareholders' Equity	-	-	-	-	-	-	-	451	2,355	2,834	3,100
Total Liabilities and Shareholders' Equity	-	-	-	-	-	-	-	616	2,652	3,617	4,260
Return on Capital Employed (ROCE)								**-6%**	**-15%**	**3%**	**6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue							$65.42	$33.87	$32.04	$36.96	$39.97	$38.36	$39.38
Production Costs							$11.15	$10.07	$6.92	$6.50	$6.32	$6.43	$6.89
Exploration							$0.00	$0.03	$0.27	$1.24	$0.45	$0.68	$0.61
DD&A							$34.23	$33.46	$24.87	$13.90	$14.64	$15.26	$17.34
G&A/Other							$3.41	$1.88	$1.73	$1.99	$2.54	$2.30	$2.32
Pre-tax Results of Operations							$16.63	-$11.57	-$1.75	$13.34	$16.02	$13.70	$12.22
Income Taxes							$5.65	-$3.93	-$0.60	$4.19	$3.50	$3.37	$3.02
Results of Operations							$10.97	-$7.64	-$1.16	$9.15	$12.52	$10.32	$9.20

	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America							
Net Revenue	$65.42	$33.87	$32.04	$36.96	$39.97	$38.36	$39.38
Production Costs	$11.15	$10.07	$6.92	$6.50	$6.32	$6.43	$6.89
Exploration	$0.00	$0.03	$0.27	$1.24	$0.45	$0.68	$0.61
DD&A	$34.23	$33.46	$24.87	$13.90	$14.64	$15.26	$17.34
G&A/Other	$3.41	$1.88	$1.73	$1.99	$2.54	$2.30	$2.32
Pre-tax Results of Operations	$16.63	-$11.57	-$1.75	$13.34	$16.02	$13.70	$12.22
Income Taxes	$5.65	-$3.93	-$0.60	$4.19	$3.50	$3.37	$3.02
Results of Operations	$10.97	-$7.64	-$1.16	$9.15	$12.52	$10.32	$9.20

Source: BMO Capital Markets, Company Reports

Centennial Resource Development (CDEV - NASDAQ)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)							5.8	8.4	10.3	48.6	86.9	48.6	40.0
Liquids Production (b/d)							4,556	5,921	6,729	23,759	46,605	25,698	21,892
Total Production (boe/d)							5,521	7,317	8,452	31,866	61,084	33,800	28,560
% Gas Production							17%	19%	20%	25%	24%	24%	23%
% Oil Production							83%	81%	80%	75%	76%	76%	77%
Proven Reserves:													
Gas Reserves (bcf)							27.4	32.4	148.3	327.2	402.9	292.8	234.6
Oil Reserves (mmbbls)							21.4	27.1	58.2	131.9	194.7	128.3	108.3
Total Proven Reserves (mmboe)							26.0	32.5	83.0	186.5	261.8	177.1	147.4
% Gas Reserves							18%	17%	30%	29%	26%	28%	27%
% Oil Reserves							82%	83%	70%	71%	74%	72%	73%
Proven Reserve Life Index							12.9	12.2	26.9	16.0	11.7	18.2	19.9
Proven Reserve Additions:													
Gas Additions (bcf)							22.6	8.1	119.7	196.6	107.3	423.6	454.3
Oil Additions (mmbbls)							4.0	7.8	33.6	82.4	79.8	195.8	207.6
Total Additions (mmboe)							7.8	9.2	53.6	115.1	97.7	266.4	283.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions							21.0	12.9	18.0	94.4	117.9	230.4	264.2
Acquisitions							0.2	1.3	31.0	4.8	5.8	41.6	43.1
Dispositions							(13.7)	-	-	(0.6)	(2.0)	(2.6)	(16.3)
Revisions of Estimates							0.3	(5.0)	4.6	16.6	(24.1)	(3.0)	(7.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions							269.8%	140.5%	33.6%	82.0%	120.8%	86.5%	93.3%
Acquisitions							2.8%	13.9%	57.9%	4.2%	6.0%	15.6%	15.2%
Dispositions							-176.0%	0.0%	0.0%	-0.5%	-2.0%	-1.0%	-5.8%
Revisions of Estimates							3.4%	-54.4%	8.5%	14.4%	-24.7%	-1.1%	-2.7%
Additions as % of Production:													
Gas							1068.1%	264.4%	3171.9%	1107.5%	338.6%	795.8%	777.8%
Oil							242.3%	361.4%	1369.8%	949.7%	469.0%	695.7%	649.5%
Total							386.5%	342.9%	1737.1%	989.8%	438.1%	719.7%	679.5%
Additions as % of Reserves:													
Gas							82.3%	24.9%	80.7%	60.1%	26.6%	144.7%	193.7%
Oil							18.8%	28.9%	57.8%	62.4%	41.0%	152.6%	191.7%
Total							30.0%	28.2%	64.6%	61.7%	37.3%	150.4%	192.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration							$0.0	$0.1	$2.4	$21.5	$10.0	$33.9	$34.0
Development							$324.8	$87.5	$98.1	$585.9	$933.6	$1,617.6	$2,029.9
Acquisitions							$22.2	$43.2	$2,522.7	$405.1	$213.3	$3,141.1	$3,206.5
Dispositions							na	na	na	na	na	na	na
Total Expenditures							$347.0	$130.8	$2,623.2	$1,012.5	$1,156.9	$4,792.6	$5,270.3
Expenditures as % of Total:													
Exploration							0.0%	0.1%	0.1%	2.1%	0.9%	0.7%	0.6%
Development							93.6%	66.9%	3.7%	57.9%	80.7%	33.8%	38.5%
Acquisitions							6.4%	33.1%	96.2%	40.0%	18.4%	65.5%	60.8%
Cashflow (US$million)							$85.2	$73.2	$59.5	$280.8	$637.5	$977.8	$1,136.2
Cashflow (US$/boe)							$42.27	$27.40	$19.29	$24.14	$28.59	$26.42	$27.25
Recycle Ratio							2.6x	1.9x	0.4x	2.8x	2.5x	1.5x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)							$15.27	$11.11	$4.45	$5.47	$10.06	$7.26	$8.05
Acquisition Costs							$102.15	$33.90	$81.37	$84.70	$36.59	$75.48	$74.39
All Sources (incl. revisions)							$16.14	$14.28	$48.95	$8.75	$11.61	$17.82	$17.59
Exploration & Development (excl. revisions)							$15.46	$6.80	$5.58	$6.43	$8.00	$7.17	$7.81
Acquisition Costs							$102.15	$33.90	$81.37	$84.70	$36.59	$75.48	$74.39
All Sources (excl. revisions)							$16.34	$9.25	$53.51	$10.21	$9.35	$17.62	$17.15

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Centennial Resource Development (CDEV - NASDAQ)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	11.15	10.07	6.92	6.50	6.32	6.43	6.89
Exploration Expense	-	-	-	-	-	-	-	0.03	0.27	1.24	0.45	0.68	0.61
G&A/Other	-	-	-	-	-	-	3.41	1.88	1.73	1.99	2.54	2.30	2.32
F&D Costs (1-Year)	-	-	-	-	-	-	16.14	14.28	48.95	8.75	11.61	17.82	17.59
Return on Capital	-	-	-	-	-	-	13.24	11.01	93.02	9.16	8.57	21.56	18.30
Income Taxes	-	-	-	-	-	-	6.82	5.67	47.92	4.19	2.39	8.84	8.24
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**50.76**	**42.94**	**198.81**	**31.83**	**31.88**	**57.63**	**53.95**
Quality Differential	-	-	-	-	-	-	21.07	12.47	7.01	8.50	18.96	11.49	13.60
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**71.83**	**55.42**	**205.82**	**40.33**	**50.84**	**69.12**	**67.55**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	12.52	11.36	8.05	7.73	7.70	7.74	8.23
Exploration Expense	-	-	-	-	-	-	-	0.04	0.32	1.47	0.54	0.82	0.72
G&A/Other	-	-	-	-	-	-	3.83	2.12	2.01	2.37	3.09	2.77	2.78
F&D Costs (1-Year)	-	-	-	-	-	-	18.17	15.64	65.86	10.64	13.52	21.73	21.25
Return on Capital	-	-	-	-	-	-	14.79	12.26	115.24	10.78	9.87	25.13	21.32
Income Taxes	-	-	-	-	-	-	7.62	6.32	59.37	4.94	2.76	10.30	9.60
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**56.91**	**47.73**	**250.85**	**37.92**	**37.50**	**68.49**	**63.90**
Quality Differential	-	-	-	-	-	-	23.65	14.06	8.16	10.11	23.11	13.79	15.82
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**80.57**	**61.79**	**259.01**	**48.02**	**60.61**	**82.28**	**79.72**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

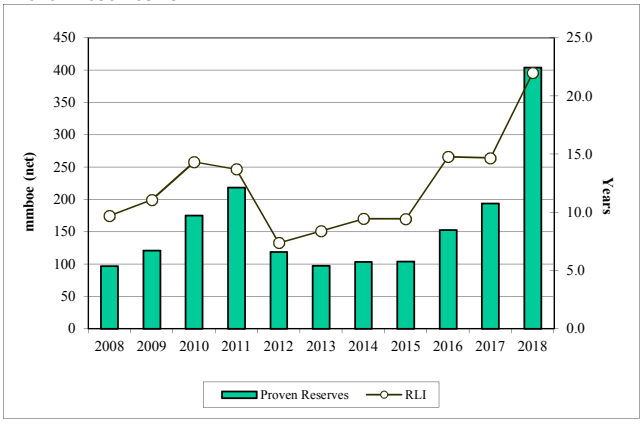
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	12.52	11.36	8.05	7.73	7.70	7.74	8.23
Exploration Expense	-	-	-	-	-	-	-	0.04	0.32	1.47	0.54	0.82	0.72
G&A/Other	-	-	-	-	-	-	3.83	2.12	2.01	2.37	3.09	2.77	2.78
F&D Costs (1-Year)	-	-	-	-	-	-	13.88	28.56	230.21	19.73	21.60	41.22	62.80
Return on Capital	-	-	-	-	-	-	11.39	22.41	398.66	20.00	15.66	47.04	63.08
Income Taxes	-	-	-	-	-	-	5.87	11.54	205.37	9.16	4.38	19.29	28.40
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**47.48**	**76.02**	**844.63**	**60.45**	**52.98**	**118.88**	**166.01**
Quality Differential	-	-	-	-	-	-	23.65	14.06	8.16	10.11	23.11	13.79	15.82
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**71.13**	**90.08**	**852.78**	**70.56**	**76.09**	**132.67**	**181.83**

Source: BMO Capital Markets, Company Reports

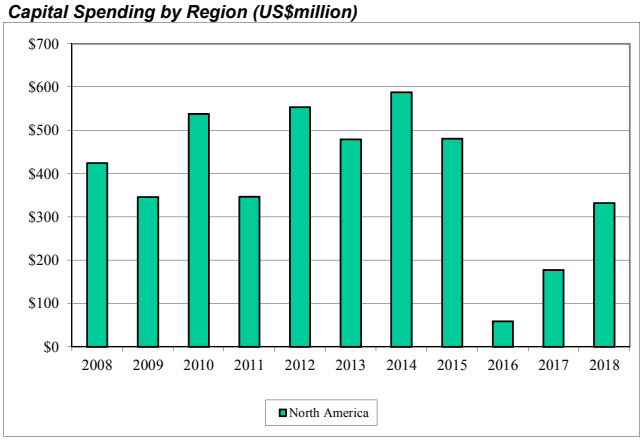
Comstock Resources Inc. (CRK - NYSE) US$, net

- Comstock reported results from operations of $0.82/boe in 2018 versus a loss of $2.76/boe last year.
- One-year F&D costs came in at $1.33/boe compared to $3.20 in 2017. On a realized oil:gas price ratio basis, F&D costs were reported at $3.69/boe, while costs for PD reserves were $12.55/boe in 2018.
- Comstock's 2018 operations imply a required Brent breakeven oil price of $43.49/boe based on realized oil:gas ratio on total proved reserves, while its PD costs suggest a Brent breakeven price of $69.12/boe.
- The company reported a return on capital of 5.4% (adjusted to 38.7%) in 2018 versus a loss of 2.1% (adjusted to a gain of 6.5%) in 2017.

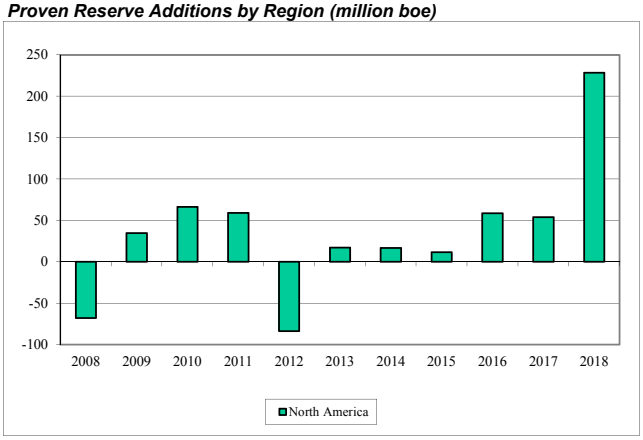
Proven Reserves vs RLI



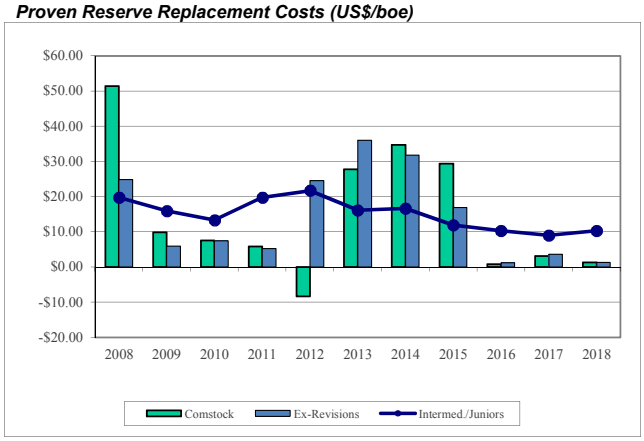
Capital Spending by Region (US$million)



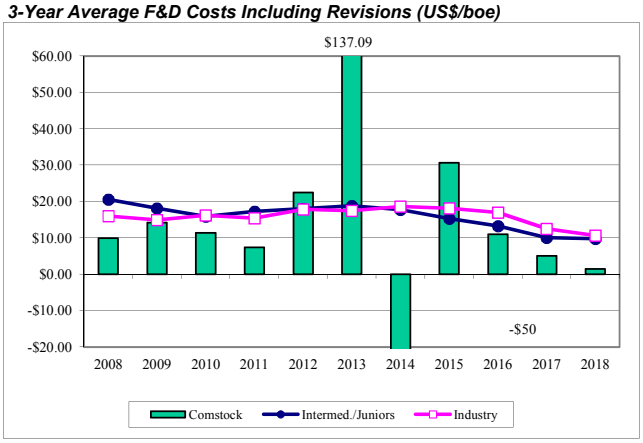
Proven Reserve Additions by Region (million boe)



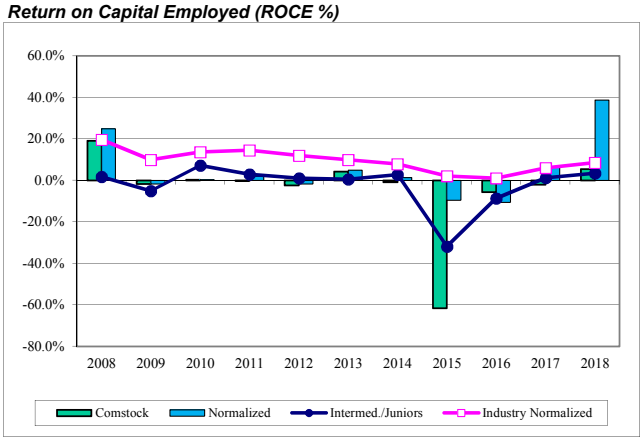
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



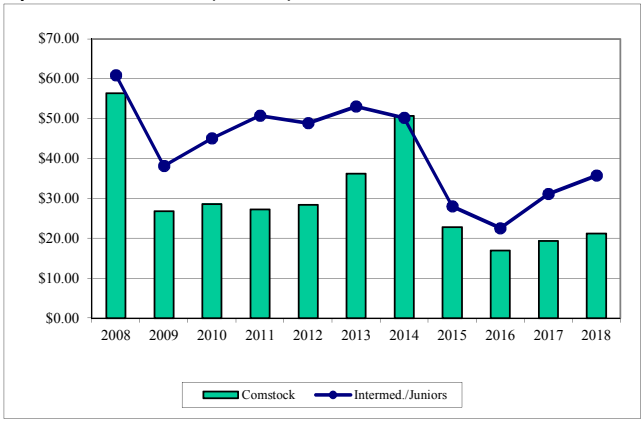
Source: BMO Capital Markets, Company Reports

Comstock Resources Inc. (CRK - NYSE)

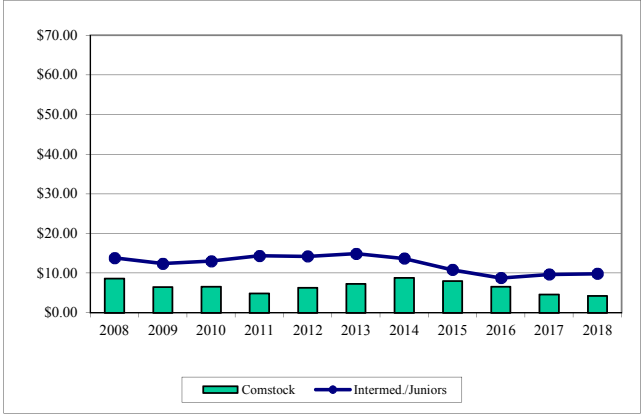
US$/boe, net

North America

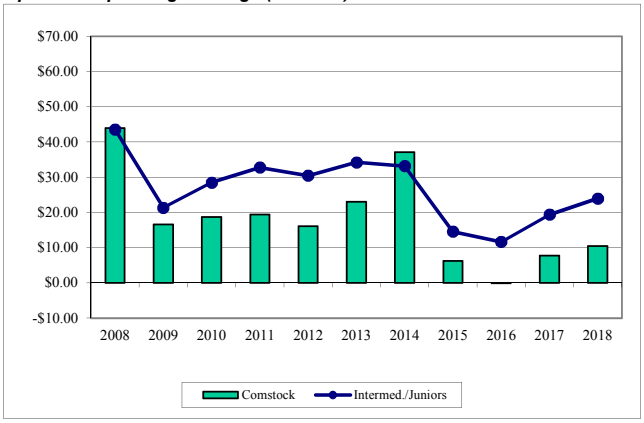
Upstream Net Revenue (US$/boe)



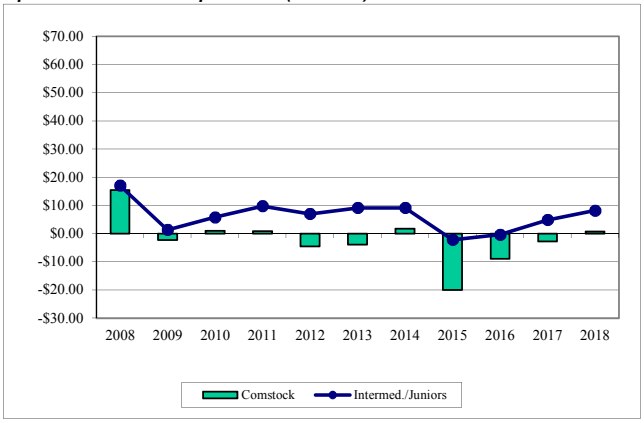
Production Costs (US$/boe)



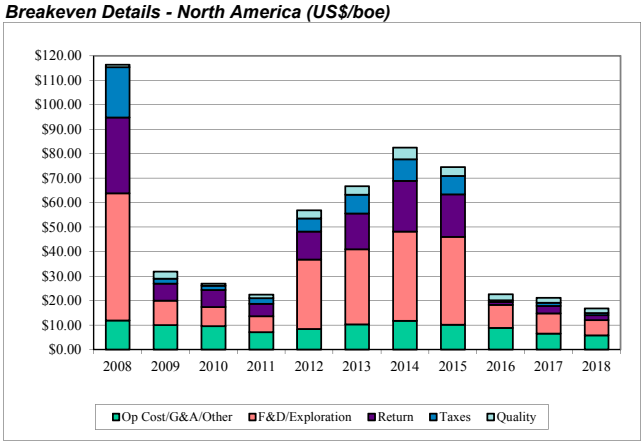
Upstream Operating Earnings (US$/boe)



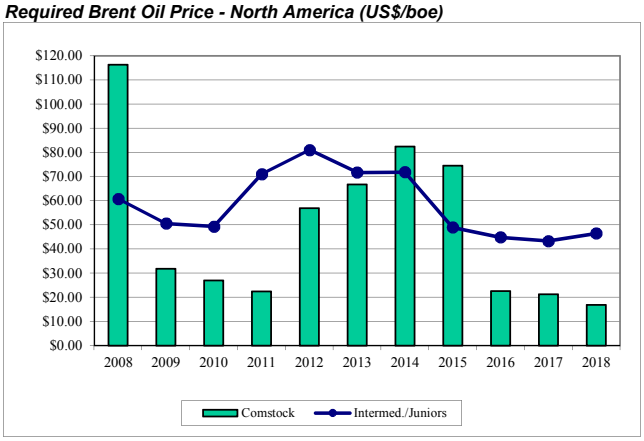
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Comstock Resources Inc. (CRK - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	564	291	349	434	432	420	555	252	176	255	390
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	27	-	-	-	24	-	-	-	-	-	-
Total Revenue and Other Income	590	291	349	434	456	420	555	252	176	255	390
Crude Oil and Product Purchases	-	-	-	-	-	-					
Production and Transportation Expenses	87	69	81	79	102	85	97	89	68	61	79
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	5	1	3	10	61	33	19	71	84	-	-
General and Administrative	32	39	37	35	34	35	32	24	24	26	27
Depreciation, Depletion and Amortization	182	213	214	291	365	337	378	321	141	124	122
Interest, net	24	16	29	43	65	73	59	119	129	146	145
Other	163	(0)	10	25	(23)	20	51	831	(143)	28	26
Earnings Before Income Tax	97	(47)	(24)	(48)	(147)	(163)	(82)	(1,202)	(128)	(129)	(9)
Current Income Taxes	(5)	(42)	(0)	0	(0)	0	-	(154)	0	(19)	(1)
Future Income Taxes	44	31	(5)	(15)	(47)	(56)	(25)		7	1	21
Total Income Taxes	39	(11)	(5)	(15)	(47)	(56)	(25)	(154)	7	(18)	20
Minority Interest	-	-	-	-	-	-				-	-
Earnings From Continuing Operations	58	(36)	(20)	(33)	(100)	(107)	(57)	(1,047)	(135)	(111)	(29)
Discontinued Operations/Extraordinary Items	194	-	-	-	-	148	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-				-	-
Net Earnings	252	(36)	(20)	(33)	(100)	41	(57)	(1,047)	(135)	(111)	(29)
Preferred Stock Dividends	-	-	-	-	-	-				-	-
Net Earnings to Common Shareholders	252	(36)	(20)	(33)	(100)	41	(57)	(1,047)	(135)	(111)	(29)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	252	(36)	(20)	(33)	(100)	41	(57)	(1,047)	(135)	(111)	(29)
Charges and Credits Not Impacting Cash	231	244	209	337	405	314	433	1,038	260	149	152
Other	(53)	16	28	(5)	(42)	(104)	25	47	(133)	74	83
Cash Flow From Operations	429	223	218	298	263	251	401	38	(8)	112	206
Change in Working Capital / Other	21	(47)	93	(13)	(1)	10	-	(8)	(16)	63	(18)
Net Cash From Operating Activities	451	176	312	285	262	261	401	30	(24)	175	188
Total Capital Expenditures	(837)	(700)	(537)	(1,006)	(588)	(422)	(635)	(264)	(57)	(180)	(320)
Acquisitions, net	-	-	-	-	167	0		102	28	2	117
Other	130	1	97	53	38	735		-	-	-	(9)
Net Cash From Investing Activities	(708)	(699)	(440)	(952)	(384)	313	(635)	(162)	(30)	(179)	(212)
Net Change in Debt	(470)	261	42	683	126	(530)	271	282	-	-	-
Net Change in Common Stock	8	2	1	-	-	(9)	(8)	-	-	-	41
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	(18)	(24)	-	-	-	-
Other	9	(6)	(3)	(9)	(8)	(19)	(6)	(19)	(15)	(0)	(55)
Net Cash From Financing Activities	(453)	257	40	674	118	(576)	233	264	(15)	(0)	(14)
Bois D'Arc Cash and Cash Equivalents	292	-	-	-	-	-				-	-
Net Increase/(Decrease) in Cash	(418)	84	(89)	7	(4)	(2)	(1)	132	(68)	(5)	(38)
Cash and Equivalents, Beginning of Year	6	6	90	2	8	4	3	2	134	66	61
Cash and Equivalents, End of Year	(412)	90	2	8	4	3	2	134	66	61	23

Source: BMO Capital Markets, Company Reports

Comstock Resources Inc. (CRK - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	130	273	136	113	77	57	61	156	90	303	159
Net Property, Plant and Equipment	1,445	1,576	1,816	2,510	2,470	2,067	2,198	1,038	799	608	1,668
Other Assets	3	9	12	17	20	16	15	1	1	20	360
Total Assets	1,578	1,859	1,964	2,640	2,567	2,139	2,274	1,196	890	930	2,188
Total Current Liabilities	114	95	155	187	139	195	162	96	92	168	207
Long-term Debt	210	471	513	1,197	1,324	799	1,070	1,249	1,045	1,104	1,244
Deferred Income Taxes	186	221	218	202	150	177	155	2	9	10	162
Other Liabilities and Deferred Credits	5	7	9	16	20	17	17	20	16	17	5
Total Liabilities	516	793	896	1,602	1,634	1,187	1,404	1,367	1,161	1,300	1,618
Minority Interests	-	-	-							-	-
Common Shares	23	24	24	24	24	24	23	24	7	8	53
Contributed Surplus (Paid-in Capital)	416	435	454	469	481	481	480	486	532	547	453
Preferred Stock	-	-	-	-	-	-	-	-		-	-
Retained Earnings	614	577	558	524	424	447	366	(681)	(816)	(927)	64
Other / Comprehensive Income (Loss)	9	31	32	20	4	-	-	-	6	4	-
Total Shareholders' Equity	1,062	1,066	1,069	1,038	934	952	870	(171)	(271)	(369)	570
Total Liabilities and Shareholders' Equity	1,578	1,859	1,964	2,640	2,567	2,139	2,274	1,196	890	930	2,188
Return on Capital Employed (ROCE)	**19.1%**	**-1.8%**	**0.2%**	**-0.2%**	**-2.4%**	**4.2%**	**-0.8%**	**-61.7%**	**-5.7%**	**-2.1%**	**5.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue	$56.45	$26.81	$28.59	$27.26	$28.41	$36.24	$50.75	$22.87	$17.00	$19.34	$21.23	$19.59	$25.49
Production Costs	$8.68	$6.50	$6.61	$4.94	$6.35	$7.30	$8.86	$8.07	$6.62	$4.60	$4.30	$4.97	$6.17
Exploration	$0.50	$0.08	$0.21	$0.64	$3.83	$2.88	$1.77	$6.41	$8.14	$5.00	$5.00	$6.05	$5.26
DD&A	$18.24	$19.54	$17.51	$18.25	$22.75	$29.07	$34.57	$29.12	$13.69	$9.36	$6.63	$9.23	$17.01
G&A/Other	$3.23	$3.59	$3.05	$2.21	$2.10	$3.00	$2.96	$2.13	$2.32	$1.98	$1.47	$1.84	$2.08
Pre-tax Earnings	$25.79	-$2.90	$1.22	$1.23	-$6.62	-$6.01	$2.58	-$22.86	-$13.77	-$1.60	$3.82	-$2.50	-$5.03
Income Taxes	$10.28	-$0.66	$0.24	$0.37	-$2.13	-$2.07	$0.78	-$2.94	-$4.82	$1.16	$3.00	$0.49	-$0.05
Results of Operations	$15.50	-$2.24	$0.98	$0.85	-$4.49	-$3.94	$1.80	-$19.92	-$8.95	-$2.76	$0.82	-$2.99	-$4.98

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
North America													
Net Revenue	$56.45	$26.81	$28.59	$27.26	$28.41	$36.24	$50.75	$22.87	$17.00	$19.34	$21.23	$19.59	$25.49
Production Costs	$8.68	$6.50	$6.61	$4.94	$6.35	$7.30	$8.86	$8.07	$6.62	$4.60	$4.30	$4.97	$6.17
Exploration	$0.50	$0.08	$0.21	$0.64	$3.83	$2.88	$1.77	$6.41	$8.14	$5.00	$5.00	$6.05	$5.26
DD&A	$18.24	$19.54	$17.51	$18.25	$22.75	$29.07	$34.57	$29.12	$13.69	$9.36	$6.63	$9.23	$17.01
G&A/Other	$3.23	$3.59	$3.05	$2.21	$2.10	$3.00	$2.96	$2.13	$2.32	$1.98	$1.47	$1.84	$2.08
Pre-tax Earnings	$25.79	-$2.90	$1.22	$1.23	-$6.62	-$6.01	$2.58	-$22.86	-$13.77	-$1.60	$3.82	-$2.50	-$5.03
Income Taxes	$10.28	-$0.66	$0.24	$0.37	-$2.13	-$2.07	$0.78	-$2.94	-$4.82	$1.16	$3.00	$0.49	-$0.05
Results of Operations	$15.50	-$2.24	$0.98	$0.85	-$4.49	-$3.94	$1.80	-$19.92	-$8.95	-$2.76	$0.82	-$2.99	-$4.98

Source: BMO Capital Markets, Company Reports

Comstock Resources Inc. (CRK - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	147.6	166.6	189.0	248.2	226.0	152.6	109.0	130.6	147.1	201.4	274.7	207.7	172.6
Liquids Production (b/d)	2,764	2,123	1,959	2,296	6,326	6,340	11,816	8,463	3,803	2,605	4,581	3,663	6,254
Total Production (boe/d)	27,361	29,895	33,453	43,663	43,993	31,771	29,975	30,233	28,313	36,177	50,367	38,286	35,013
% Gas Production	90%	93%	94%	95%	86%	80%	61%	72%	87%	93%	91%	90%	82%
% Oil Production	10%	7%	6%	5%	14%	20%	39%	28%	13%	7%	9%	10%	18%
Proven Reserves:													
Gas Reserves (bcf)	523.6	682.4	1,025.6	1,118.6	476.6	452.7	495.3	569.6	872.5	1,117.0	2,282.8	1,424.1	1,067.4
Oil Reserves (mmbbls)	9.7	7.2	4.2	32.1	39.2	22.0	20.9	9.2	7.3	7.6	23.6	12.8	13.7
Total Proven Reserves (mmboe)	96.9	120.9	175.2	218.5	118.7	97.4	103.4	104.2	152.7	193.7	404.1	250.2	191.6
% Gas Reserves	90%	94%	98%	85%	67%	77%	80%	91%	95%	96%	94%	95%	93%
% Oil Reserves	10%	6%	2%	15%	33%	23%	20%	9%	5%	4%	6%	5%	7%
Proven Reserve Life Index	9.7	11.1	14.3	13.7	7.4	8.4	9.5	9.4	14.8	14.7	22.0	17.1	14.1
Proven Reserve Additions:													
Gas Additions (bcf)	(260.3)	219.6	412.2	183.6	-559.5	70.9	82.4	122.0	356.6	318.0	1,266.1	1,940.6	2,145.0
Oil Additions (mmbbls)	(24.5)	(1.7)	(2.3)	28.7	9.4	5.4	3.2	(8.5)	(0.6)	1.2	17.7	18.4	13.0
Total Additions (mmboe)	(67.9)	34.9	66.4	59.3	-83.8	17.2	16.9	11.8	58.9	54.2	228.7	341.8	370.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	17.1	58.3	71.8	38.0	22.5	13.3	18.4	28.3	47.6	48.6	169.0	265.2	312.0
Acquisitions	0.0	0.0	0.0	27.3	0.0	0.0	0.0	0.0	0.0	0.0	73.8	73.8	73.8
Dispositions	(76.1)	(0.1)	(4.7)	-	(17.4)	-	-	(4.5)	(10.0)	(1.3)	(21.0)	(32.3)	(36.8)
Revisions of Estimates	(8.8)	(23.3)	(0.7)	(6.0)	(89.0)	3.9	(1.5)	(12.0)	21.3	6.9	7.0	35.1	21.6
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-25.2%	167.1%	108.0%	64.1%	-26.8%	77.2%	109.0%	240.0%	80.8%	89.7%	73.9%	77.6%	84.2%
Acquisitions	0.0%	0.0%	0.0%	46.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	32.2%	21.6%	19.9%
Dispositions	112.2%	-0.4%	-7.0%	0.0%	20.7%	0.0%	0.0%	-38.3%	-17.1%	-2.3%	-9.2%	-9.5%	-9.9%
Revisions of Estimates	13.0%	-66.7%	-1.0%	-10.1%	106.1%	22.8%	-9.0%	-101.7%	36.2%	12.6%	3.0%	10.3%	5.8%
Additions as % of Production:													
Gas	-483.3%	361.0%	597.6%	202.7%	-678.3%	127.3%	207.2%	255.9%	664.2%	432.5%	1262.7%	853.1%	681.1%
Oil	-2424.7%	-216.6%	-318.9%	3427.0%	408.4%	233.0%	74.0%	-276.3%	-40.6%	128.9%	1060.5%	458.6%	114.3%
Total	-679.4%	320.0%	544.0%	372.2%	-522.1%	148.4%	154.7%	106.9%	569.6%	410.7%	1244.3%	815.4%	579.9%
Additions as % of Reserves:													
Gas	-49.7%	32.2%	40.2%	16.4%	-117.4%	15.7%	16.6%	21.4%	40.9%	28.5%	55.5%	136.3%	201.0%
Oil	-253.1%	-23.3%	-54.0%	89.5%	24.0%	24.5%	15.3%	-92.5%	-7.8%	16.2%	75.1%	143.5%	95.2%
Total	-70.0%	28.9%	37.9%	27.1%	-70.7%	17.7%	16.4%	11.3%	38.5%	28.0%	56.6%	136.6%	193.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$62	$102	$88	$102	$6	$0	$52	$26	$0	$0	$0	$0	$78
Development	$250	$218	$315	$219	$515	$342	$441	$318	$59	$177	$272	$508	$1,267
Acquisitions	$113	$26	$135	$26	$33	$137	$94	$137	$0	$0	$60	$60	$291
Dispositions	na	na	na	na	na	na	na	$0	$0	$0	$0	na	na
Total Expenditures	$425	$346	$538	$347	$553	$479	$587	$481	$59	$177	$332	$568	$1,636
Expenditures as % of Total:													
Exploration	14.6%	29.5%	16.3%	29.4%	1.0%	0.1%	8.8%	5.5%	0.0%	0.0%	0.0%	0.0%	4.8%
Development	58.8%	63.0%	58.6%	63.1%	93.1%	71.4%	75.1%	66.1%	100.0%	100.0%	81.8%	89.4%	77.4%
Acquisitions	26.6%	7.5%	25.1%	7.5%	6.0%	28.5%	16.1%	28.4%	0.0%	0.0%	18.2%	10.6%	17.8%
Cashflow (US$million)	$429.4	$181.6	$228.7	$310.3	$259.0	$267.5	$406.5	$69.1	-$0.9	$168.4	$284.1	$451.7	$927.3
Cashflow (US$/boe)	$43.00	$16.64	$18.73	$19.47	$16.13	$23.07	$37.15	$6.26	-$0.08	$12.76	$15.45	$10.77	$14.51
Recycle Ratio	0.8x	1.7x	2.5x	3.3x	-1.9x	0.8x	1.1x	0.2x	-0.1x	4.0x	11.6x	7.1x	3.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$37.72	$9.14	$5.67	$10.02	-$7.83	$19.90	$29.13	$21.08	$0.85	$3.20	$1.55	$1.69	$4.03
Acquisition Costs	na	na	na	$0.95	na	na	na	na	na	na	$0.82	$0.82	nm
All Sources (incl. revisions)	$51.41	$9.88	$7.56	$5.85	-$8.32	$27.83	$34.71	$29.45	$0.85	$3.20	$1.33	$1.52	$4.02
Exploration & Development (excl. revisions)	$18.26	$5.49	$5.61	$8.44	$23.13	$25.76	$26.74	$12.15	$1.23	$3.65	$1.61	$1.92	$4.31
Acquisition Costs	na	na	na	$0.95	na	na	na	na	na	na	$0.82	$0.82	$3.95
All Sources (excl. revisions)	$24.88	$5.93	$7.49	$5.31	$24.59	$36.03	$31.86	$16.97	$1.23	$3.65	$1.37	$1.68	$4.24

Source: BMO Capital Markets, Company Reports

Comstock Resources Inc. (CRK - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	8.68	6.50	6.61	4.94	6.35	7.30	8.86	8.07	6.62	4.60	4.30	4.97	6.17
Exploration Expense	0.50	0.08	0.21	0.64	3.83	2.88	1.77	6.41	8.14	5.00	5.00	6.05	5.26
G&A/Other	3.23	3.59	3.05	2.21	2.10	3.00	2.96	2.13	2.32	1.98	1.47	1.84	2.08
F&D Costs (1-Year)	51.41	9.88	7.56	5.85	24.59	27.83	34.71	29.45	1.23	3.20	1.33	1.92	13.98
Return on Capital	31.00	6.88	6.95	5.14	11.38	14.55	20.56	17.44	1.18	3.02	2.00	2.16	12.62
Income Taxes	20.56	2.03	1.72	2.25	5.39	7.66	8.89	7.47	0.63	1.30	0.86	1.00	5.68
Breakeven Oil Price	**115.39**	**28.96**	**26.11**	**21.02**	**53.65**	**63.22**	**77.76**	**70.97**	**20.12**	**19.10**	**14.97**	**17.94**	**45.80**
Quality Differential	0.98	2.83	0.92	1.46	3.31	3.57	4.77	3.60	2.53	2.15	1.94	2.21	3.00
Required Brent Price	**116.37**	**31.78**	**27.02**	**22.48**	**56.95**	**66.79**	**82.53**	**74.57**	**22.65**	**21.25**	**16.91**	**20.15**	**48.80**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.30	13.65	15.80	17.34	22.89	20.18	15.78	16.31	14.92	11.66	12.52	12.93	14.23
Exploration Expense	0.77	0.17	0.51	2.24	13.80	7.97	3.16	12.94	18.34	10.00	10.00	12.78	10.89
G&A/Other	4.95	7.54	7.29	7.75	7.59	8.29	5.27	4.31	5.22	5.02	4.29	4.79	4.80
F&D Costs (1-Year)	13.69	24.06	19.01	9.58	30.52	61.54	65.40	55.73	3.43	8.83	3.69	5.32	27.42
Return on Capital	8.33	16.59	16.61	10.87	22.37	34.20	29.85	24.02	2.83	7.87	5.11	5.45	21.84
Income Taxes	5.53	4.90	4.11	4.75	10.59	18.00	12.91	10.29	1.52	3.37	2.19	2.53	9.83
Breakeven Oil Price	**46.56**	**66.92**	**63.33**	**52.52**	**107.77**	**150.18**	**132.37**	**123.61**	**46.26**	**46.75**	**37.81**	**43.80**	**89.01**
Quality Differential	0.94	7.43	2.20	5.13	10.68	9.79	8.46	7.28	5.76	5.69	5.68	5.71	6.57
Required Brent Price	**47.50**	**74.35**	**65.52**	**57.66**	**118.45**	**159.97**	**140.83**	**130.88**	**52.02**	**52.44**	**43.49**	**49.50**	**95.58**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.30	13.65	15.80	17.34	22.89	20.18	15.78	16.31	14.92	11.66	12.52	12.93	14.23
Exploration Expense	0.77	0.17	0.51	2.24	13.80	7.97	3.16	12.94	18.34	10.00	10.00	12.78	10.89
G&A/Other	4.95	7.54	7.29	7.75	7.59	8.29	5.27	4.31	5.22	5.02	4.29	4.79	4.80
F&D Costs (1-Year)	174.47	57.97	35.34	22.19	53.01	80.63	71.12	65.83	8.46	14.38	12.55	12.42	34.47
Return on Capital	106.03	39.93	30.87	24.99	38.88	44.77	31.37	28.29	6.94	12.79	16.85	12.74	26.79
Income Taxes	70.32	11.79	7.64	10.92	18.40	23.56	13.56	12.12	3.74	5.48	7.22	5.90	12.06
Breakeven Oil Price	**369.84**	**131.06**	**97.45**	**85.44**	**154.58**	**185.40**	**140.27**	**139.80**	**57.62**	**59.33**	**63.44**	**61.57**	**103.23**
Quality Differential	0.94	7.43	2.20	5.13	10.68	9.79	8.46	7.28	5.76	5.69	5.68	5.71	6.57
Required Brent Price	**370.78**	**138.49**	**99.65**	**90.57**	**165.26**	**195.19**	**148.72**	**147.08**	**63.38**	**65.02**	**69.12**	**67.28**	**109.80**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

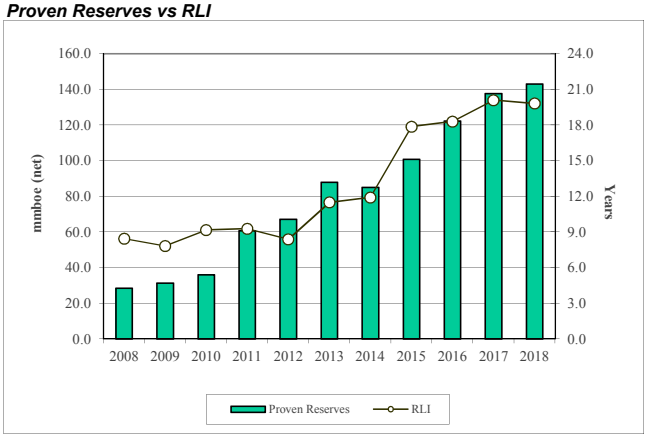
Crew Energy Inc. (CR - TSX)

US$, net

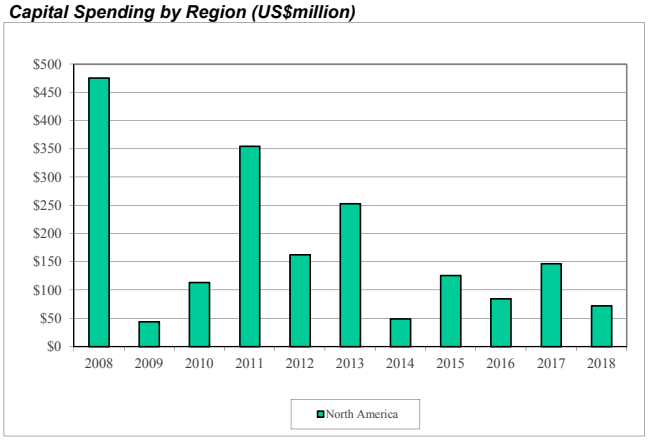
- Crew reported results of operations of $3.27/boe in 2018 compared to $4.13/boe in 2017.
- The company's one-year F&D cost came in at $7.09/boe versus $7.37/boe last year. On a realized oil:gas price ratio basis, F&D costs dropped to $9.84/boe from $15.29/boe, while the cost of PD reserves increased to $18.98/boe from $18.24/boe.
- Crew's 2018 costs imply a required Brent breakeven oil price of $62.90/boe, while its PD cost assessment implies a Brent breakeven oil price of $87.57/boe.
- The company reported ROCE of 2.2% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

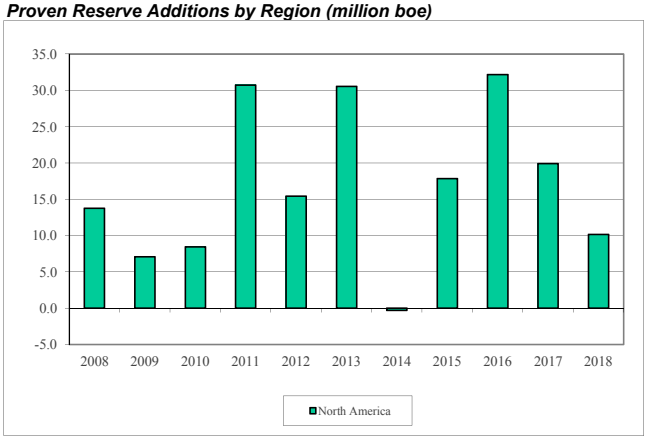
Proven Reserves vs RLI



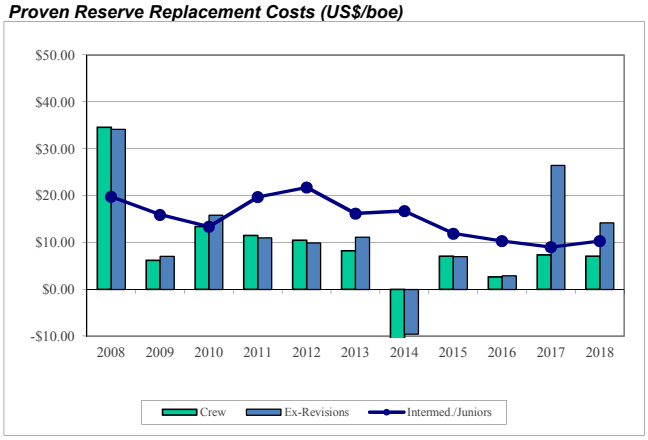
Capital Spending by Region (US$million)



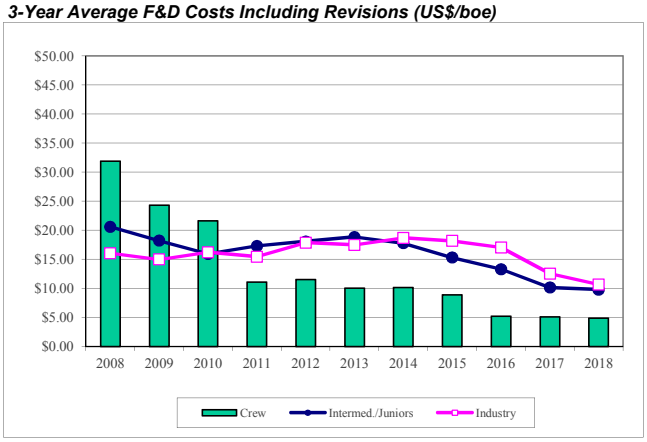
Proven Reserve Additions by Region (million boe)



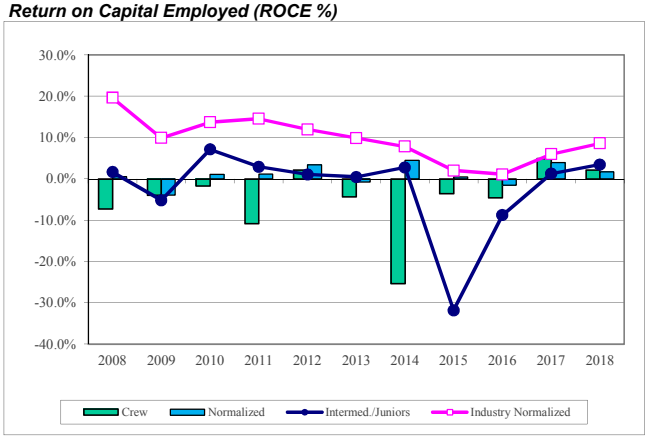
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

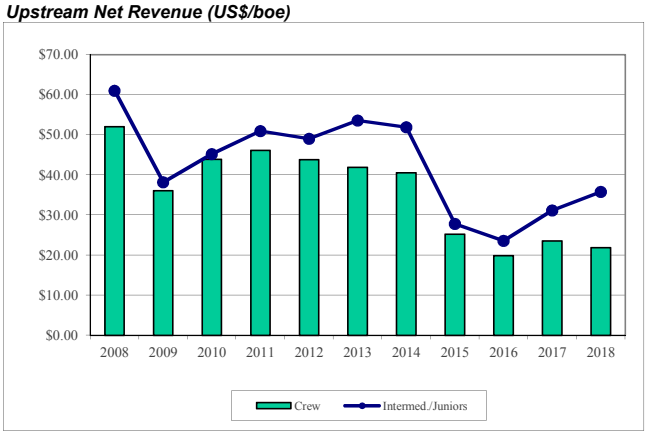
See pages F1 to F4 for analyst coverage.

Crew Energy Inc. (CR - TSX)

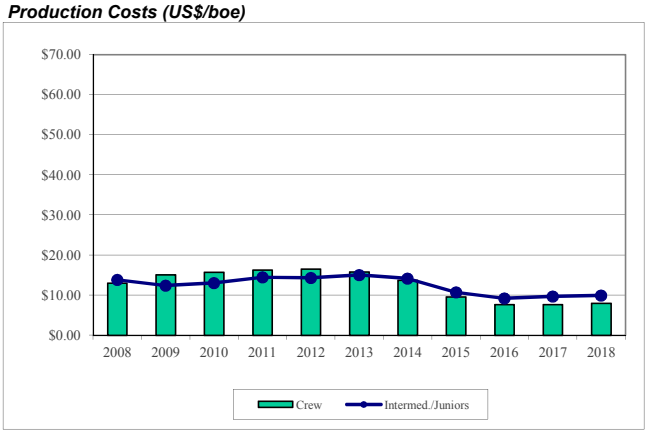
US$/boe, net

North America

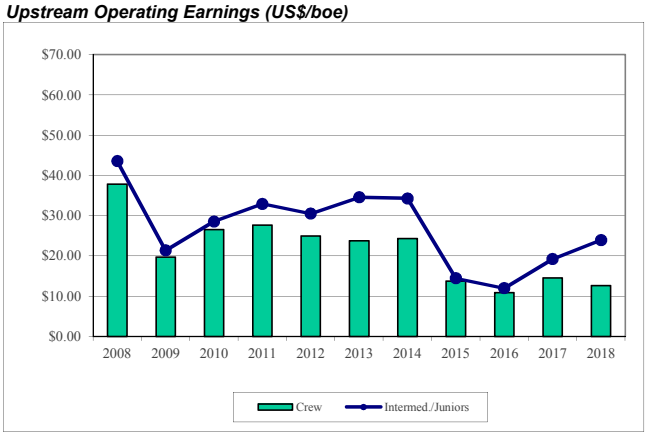
Upstream Net Revenue (US$/boe)



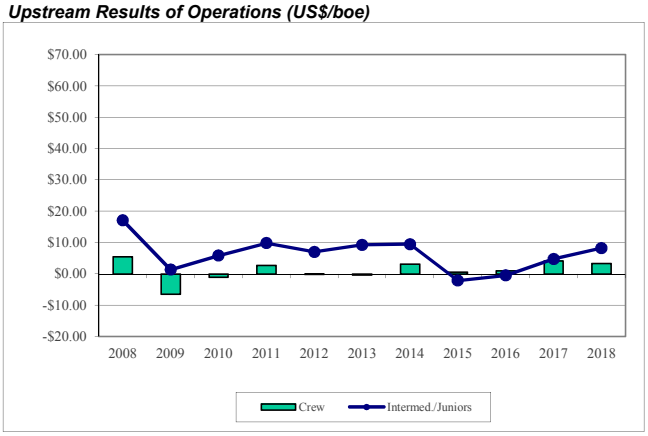
Production Costs (US$/boe)



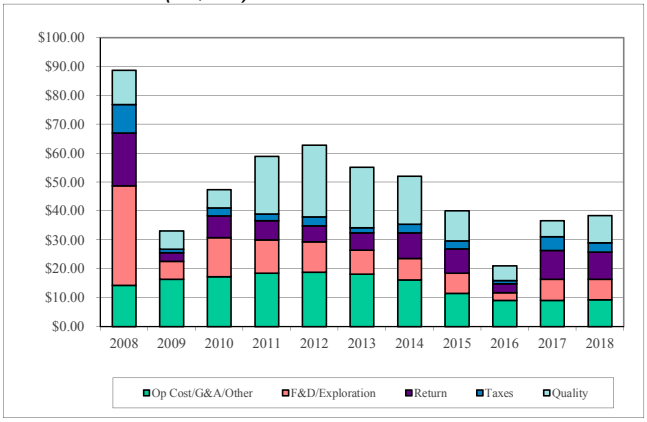
Upstream Operating Earnings (US$/boe)



Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Crew Energy Inc. (CR - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	175	128	160	300	327	335	310	110	124	153	157
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	2	14	6	(8)	38	(23)	27	7	(10)	23	7
Total Revenue and Other Income	177	143	165	291	365	312	338	116	114	176	164
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	44	60	62	106	132	121	98	54	51	52	57
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	2
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	4	5	6	14	18	18	17	10	9	9	9
Depreciation, Depletion and Amortization	99	116	110	158	203	185	144	73	65	58	60
Interest, net	7	6	6	12	16	17	21	14	15	25	19
Other	68	3	4	179	(38)	72	479	17	40	(7)	(2)
Earnings Before Income Tax	(44)	(47)	(23)	(178)	34	(100)	(422)	(53)	(65)	39	18
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	6	(14)	(6)	(46)	12	(23)	(105)	(9)	(16)	12	8
Total Income Taxes	6	(14)	(6)	(46)	12	(23)	(105)	(9)	(16)	12	8
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(50)	(33)	(17)	(132)	22	(77)	(317)	(43)	(49)	27	10
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(50)	(33)	(17)	(132)	22	(77)	(317)	(43)	(49)	27	10
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(50)	(33)	(17)	(132)	22	(77)	(317)	(43)	(49)	27	10

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(50)	(33)	(17)	(132)	22	(77)	(317)	(43)	(49)	27	10
Charges and Credits Not Impacting Cash	105	102	104	295	244	231	250	107	82	83	68
Other	66	5	12	6	(82)	10	221	1	26	(26)	(7)
Cash Flow From Operations	121	74	99	170	184	163	155	64	59	84	71
Change in Working Capital / Other	(4)	(1)	(4)	(15)	29	(6)	(2)	(6)	(0)	7	(2)
Net Cash From Operating Activities	116	73	94	155	214	157	153	58	59	90	69
Total Capital Expenditures	(181)	(113)	(242)	(380)	(259)	(214)	(278)	(193)	(82)	(184)	(79)
Acquisitions, net	(68)	69	128	26	97	(39)	226	67	(3)	37	8
Other	13	12	(4)	52	(73)	(2)	18	(31)	1	4	(27)
Net Cash From Investing Activities	(235)	(32)	(117)	(302)	(236)	(255)	(34)	(157)	(83)	(142)	(98)
Net Change in Debt	57	(78)	3	41	12	97	(134)	24	5	55	29
Net Change in Common Stock	62	39	20	101	-	-	11	78	11	(3)	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	(2)	(0)	5	10	0	4	(4)	8	-	-
Net Cash From Financing Activities	119	(41)	23	147	22	98	(119)	98	25	52	29
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	0	0	(0)	-	(0)	(0)	0	(0)	0	0	0
Cash and Equivalents, Beginning of Year	(0)	(0)	(0)	(0)	(0)	0	(0)	0	0	-	-
Cash and Equivalents, End of Year	0	(0)	(0)	(0)	(0)	(0)	(0)	(0)	0	0	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Crew Energy Inc. (CR - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	42	34	59	80	46	48	71	27	30	33	61
Net Property, Plant and Equipment	945	815	910	1,784	1,788	1,742	1,038	947	906	1,034	1,060
Other Assets	-	-	-	-	-	-	-	-	-	4	-
Total Assets	986	848	969	1,864	1,835	1,790	1,110	974	936	1,070	1,121
Total Current Liabilities	283	196	233	195	102	102	86	30	52	55	45
Long-term Debt	-	-	-	233	243	333	178	178	178	244	274
Deferred Income Taxes	110	89	94	186	197	168	52	36	19	33	41
Other Liabilities and Deferred Credits	34	31	44	106	109	105	78	67	66	68	69
Total Liabilities	427	316	370	721	651	709	394	312	315	399	429
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	543	544	628	1,277	1,277	1,239	1,171	1,095	1,090	1,124	1,134
Contributed Surplus (Paid-in Capital)	15	20	23	37	54	61	66	61	57	56	58
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	2	(32)	(52)	(170)	(146)	(219)	(521)	(494)	(525)	(510)	(500)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	560	532	599	1,143	1,184	1,081	716	662	621	671	692
Total Liabilities and Shareholders' Equity	986	848	969	1,864	1,835	1,790	1,110	974	936	1,070	1,121
Return on Capital Employed (ROCE)	**-7.3%**	**-3.9%**	**-1.7%**	**-10.8%**	**2.1%**	**-4.3%**	**-25.3%**	**-3.6%**	**-4.6%**	**5.0%**	**2.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$52.00	$36.07	$43.84	$46.11	$43.81	$41.90	$40.51	$25.17	$19.88	$23.52	$21.87	$21.78	$26.34
Production Costs	$13.02	$15.06	$15.69	$16.23	$16.52	$15.77	$13.75	$9.60	$7.68	$7.66	$7.95	$7.77	$9.35
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$29.40	$28.90	$27.94	$24.07	$25.31	$24.16	$20.14	$12.92	$9.65	$8.45	$8.27	$8.78	$11.89
G&A / Other	$1.17	$1.26	$1.60	$2.18	$2.29	$2.37	$2.41	$1.83	$1.33	$1.34	$1.29	$1.32	$1.64
Pre-tax Results of Operations	$8.41	-$9.15	-$1.39	$3.63	-$0.32	-$0.41	$4.21	$0.81	$1.22	$6.07	$4.36	$3.91	$3.46
Income Taxes	$2.94	-$2.69	-$0.37	$0.94	-$0.12	-$0.09	$1.05	$0.20	$0.30	$1.94	$1.09	$1.06	$0.91
Results of Operations	$5.47	-$6.46	-$1.02	$2.68	-$0.20	-$0.31	$3.16	$0.61	$0.93	$4.13	$3.27	$2.85	$2.55

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Crew Energy Inc. (CR - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	42.1	42.6	40.0	56.1	64.0	63.9	62.4	58.2	79.3	82.6	87.3	83.1	74.0
Liquids Production (b/d)	2,195	3,883	4,115	8,597	11,279	10,287	9,170	5,747	5,107	5,012	5,227	5,116	6,053
Total Production (boe/d)	9,218	10,991	10,780	17,940	21,947	20,941	19,573	15,453	18,320	18,773	19,781	18,958	18,380
% Gas Production	76%	65%	62%	52%	49%	51%	53%	63%	72%	73%	74%	73%	67%
% Oil Production	24%	35%	38%	48%	51%	49%	47%	37%	28%	27%	26%	27%	33%
Proven Reserves:													
Closing Gas Reserves (bcf)	125.9	136.4	142.5	223.9	241.2	351.1	378.4	461.6	554.3	636.0	644.8	611.7	535.0
Closing Oil Reserves (mmbbls)	7.4	8.6	12.3	23.5	27.0	29.3	22.0	23.8	29.9	31.7	35.6	32.4	28.6
Closing Total Proven Reserves (mmboe)	28.4	31.3	36.0	60.8	67.2	87.8	85.0	100.8	122.3	137.6	143.1	134.3	117.8
% Gas Reserves	74%	73%	66%	61%	60%	67%	74%	76%	76%	77%	75%	76%	76%
% Oil Reserves	26%	27%	34%	39%	40%	33%	26%	24%	24%	23%	25%	24%	24%
Proven Reserve Life Index	8.4	7.8	9.1	9.2	8.3	11.5	17.9	17.9	18.3	20.1	19.8	19.4	18.8
Proven Reserve Additions:													
Gas Additions (bcf)	49.7	26.6	19.0	100.4	44.3	146.8	37.8	84.9	142.5	101.1	26.1	269.6	392.3
Oil Additions (mmbbls)	5.5	2.6	5.3	14.0	8.1	6.1	-6.6	3.7	8.5	3.1	5.8	17.3	14.5
Total Additions (mmboe)	13.8	7.1	8.4	30.7	15.4	30.6	-0.3	17.8	32.2	19.9	10.2	62.3	79.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	6.8	8.4	10.8	15.4	18.9	20.8	29.1	18.3	28.5	6.6	5.1	40.2	87.6
Net Acquisitions	7.1	(2.1)	(3.6)	16.8	(2.5)	1.8	(34.3)	(0.3)	1.1	(1.0)	(0.0)	0.0	(34.6)
Revisions of Estimates	(0.2)	0.8	1.3	-1.5	-1.0	7.9	4.9	-0.1	2.6	14.4	5.1	22.1	26.8
Components as % of Total Additions:													
Extensions, Discoveries and Additions	49.8%	118.1%	127.4%	50.2%	122.3%	68.2%	nm	nm	nm	nm	nm	64.5%	109.7%
Net Acquisitions	51.4%	-29.8%	-42.5%	54.6%	-15.9%	6.0%	nm	nm	nm	nm	nm	0.0%	-43.3%
Revisions of Estimates	-1.2%	11.7%	15.1%	-4.9%	-6.5%	25.8%	nm	nm	nm	nm	nm	35.4%	33.6%
Additions as % of Production:													
Gas	323.0%	170.8%	130.4%	490.8%	189.5%	629.0%	166.1%	399.2%	492.4%	335.3%	81.7%	296.4%	290.6%
Oil	nm	186.7%	351.0%	445.5%	195.8%	162.3%	-196.7%	176.6%	453.4%	167.8%	305.1%	309.6%	130.9%
Total	408.7%	176.4%	214.6%	469.1%	192.7%	399.7%	-3.9%	316.4%	481.6%	290.6%	140.8%	300.0%	238.0%
Additions as % of Reserves:													
Gas	39.5%	19.5%	13.4%	44.8%	18.4%	41.8%	10.0%	18.4%	25.7%	15.9%	4.0%	44.1%	73.3%
Oil	74.0%	30.7%	42.9%	59.6%	29.9%	20.8%	-30.0%	15.6%	28.2%	9.7%	16.4%	53.5%	50.6%
Total	48.5%	22.6%	23.4%	50.5%	23.0%	34.8%	-0.3%	17.7%	26.3%	14.5%	7.1%	46.4%	67.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$29.2	$13.3	$43.0	$16.9	$17.1	$11.3	$9.2	$9.3	$3.4	$3.0	$4.7	$11.1	$29.6
Exploration & Development	$151.6	$99.9	$198.6	$363.4	$241.9	$202.4	$268.7	$183.7	$78.3	$180.8	$75.0	$334.1	$786.4
Net Acquisitions	$294.7	-$69.3	-$128.2	-$25.8	-$96.6	$39.1	-$228.7	-$66.9	$3.0	-$36.9	-$7.6	-$41.5	-$337.1
Total Expenditures	$475.5	$43.9	$113.5	$354.5	$162.3	$252.8	$49.2	$126.1	$84.7	$146.8	$72.1	$303.7	$478.9
Expenditures as % of Total:													
Land & Seismic	6.1%	30.3%	37.9%	4.8%	10.5%	4.5%	18.7%	7.4%	4.0%	2.0%	6.5%	3.6%	6.2%
Exploration & Development	31.9%	227.5%	175.1%	102.5%	149.0%	80.1%	nm	nm	nm	nm	nm	110.0%	164.2%
Net Acquisitions	62.0%	-157.8%	-113.0%	-7.3%	-59.5%	15.5%	-465.0%	-53.1%	3.5%	-25.2%	-10.5%	-13.7%	-70.4%
Cashflow (US$million)	$120.5	$73.5	$93.2	$174.1	$186.7	$167.6	$155.9	$64.9	$59.9	$84.1	$71.8	$215.8	$436.6
Cashflow (US$/boe)	$35.83	$18.32	$23.68	$26.59	$23.31	$21.93	$21.81	$11.51	$8.96	$12.28	$9.94	$10.40	$13.02
Recycle Ratio	1.0x	3.0x	1.8x	2.3x	2.2x	2.7x	-0.1x	1.6x	3.4x	1.7x	1.4x	2.1x	2.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$27.07	$12.32	$20.08	$27.30	$14.47	$7.44	$8.18	$10.61	$2.63	$8.77	$7.83	$5.54	$7.13
Net Acquisition Costs	$41.66	$32.82	$35.69	-$1.54	$39.41	$21.28	$6.67	$200.47	$2.83	$35.75	$498.92	-$3,090.78	$9.75
All Sources (incl. revisions)	$34.57	$6.21	$13.44	$11.54	$10.51	$8.27	-$176.66	$7.06	$2.63	$7.37	$7.09	$4.88	$6.00
Exploration & Development (excl. revisions)	$26.42	$13.55	$22.46	$24.64	$13.71	$10.26	$9.54	$10.54	$2.87	$27.94	$15.67	$8.59	$9.31
Net Acquisition Costs	$41.66	$32.82	$35.69	-$1.54	$39.41	$21.28	$6.67	$200.47	$2.83	$35.75	$498.92	-$3,090.78	$9.75
All Sources (excl. revisions)	$34.17	$7.03	$15.83	$11.00	$9.88	$11.15	-$9.58	$7.01	$2.86	$26.48	$14.22	$7.55	$9.03

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Crew Energy Inc. (CR - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.02	15.06	15.69	16.23	16.52	15.77	13.75	9.60	7.68	7.66	7.95	7.77	9.35
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.17	1.26	1.60	2.18	2.29	2.37	2.41	1.83	1.33	1.34	1.29	1.32	1.64
F&D Costs (1-Year)	34.57	6.21	13.44	11.54	10.51	8.27	7.45	7.06	2.63	7.37	7.09	4.88	6.00
Return on Capital	18.26	3.02	7.61	6.67	5.49	6.02	8.84	8.39	3.20	10.00	9.46	6.33	7.54
Income Taxes	9.83	1.26	2.73	2.35	3.12	1.80	2.93	2.80	1.03	4.71	3.15	2.36	2.68
Breakeven Oil Price	**76.86**	**26.81**	**41.07**	**38.97**	**37.93**	**34.23**	**35.38**	**29.68**	**15.86**	**31.08**	**28.95**	**22.65**	**27.21**
Quality Differential	11.88	6.28	6.35	19.97	24.81	20.95	16.70	10.34	5.09	5.52	9.45	6.69	9.42
Required Brent Price	**88.74**	**33.08**	**47.42**	**58.94**	**62.75**	**55.17**	**52.09**	**40.02**	**20.95**	**36.60**	**38.40**	**29.34**	**36.63**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.34	22.64	24.47	25.27	26.24	24.22	20.10	15.73	12.20	13.89	15.31	13.74	15.63
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.47	1.89	2.49	3.39	3.64	3.64	3.53	3.00	2.11	2.43	2.49	2.34	2.74
F&D Costs (1-Year)	41.18	9.19	17.19	18.44	16.54	18.34	12.95	13.90	4.24	15.29	9.84	8.22	11.41
Return on Capital	21.89	4.22	9.48	9.64	7.46	11.02	7.90	13.84	4.99	19.73	12.79	10.33	12.16
Income Taxes	11.79	1.76	3.40	3.39	4.24	3.29	2.62	4.61	1.60	9.29	4.26	3.84	4.33
Breakeven Oil Price	**92.66**	**39.71**	**57.03**	**60.14**	**58.12**	**60.51**	**47.11**	**51.08**	**25.13**	**60.63**	**44.70**	**38.46**	**46.27**
Quality Differential	14.90	9.44	9.91	31.09	39.41	32.17	24.42	16.94	8.08	10.02	18.20	12.10	15.53
Required Brent Price	**107.56**	**49.15**	**66.94**	**91.22**	**97.53**	**92.68**	**71.53**	**68.02**	**33.22**	**70.65**	**62.90**	**50.56**	**61.81**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.34	22.64	24.47	25.27	26.24	24.22	20.10	15.73	12.20	13.89	15.31	13.74	15.63
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.47	1.89	2.49	3.39	3.64	3.64	3.53	3.00	2.11	2.43	2.49	2.34	2.74
F&D Costs (1-Year)	99.10	22.04	19.85	56.75	29.82	108.28	35.67	26.88	15.68	18.24	18.98	17.70	23.09
Return on Capital	52.64	10.13	10.95	29.49	13.51	65.11	21.75	26.84	18.46	23.35	24.44	22.21	24.61
Income Taxes	28.35	4.22	3.93	10.38	7.68	19.45	7.22	8.95	5.93	10.99	8.15	8.26	8.76
Breakeven Oil Price	**197.90**	**60.92**	**61.69**	**125.29**	**80.89**	**220.70**	**88.26**	**81.39**	**54.38**	**68.91**	**69.37**	**64.23**	**74.83**
Quality Differential	14.90	9.44	9.91	31.09	39.41	32.17	24.42	16.94	8.08	10.02	18.20	12.10	15.53
Required Brent Price	**212.80**	**70.36**	**71.60**	**156.38**	**120.31**	**252.86**	**112.69**	**98.33**	**62.46**	**78.93**	**87.57**	**76.33**	**90.36**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

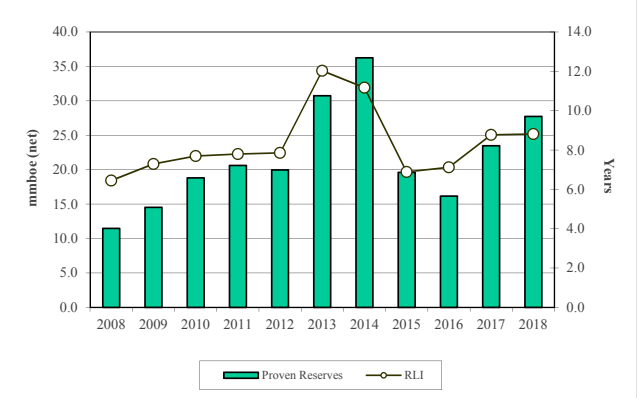
Delphi Energy Corp. (DEE - TSX)

US$, net

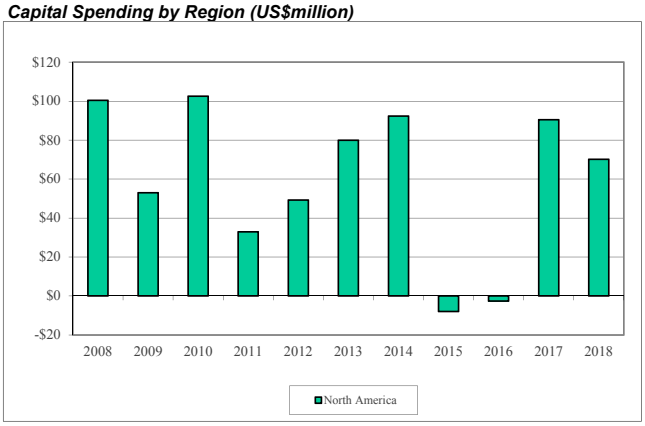
- Delphi reported results of operations of $1.73/boe, in line with the results of $1.83/boe last year.
- The company's one-year F&D cost came in at $9.86/boe. On a realized oil:gas price ratio basis, F&D costs were $15.33/boe, while the costs for PD reserves was recorded at $37.13/boe.
- Delphi's operations imply a required Brent breakeven oil price of $64.71/boe while its PD costs suggest a breakeven oil price of $102.33/boe.
- The company reported ROCE of 11.8% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

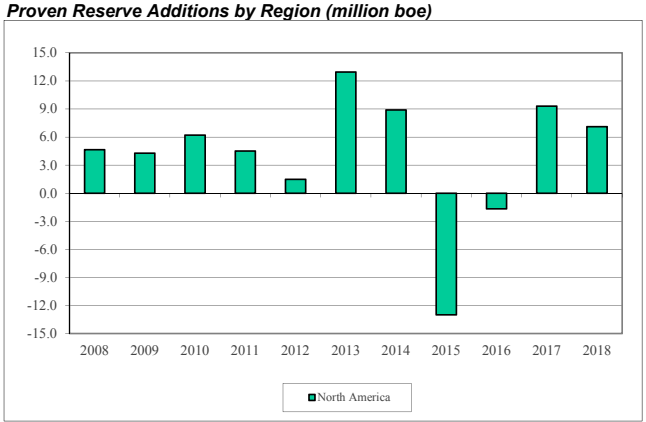
Proven Reserves vs RLI



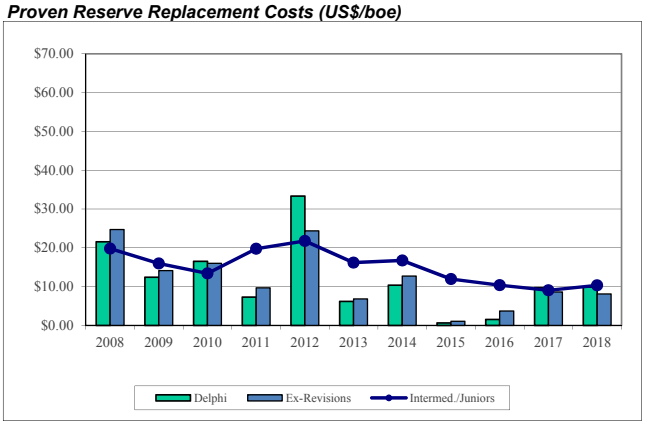
Capital Spending by Region (US$million)



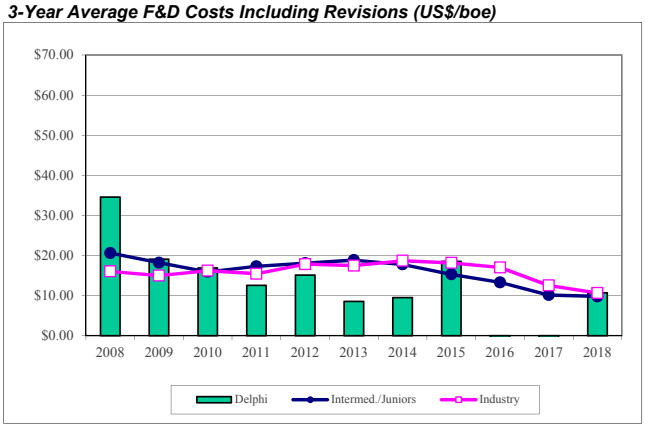
Proven Reserve Additions by Region (million boe)



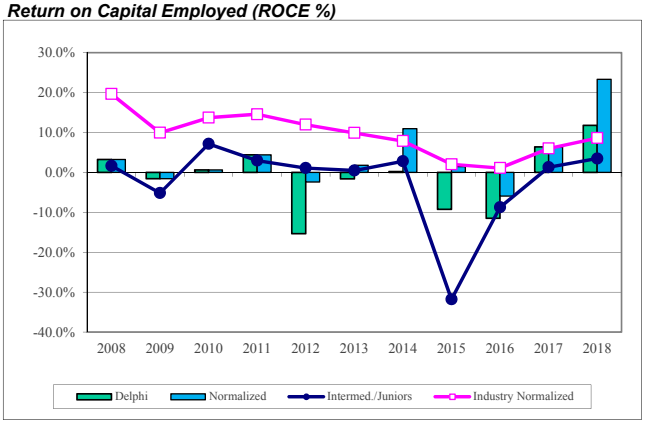
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

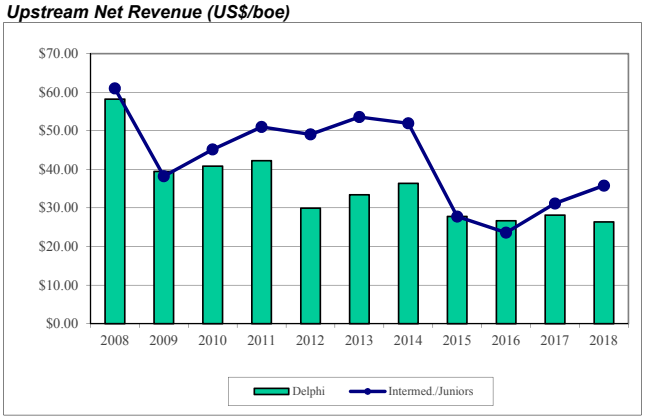
See pages F1 to F4 for analyst coverage.

Delphi Energy Corp. (DEE - TSX)

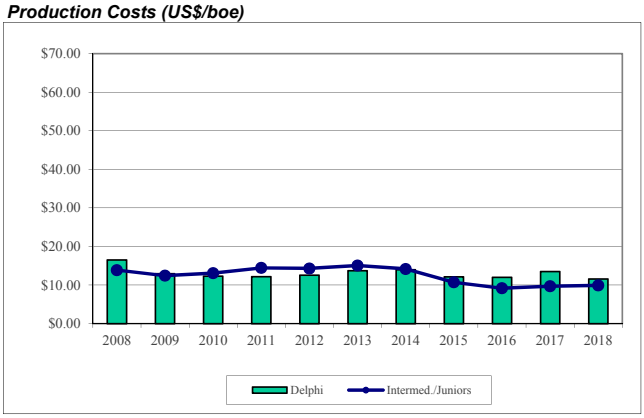
US$/boe, net

North America

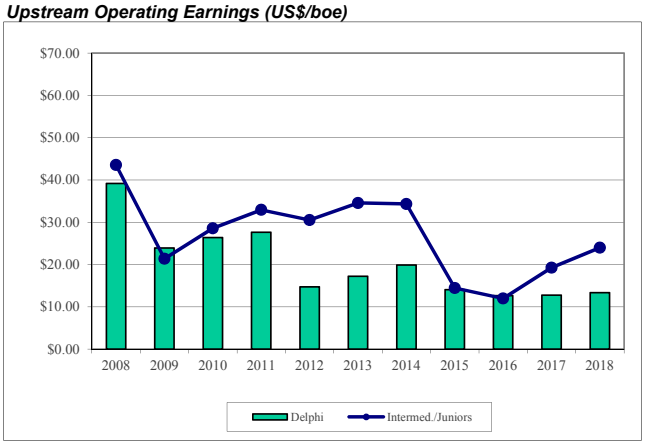
Upstream Net Revenue (US$/boe)



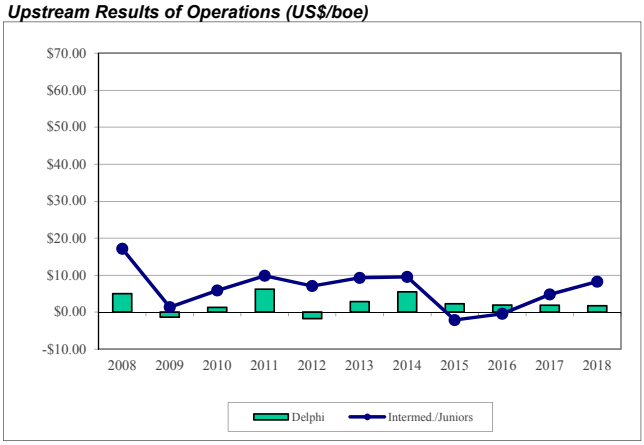
Production Costs (US$/boe)



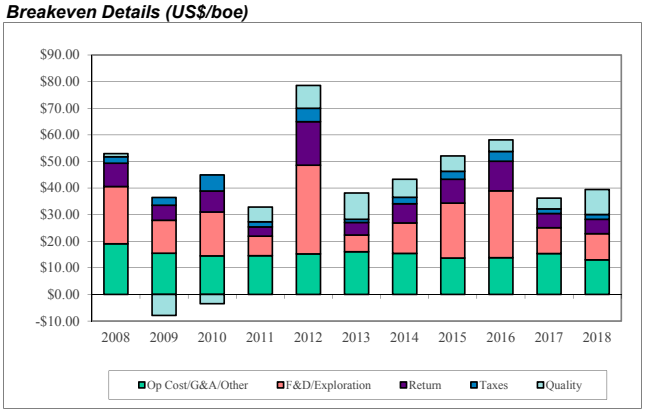
Upstream Operating Earnings (US$/boe)



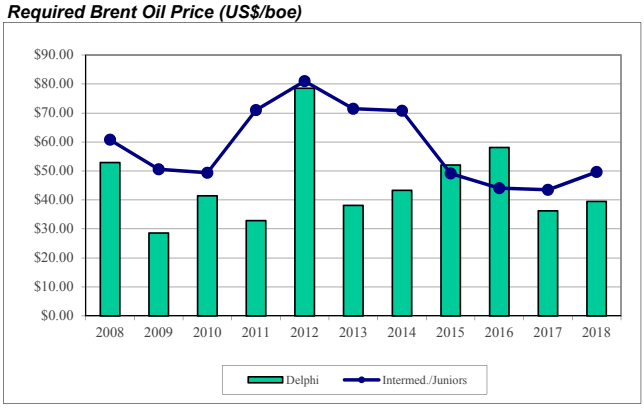
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Delphi Energy Corp. (DEE - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	103	75	96	107	72	85	126	57	47	73	92
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	5	6
Other	1	1	2	2	3	(1)	15	21	(7)	10	10
Total Revenue and Other Income	104	77	99	110	75	84	141	78	40	88	109
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	29	26	30	32	32	35	45	35	27	36	36
Marketing Expenses	-	-	-	-	-	-	-	-	-	4	2
Exploration / Dry Hole Costs	-	-	-	-	-	0	3	-	0	-	-
General and Administrative	5	5	5	6	7	6	5	4	4	5	4
Depreciation, Depletion and Amortization	58	52	59	48	43	35	41	31	23	28	35
Interest, net	5	4	5	6	6	7	8	7	7	9	11
Other	1	1	1	(0)	64	18	55	36	10	1	1
Earnings Before Income Tax	6	(11)	(1)	18	(76)	(18)	(16)	(36)	(32)	5	19
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	1	(4)	(1)	6	(18)	(4)	(2)	(3)	(1)	-	-
Total Income Taxes	1	(4)	(1)	6	(18)	(4)	(2)	(3)	(1)	-	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	5	(7)	(1)	12	(58)	(14)	(14)	(33)	(31)	5	19
Discontinued Operations/Extraordinary Items	-	-	-	-	-	3	7	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	5	(7)	(1)	12	(58)	(11)	(7)	(33)	(31)	5	19
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	5	(7)	(1)	12	(58)	(11)	(7)	(33)	(31)	5	19

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	5	(7)	(1)	12	(58)	(14)	(14)	(33)	(31)	5	19
Charges and Credits Not Impacting Cash	59	48	58	54	25	31	39	29	22	28	35
Other	0	2	2	1	65	19	33	38	33	(7)	(18)
Cash Flow From Operations	64	43	59	67	32	36	58	33	24	26	36
Change in Working Capital / Other	(5)	(4)	(2)	2	(1)	(6)	9	3	2	(2)	6
Net Cash From Operating Activities	60	40	57	69	31	30	67	36	26	24	42
Total Capital Expenditures	(72)	(30)	(103)	(100)	(84)	(70)	(91)	(45)	(41)	(92)	(70)
Acquisitions, net	(28)	(10)	(0)	(16)	35	(10)	(1)	53	43	1	0
Other	9	(5)	(2)	28	(19)	19	(10)	(6)	(6)	14	(11)
Net Cash From Investing Activities	(91)	(44)	(104)	(88)	(68)	(61)	(103)	2	(4)	(76)	(82)
Net Change in Debt	9	(15)	23	(22)	2	34	34	(39)	(26)	24	42
Net Change in Common Stock	26	19	27	21	31	-	-	-	-	26	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	1	0	1	19	(0)	(1)	3	0	4	2	-
Net Cash From Financing Activities	37	4	51	19	33	33	36	(39)	(23)	52	42
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	5	(1)	4	(0)	(4)	2	1	(1)	(1)	(1)	2
Cash and Equivalents, Beginning of Year	(4)	1	(0)	4	4	0	2	2	2	1	1
Cash and Equivalents, End of Year	1	(0)	4	4	0	2	3	2	1	1	3

Source: BMO Capital Markets, Company Reports

Delphi Energy Corp. (DEE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	19	19	27	36	19	26	38	31	25	39	46
Net Property, Plant and Equipment	325	299	374	416	383	412	396	248	205	276	274
Other Assets	-	-	-	-	-	-	3	3	0	1	3
Total Assets	344	319	400	452	402	439	436	283	229	316	323
Total Current Liabilities	35	29	28	49	28	68	55	40	36	58	40
Long-term Debt	86	71	102	83	84	97	124	74	59	85	129
Deferred Income Taxes	32	21	23	24	6	5	3	-	-	-	-
Other Liabilities and Deferred Credits	9	10	14	25	42	43	45	20	19	20	22
Total Liabilities	162	132	167	181	160	213	228	134	114	164	191
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	165	176	222	279	305	296	280	242	234	268	268
Contributed Surplus (Paid-in Capital)	9	10	12	13	15	16	16	15	15	16	17
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	8	0	(1)	(20)	(78)	(87)	(88)	(109)	(136)	(134)	(154)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	2	2	2
Total Shareholders' Equity	182	186	233	272	242	226	209	148	116	152	133
Total Liabilities and Shareholders' Equity	344	319	400	452	402	439	436	283	229	316	323
Return on Capital Employed (ROCE)	**3.2%**	**-1.5%**	**0.7%**	**4.4%**	**-15.3%**	**-1.6%**	**0.2%**	**-9.2%**	**-11.5%**	**6.4%**	**11.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$58.18	$39.43	$40.84	$42.23	$29.94	$33.40	$36.34	$27.76	$26.65	$28.14	$26.35	$27.03	$29.31
Production Costs	$16.48	$12.95	$12.29	$12.17	$12.54	$13.72	$13.97	$12.12	$12.01	$13.48	$11.58	$12.33	$12.66
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.12	$1.01	$0.00	$0.19	$0.00	$0.00	$0.05	$0.26
DD&A	$32.78	$25.96	$24.12	$18.01	$17.04	$13.68	$12.54	$11.03	$10.09	$10.33	$11.05	$10.54	$11.10
G&A / Other	$2.54	$2.56	$2.20	$2.43	$2.68	$2.36	$1.50	$1.58	$1.81	$1.89	$1.41	$1.68	$1.62
Pre-tax Results of Operations	$6.38	-$2.04	$2.24	$9.62	-$2.32	$3.53	$7.32	$3.03	$2.55	$2.45	$2.31	$2.42	$3.67
Income Taxes	$1.40	-$0.70	$0.97	$3.41	-$0.55	$0.70	$1.83	$0.76	$0.64	$0.61	$0.58	$0.61	$0.92
Results of Operations	$4.98	-$1.34	$1.27	$6.21	-$1.77	$2.83	$5.49	$2.27	$1.91	$1.83	$1.73	$1.82	$2.75

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Delphi Energy Corp. (DEE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	25.4	28.4	33.0	32.4	32.9	32.0	38.8	34.4	25.0	28.2	31.9	28.4	31.7
Liquids Production (b/d)	628	724	1,199	1,836	1,478	1,674	2,417	2,059	2,045	2,638	3,309	2,664	2,494
Total Production (boe/d)	4,867	5,458	6,695	7,239	6,960	7,005	8,889	7,797	6,213	7,334	8,624	7,390	7,771
% Gas Production	87%	87%	82%	75%	79%	76%	73%	74%	67%	64%	62%	64%	68%
% Oil Production	13%	13%	18%	25%	21%	24%	27%	26%	33%	36%	38%	36%	32%
Proven Reserves:													
Closing Gas Reserves (bcf)	61.6	77.0	91.9	97.8	95.3	139.5	161.1	83.9	66.9	92.7	104.4	88.0	101.8
Closing Oil Reserves (mmbbls)	1.2	1.7	3.5	4.3	4.1	7.5	9.4	5.6	5.0	8.0	10.3	7.8	7.7
Closing Total Proven Reserves (mmboe)	11.5	14.5	18.8	20.6	20.0	30.7	36.2	19.6	16.2	23.5	27.7	22.5	24.6
% Gas Reserves	90%	88%	81%	79%	80%	76%	74%	71%	69%	66%	63%	65%	69%
% Oil Reserves	10%	12%	19%	21%	20%	24%	26%	29%	31%	34%	37%	35%	31%
Proven Reserve Life Index	6.4	7.3	7.7	7.7	7.8	12.0	11.1	6.9	7.1	8.8	8.8	8.2	8.5
Proven Reserve Additions:													
Gas Additions (bcf)	25.2	20.9	24.5	17.6	7.3	54.2	36.0	-62.2	-7.7	33.5	22.6	48.4	22.3
Oil Additions (mmbbls)	0.5	0.8	2.1	1.6	0.3	3.9	2.9	-2.6	-0.4	3.7	3.3	6.7	6.9
Total Additions (mmboe)	4.7	4.3	6.2	4.5	1.5	13.0	8.9	-13.0	-1.7	9.3	7.1	14.7	10.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	3.3	1.4	6.6	3.6	4.0	11.7	7.0	2.2	1.6	10.5	8.7	20.8	29.9
Net Acquisitions	0.8	2.4	(0.2)	(0.2)	(2.0)	(0.0)	0.3	(9.8)	(2.3)	-	-	-2.3	-11.9
Revisions of Estimates	0.6	0.5	(0.2)	1.1	(0.5)	1.2	1.6	(5.4)	(1.0)	(1.2)	(1.5)	-3.7	(7.4)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	70.3%	31.8%	106.6%	80.7%	268.9%	90.6%	78.2%	-16.8%	-97.3%	113.1%	121.7%	141.2%	281.3%
Net Acquisitions	17.0%	56.0%	-3.4%	-5.2%	-132.2%	0.0%	3.3%	75.5%	139.2%	0.0%	0.0%	-15.8%	-111.4%
Revisions of Estimates	12.7%	12.2%	-3.2%	24.5%	-36.7%	9.5%	18.5%	41.2%	58.1%	-13.1%	-21.7%	-25.3%	-70.0%
Additions as % of Production:													
Gas	271.3%	202.0%	203.1%	148.8%	60.5%	464.4%	254.0%	-494.6%	-84.6%	325.8%	194.6%	156.0%	38.5%
Oil	200.0%	296.0%	488.8%	235.3%	49.5%	nm	328.0%	-350.3%	-51.9%	386.7%	276.1%	228.7%	152.3%
Total	262.1%	214.5%	254.3%	170.7%	58.1%	nm	274.1%	-456.5%	-73.9%	347.7%	225.8%	182.2%	75.0%
Additions as % of Reserves:													
Gas	40.9%	27.2%	26.6%	18.0%	7.6%	38.9%	22.3%	-74.1%	-11.6%	36.1%	21.7%	55.0%	21.9%
Oil	38.5%	46.2%	61.5%	36.7%	6.5%	52.2%	30.8%	-47.0%	-7.7%	46.3%	32.3%	85.6%	90.3%
Total	40.6%	29.4%	33.0%	21.9%	7.4%	42.1%	24.5%	-66.3%	-10.4%	39.6%	25.6%	65.6%	43.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$1.4	$1.1	$7.6	$7.3	$0.5	$0.4	$0.5	$0.0	$0.3	$1.7	$0.1	$2.1	$2.6
Exploration & Development	$71.0	$28.8	$95.2	$30.4	$83.3	$69.4	$90.9	$45.0	$40.4	$90.0	$70.1	$200.5	$336.3
Net Acquisitions	$28.0	$23.1	-$0.2	-$4.8	-$34.5	$10.0	$0.9	-$52.9	-$43.2	-$1.2	-$0.1	-$44.6	-$96.6
Total Expenditures	$100.4	$53.0	$102.5	$32.9	$49.2	$79.9	$92.3	-$7.9	-$2.6	$90.4	$70.1	$158.0	$242.3
Expenditures as % of Total:													
Land & Seismic	1.4%	2.0%	7.4%	22.1%	1.0%	0.5%	0.5%	-0.5%	-10.9%	1.9%	0.1%	1.3%	1.1%
Exploration & Development	70.7%	54.5%	92.8%	92.6%	169.2%	86.9%	98.5%	-566.8%	-1559.8%	99.5%	100.0%	126.9%	138.8%
Net Acquisitions	27.9%	43.5%	-0.2%	-14.7%	-70.2%	12.6%	1.0%	667.2%	1670.7%	-1.4%	-0.2%	-28.2%	-39.9%
Cashflow (US$million)	$64.8	$43.2	$59.2	$69.1	$31.8	$36.1	$57.7	$33.1	$24.1	$25.8	$35.8	$85.8	$176.5
Cashflow (US$/boe)	$36.45	$21.70	$24.23	$26.15	$12.53	$14.12	$17.77	$11.63	$10.64	$9.65	$11.37	$10.60	$12.45
Recycle Ratio	1.7x	1.8x	1.5x	3.6x	0.4x	2.3x	1.7x	19.1x	6.9x	1.0x	1.2x	1.0x	0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$18.75	$15.91	$16.00	$7.95	$24.43	$5.39	$10.62	-$14.16	$61.86	$9.85	$9.88	$11.86	$15.06
Net Acquisition Costs	$35.27	$9.63	$1.07	$20.52	$17.69	nm	$3.21	$5.39	$18.54	na	na	$19.12	$8.15
All Sources (incl. revisions)	$21.56	$12.39	$16.50	$7.29	$33.34	$6.17	$10.38	$0.61	$1.55	$9.72	$9.86	$10.72	$22.77
Exploration & Development (excl. revisions)	$22.12	$21.99	$15.51	$10.36	$21.10	$5.96	$13.13	$20.66	$24.95	$8.71	$8.12	$9.73	$11.32
Net Acquisition Costs	$35.27	$9.63	$1.07	$20.52	$17.69	nm	$3.21	$5.39	$18.54	na	na	$19.12	$8.15
All Sources (excl. revisions)	$24.69	$14.11	$15.98	$9.66	$24.39	$6.82	$12.73	$1.04	$3.68	$8.59	$8.10	$8.55	$13.40

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Delphi Energy Corp. (DEE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	16.48	12.95	12.29	12.17	12.54	13.72	13.97	12.12	12.01	13.48	11.58	12.33	12.66
Exploration Expense	-	-	-	-	-	0.12	1.01	-	0.19	-	-	0.05	0.26
G&A/Other	2.54	2.56	2.20	2.43	2.68	2.36	1.50	1.58	1.81	1.89	1.41	1.68	1.62
F&D Costs (1-Year)	21.56	12.39	16.50	7.29	33.34	6.17	10.38	20.66	24.95	9.72	9.86	14.84	15.11
Return on Capital	8.75	5.64	7.88	3.51	16.36	4.71	7.24	8.95	11.09	5.32	5.40	7.56	8.08
Income Taxes	2.46	2.93	6.04	1.93	5.07	1.17	2.41	2.98	3.70	1.77	1.80	2.52	2.69
Breakeven Oil Price	**51.79**	**36.48**	**44.90**	**27.33**	**69.99**	**28.25**	**36.51**	**46.29**	**53.75**	**32.18**	**30.05**	**38.98**	**40.42**
Quality Differential	1.14	(7.88)	(3.46)	5.53	8.57	9.87	6.79	5.78	4.35	4.06	9.42	5.94	6.08
Required Brent Price	**52.92**	**28.60**	**41.44**	**32.85**	**78.56**	**38.12**	**43.30**	**52.07**	**58.09**	**36.24**	**39.47**	**44.92**	**46.50**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	25.84	27.18	27.22	27.77	35.30	28.52	24.57	20.76	17.26	20.72	19.77	19.32	20.72
Exploration Expense	-	-	-	-	-	0.25	1.78	-	0.27	-	-	0.08	0.43
G&A/Other	3.98	5.37	4.87	5.54	7.55	4.90	2.63	2.70	2.61	2.90	2.41	2.63	2.65
F&D Costs (1-Year)	34.50	24.45	29.37	14.28	29.40	11.77	17.28	34.33	36.45	14.45	15.33	22.08	23.57
Return on Capital	13.76	10.93	14.20	6.43	14.13	9.05	11.99	15.00	15.90	7.74	8.35	11.20	12.51
Income Taxes	3.87	5.68	10.89	3.53	4.38	2.24	4.00	5.00	5.30	2.58	2.78	3.73	4.17
Breakeven Oil Price	**81.94**	**73.60**	**86.55**	**57.55**	**90.77**	**56.73**	**62.25**	**77.78**	**77.79**	**48.39**	**48.64**	**59.06**	**64.03**
Quality Differential	1.78	(16.53)	(7.67)	12.62	24.13	20.52	11.94	9.90	6.25	6.24	16.07	9.52	10.08
Required Brent Price	**83.73**	**57.08**	**78.87**	**70.17**	**114.90**	**77.25**	**74.19**	**87.69**	**84.04**	**54.63**	**64.71**	**68.58**	**74.11**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	25.84	27.18	27.22	27.77	35.30	28.52	24.57	20.76	17.26	20.72	19.77	19.32	20.72
Exploration Expense	-	-	-	-	-	0.25	1.78	-	0.27	-	-	0.08	0.43
G&A/Other	3.98	5.37	4.87	5.54	7.55	4.90	2.63	2.70	2.61	2.90	2.41	2.63	2.65
F&D Costs (1-Year)	52.34	31.41	38.76	20.98	120.28	37.01	29.04	24.63	7.81	14.78	37.13	15.23	22.68
Return on Capital	20.93	14.00	18.83	9.45	57.78	28.28	20.16	10.83	3.42	8.00	20.21	7.67	12.04
Income Taxes	5.88	7.27	14.43	5.19	17.90	7.01	6.72	3.61	1.14	2.67	6.74	2.56	4.01
Breakeven Oil Price	**108.96**	**85.23**	**104.11**	**68.93**	**238.82**	**105.96**	**84.90**	**62.53**	**32.51**	**49.08**	**86.26**	**47.49**	**62.52**
Quality Differential	1.78	(16.53)	(7.67)	12.62	24.13	20.52	11.94	9.90	6.25	6.24	16.07	9.52	10.08
Required Brent Price	**110.75**	**68.71**	**96.43**	**81.55**	**262.94**	**126.48**	**96.84**	**72.43**	**38.76**	**55.31**	**102.33**	**57.01**	**72.60**

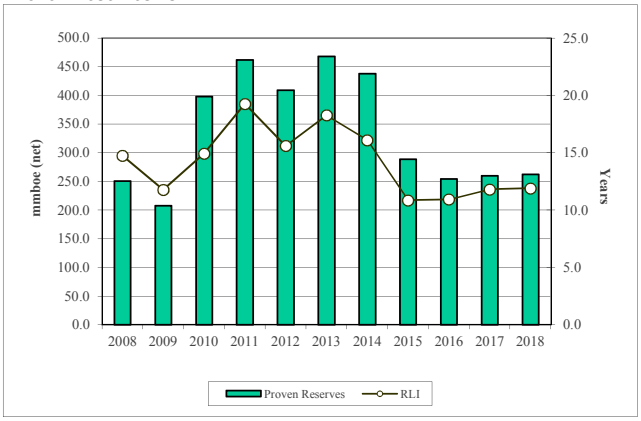
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

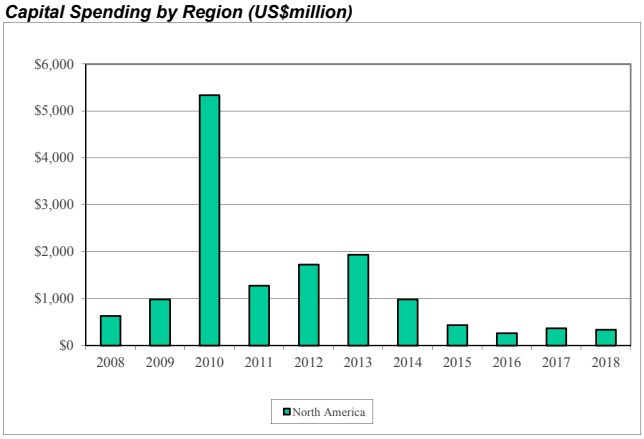
Denbury Resources (DNR - NYSE) US$, net

- Denbury reported strong results of operations $23.72/boe in 2018 compared to $11.06/boe in 2017.
- One-year F&D costs came in at $13.67/boe. On a realized oil:gas price ratio basis, F&D costs were $14.10/boe while the costs for PD reserves were $15.51/boe.
- Denbury's 2018 results imply a required Brent breakeven oil price of $58.30/boe on total proved reserves, while its PD cost assessment implied a Brent breakeven oil price of $61.07/boe.
- The company reported ROCE of 9.4% in 2018 relative to a normalized 2017 ROCE of 2.6% last year.

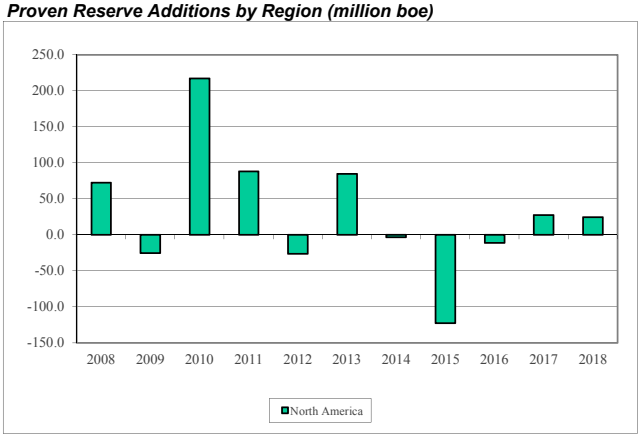
Proven Reserves vs RLI



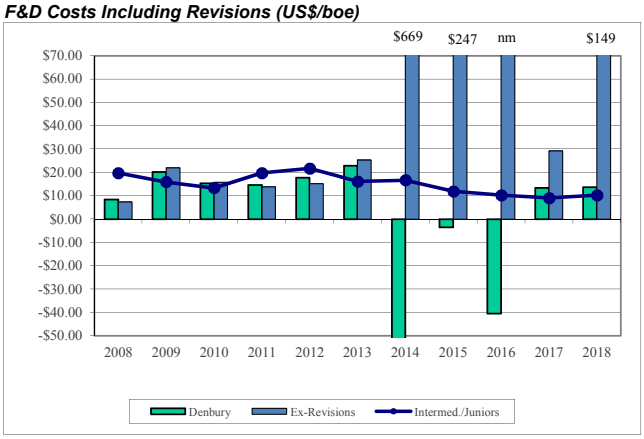
Capital Spending by Region (US$million)



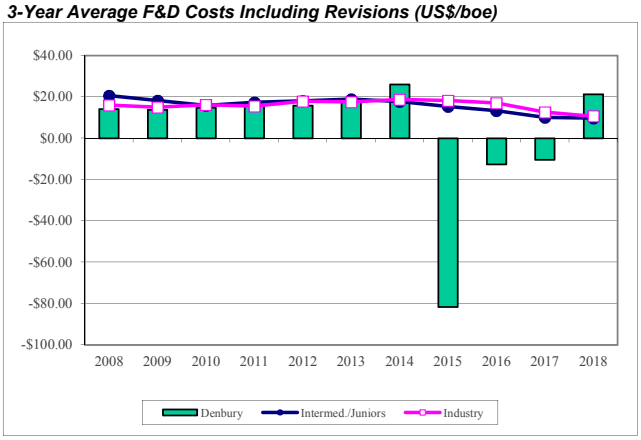
Proven Reserve Additions by Region (million boe)



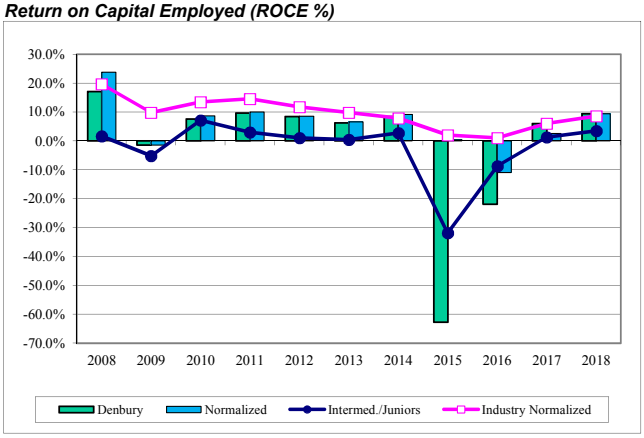
F&D Costs Including Revisions (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



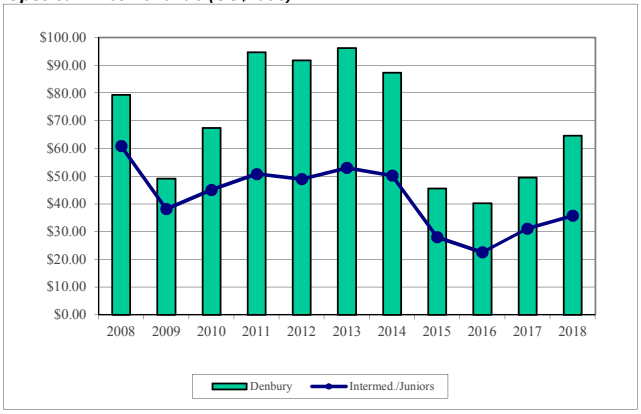
Source: BMO Capital Markets, Company Reports

Denbury Resources (DNR - NYSE)

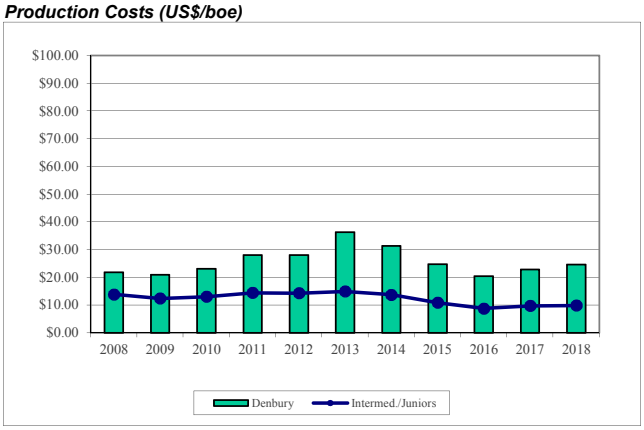
US$/boe, net

North America

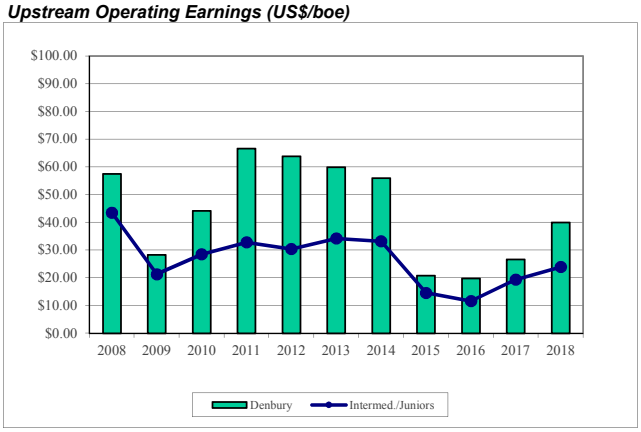
Upstream Net Revenue (US$/boe)



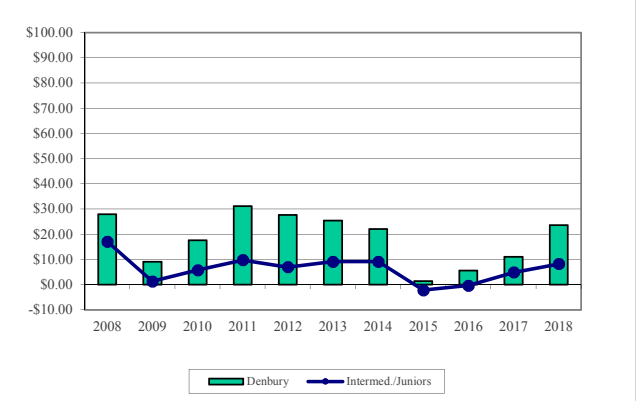
Production Costs (US$/boe)



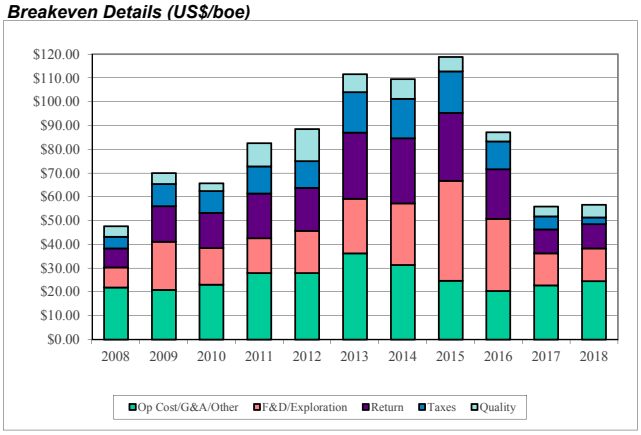
Upstream Operating Earnings (US$/boe)



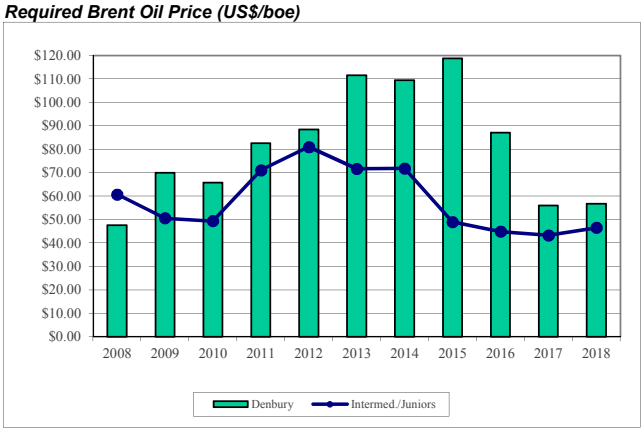
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Denbury Resources (DNR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,347	867	1,793	2,269	2,410	2,466	2,372	1,213	936	1,090	1,423
Midstream / Downstream Revenue	14	13	19	23	26	28	45	31	25	26	31
Other	5	2	109	17	20	23	18	14	15	14	20
Total Revenue and Other Income	1,366	882	1,922	2,309	2,456	2,517	2,435	1,258	976	1,130	1,474
Crude Oil and Product Purchases	-	-	-	-	-	-					
Production and Transportation Expenses	320	339	599	669	707	924	842	630	496	538	597
Marketing Expenses	56	35	31	26	53	49	64	56	57	52	50
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	
General and Administrative	60	116	134	126	144	145	158	145	110	102	71
Depreciation, Depletion and Amortization	222	238	434	409	508	510	593	532	846	208	216
Interest, net	33	47	176	164	154	141	183	159	125	99	70
Other	26	236	68	(9)	35	106	(429)	6,063	861	85	59
Earnings Before Income Tax	619	(129)	479	924	857	642	1,023	(6,326)	(1,520)	47	410
Current Income Taxes	41	5	33	8	76	10	(43)	(8)	(1)	(21)	(16)
Future Income Taxes	195	(52)	160	342	256	223	430	(1,932)	(543)	(96)	103
Total Income Taxes	236	(47)	194	351	331	233	387	(1,941)	(544)	(117)	87
Minority Interest	5	7	-			-				-	-
Earnings From Continuing Operations	388	(75)	286	573	525	410	635	(4,385)	(976)	163	323
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	388	(75)	286	573	525	410	635	(4,385)	(976)	163	323
Preferred Stock Dividends	-	-	14	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	388	(75)	272	573	525	410	635	(4,385)	(976)	163	323

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	388	(75)	286	573	525	410	635	(4,385)	(976)	163	323
Charges and Credits Not Impacting Cash	643	187	595	775	781	732	1,023	3,539	1,114	112	320
Other	(251)	429	(106)	35	91	130	(390)	1,665	127	54	(183)
Cash Flow From Operations	780	540	774	1,383	1,398	1,272	1,269	819	264	329	460
Change in Working Capital / Other	(5)	(9)	82	(178)	13	89	(46)	45	(45)	(62)	70
Net Cash From Operating Activities	775	531	856	1,205	1,411	1,361	1,223	864	219	267	530
Total Capital Expenditures	(995)	(1,010)	(973)	(1,404)	(1,584)	(1,178)	(1,067)	(534)	(248)	(268)	(346)
Acquisitions, net	(3)	50	619	(194)	218	(78)	(9)	(27)	43	(87)	7
Other	4	(10)	(1)	(8)	(11)	(19)	(1)	11	(0)	(3)	5
Net Cash From Investing Activities	(995)	(970)	(355)	(1,606)	(1,377)	(1,275)	(1,077)	(550)	(205)	(357)	(333)
Financing Activities:											
Net Change in Debt	150	440	(33)	247	315	152	206	(220)	23	174	(475)
Net Change in Common Stock	14	13	13	(195)	(251)	(282)	(211)	(12)	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-				
Cash Dividends Paid	-	-	-	-	-	-	(87)	(65)	(0)	(0)	-
Other	13	(11)	(120)	(14)	(18)	(43)	(43)	(37)	(38)	(85)	318
Net Cash From Financing Activities	177	443	(140)	38	46	(172)	(135)	(334)	(15)	89	(157)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(43)	4	361	(363)	80	(86)	11	(20)	(1)	(2)	39
Cash and Equivalents, Beginning of Year	60	17	21	382	19	99	12	23	3	2	16
Cash and Equivalents, End of Year	17	21	382	19	99	12	23	3	2	0	55

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Denbury Resources (DNR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	415	256	864	684	1,543	415	813	345	181	202	296
Net Property, Plant and Equipment	3,002	3,703	6,737	8,012	8,077	9,851	10,352	5,376	3,988	4,167	4,319
Other Assets	172	311	1,463	1,489	1,519	1,523	1,563	199	105	102	108
Total Assets	3,590	4,270	9,065	10,184	11,139	11,789	12,728	5,920	4,275	4,471	4,723
Liabilities and Stockholders' Equity											
Total Current Liabilities	386	394	579	661	616	675	640	373	433	458	365
Long-term Debt	853	1,301	2,416	2,670	3,104	3,261	3,536	3,278	2,910	2,979	2,664
Deferred Income Taxes	433	516	1,548	1,919	2,153	2,399	2,695	854	294	198	310
Other Liabilities and Deferred Credits	78	87	141	128	150	152	153	166	169	188	243
Total Liabilities	1,750	2,298	4,684	5,378	6,024	6,487	7,024	4,671	3,806	3,823	3,581
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Common Shares	0	0	0	0	0	0	0	0	0	0	0
Contributed Surplus (Paid-in Capital)	708	911	3,046	3,090	3,136	3,187	3,230	2,354	2,535	2,508	2,685
Preferred Stock	-	-	-	-	-	-	-			-	-
Retained Earnings	1,140	1,064	1,336	1,909	2,435	2,844	3,392	(1,059)	(2,019)	(1,856)	(1,533)
Other / Comprehensive Income (Loss)	(7)	(3)	(2)	(194)	(457)	(730)	(919)	(46)	(48)	(4)	(11)
Total Shareholders' Equity	1,840	1,972	4,381	4,806	5,115	5,301	5,704	1,249	468	648	1,142
Total Liabilities and Shareholders' Equity	3,590	4,270	9,065	10,184	11,139	11,789	12,728	5,920	4,275	4,471	4,723
Return on Capital Employed (ROCE)	**17.1%**	**-1.5%**	**7.6%**	**9.7%**	**8.4%**	**6.2%**	**8.4%**	**-62.8%**	**-21.9%**	**6.0%**	**9.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$79.42	$49.18	$67.37	$94.68	$91.85	$96.19	$87.33	$45.61	$40.23	$49.51	$64.59	$51.24	$58.10
Production Costs	$21.89	$20.92	$23.14	$28.03	$28.02	$36.32	$31.32	$24.78	$20.45	$22.84	$24.63	$22.60	$25.04
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$12.54	$13.40	$15.82	$16.42	$18.69	$18.71	$20.36	$18.50	$10.96	$9.44	$9.83	$10.09	$14.24
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations	$44.99	$14.87	$28.41	$50.23	$45.14	$41.17	$35.64	$2.33	$8.81	$17.23	$30.13	$18.54	$18.82
Income Taxes	$17.01	$5.72	$10.80	$19.09	$17.38	$15.64	$13.54	$0.88	$3.15	$6.17	$6.41	$5.21	$6.13
Results of Operations	$27.98	$9.15	$17.62	$31.14	$27.76	$25.53	$22.10	$1.44	$5.66	$11.06	$23.72	$13.34	$12.69

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Denbury Resources (DNR - NYSE)

Exhibit 5: Reserve Replacement Performance

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:														
Gas Production (mmcf/d)	97.1	89.7	67.8	78.1	29.5	29.2	23.7	23.0	22.2	12.7	11.3	10.9	11.6	16.0
Liquids Production (b/d)	27,926	31,521	36,973	59,918	60,737	67,019	66,285	70,605	69,164	61,608	58,411	58,532	59,517	63,664
Total Production (boe/d)	44,116	46,468	48,280	72,927	65,661	71,884	70,242	74,432	72,860	63,732	60,299	60,341	61,457	66,333
% Gas Production	37%	32%	23%	18%	7%	7%	6%	5%	5%	3%	3%	3%	3%	4%
% Oil Production	63%	68%	77%	82%	93%	93%	94%	95%	95%	97%	97%	97%	97%	96%
Proven Reserves:														
Closing Gas Reserves (bcf)	358.6	428.0	88.1	358.0	625.3	481.7	490.0	452.5	38.4	44.4	42.8	43.1	43.4	124.2
Closing Oil Reserves (mmbbls)	135.0	179.1	192.9	338.3	357.7	329.1	386.7	362.3	282.3	247.1	252.6	255.0	251.6	279.9
Closing Total Proven Reserves (mmboe)	194.7	250.5	207.6	397.9	461.9	409.4	468.3	437.7	288.6	254.5	259.8	262.2	258.8	300.6
% Gas Reserves	31%	28%	7%	15%	23%	20%	17%	17%	2%	3%	3%	3%	3%	7%
% Oil Reserves	69%	72%	93%	85%	77%	80%	83%	83%	98%	97%	97%	97%	97%	93%
Proven Reserve Life Index	12.1	14.8	11.8	14.9	19.3	15.6	18.3	16.1	10.9	10.9	11.8	11.9	11.5	12.3
Proven Reserve Additions:														
Gas Additions (bcf)	105.2	102.2	-315.2	298.4	278.1	-132.9	17.0	-29.2	-406.0	10.7	2.5	4.2	17.5	-417.7
Oil Additions (mmbbls)	19.0	55.7	27.2	167.3	41.6	-4.1	81.7	1.4	-54.8	-12.7	26.8	23.8	38.0	(15.4)
Total Additions (mmboe)	36.5	72.7	-25.3	217.0	88.0	-26.3	84.6	-3.4	-122.5	-10.9	27.3	24.5	40.9	-85.1
Addition Components (mmboe):														
Extensions, Discoveries and Additions	41.2	82.2	16.2	78.2	51.9	86.1	34.1	1.5	0.4	0.0	1.9	2.3	4.2	6.0
Acquisitions	0.7	3.7	28.8	258.9	40.2	28.1	42.7	0.0	1.4	0.0	10.6	0.0	10.6	12.0
Dispositions	(5.5)	-2.4	-74.2	(129.2)	-	(123.9)	-	(0.2)	-	(4.3)	-	(0.5)	(4.8)	(5.0)
Revisions of Estimates	0.1	(10.7)	3.9	9.1	-4.2	-16.6	7.7	-4.7	-124.3	-6.6	14.8	22.7	30.9	(98.1)
Components as % of Total Additions:														
Extensions, Discoveries and Additions	112.7%	113.1%	-64.0%	36.0%	59.0%	-327.5%	40.4%	-43.0%	-0.3%	0.0%	7.1%	9.3%	10.3%	-7.1%
Net Acquisitions	2.0%	5.0%	-113.8%	119.3%	45.7%	-106.9%	50.5%	0.0%	-1.1%	-0.3%	38.7%	0.0%	25.9%	-14.1%
Revisions of Estimates	0.3%	-14.8%	-15.5%	4.2%	-4.8%	63.2%	9.1%	136.8%	101.4%	60.5%	54.2%	92.6%	75.5%	115.3%
Additions as % of Production:														
Gas	296.8%	312.1%	-1272.9%	1047.4%	2579.0%	-1247.5%	195.9%	-348.2%	-5016.7%	229.2%	61.5%	107.2%	136.9%	-1429.6%
Oil	186.3%	483.7%	201.9%	764.8%	187.8%	-17.0%	337.8%	5.6%	-217.2%	-56.3%	125.9%	111.3%	58.3%	-13.3%
Total	226.8%	428.5%	-143.5%	815.2%	367.1%	-100.2%	329.8%	-12.6%	-460.7%	-46.8%	123.9%	111.2%	60.7%	-70.3%
Additions as % of Reserves:														
Gas	29.3%	23.9%	-358.0%	83.4%	44.5%	-27.6%	3.5%	-6.4%	-1057.7%	24.0%	5.9%	9.9%	40.2%	-336.3%
Oil	14.1%	31.1%	14.1%	49.4%	11.6%	-1.3%	21.1%	0.4%	-19.4%	-5.1%	10.6%	9.3%	15.1%	-5.5%
Total	18.8%	29.0%	-12.2%	54.5%	19.0%	-6.4%	18.1%	-0.8%	-42.4%	-4.3%	10.5%	9.3%	15.8%	-28.3%

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):														
Exploration	$42.7	$5.7	$4.6	$8.7	$31.5	$12.0	$2.1	$5.5	$0.7	$0.2	$0.3	$1.0	$1.5	$7.7
Development	$553.3	$575.9	$292.5	$658.8	$1,144.2	$1,111.3	$913.1	$964.7	$407.0	$251.6	$274.3	$338.2	$864.1	$2,235.9
Acquisitions	$75.6	$48.9	$690.4	$4,671.1	$104.3	$606.3	$1,025.0	$11.8	$28.2	$13.6	$90.8	$2.0	$106.5	$146.6
Total Expenditures	$671.7	$630.6	$987.6	$5,338.6	$1,280.0	$1,729.6	$1,940.2	$982.0	$436.0	$265.4	$365.5	$341.3	$972.1	$2,390.1
Expenditures as % of Total:														
Exploration	6.4%	0.9%	0.5%	0.2%	2.5%	0.7%	0.1%	0.6%	0.2%	0.1%	0.1%	0.3%	0.2%	0.3%
Development	82.4%	91.3%	29.6%	12.3%	89.4%	64.3%	47.1%	98.2%	93.4%	94.8%	75.1%	99.1%	88.9%	93.5%
Net Acquisitions	11.3%	7.8%	69.9%	87.5%	8.1%	35.1%	52.8%	1.2%	6.5%	5.1%	24.9%	0.6%	11.0%	6.1%
Cashflow (US$million)	$608.5	$779.8	$540.0	$774.3	$1,382.9	$1,397.6	$1,271.8	$1,268.8	$818.9	$264.3	$329.3	$459.5	$1,053.1	$3,140.8
Cashflow (US$/boe)	$37.79	$45.98	$30.65	$29.09	$57.70	$53.27	$49.60	$46.70	$30.79	$11.36	$14.96	$20.86	$15.65	$25.95
Recycle Ratio	2.4x	5.5x	1.5x	1.9x	4.0x	3.0x	2.2x	-0.2x	-8.7x	-0.3x	1.1x	1.5x	0.7x	-0.9x

	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):														
Exploration & Development (incl. revisions)	$14.43	$8.14	$14.79	$7.64	$24.63	$16.16	$21.86	-$302.67	-$3.29	-$38.22	$16.43	$13.59	$24.67	-$24.38
Acquisition Costs	$103.93	$13.34	$24.00	$18.05	$2.59	$21.57	$24.01	na	$20.09	$378.83	$8.61	na	$10.06	$12.22
All Sources (incl. revisions)	$15.98	$8.39	$20.21	$15.42	$14.55	$17.72	$22.95	-$306.36	-$3.56	-$40.51	$13.40	$13.67	$23.79	-$28.10
Exploration & Development (excl. revisions)	$14.48	$7.08	$18.37	$8.54	$22.64	$13.04	$26.81	$660.91	$1,142.13	nm	$141.85	$148.28	$204.94	$370.91
Acquisition Costs	$103.93	$13.34	$24.00	$18.05	$2.59	$21.57	$24.01	na	$20.09	$378.83	$8.61	na	$10.06	$12.22
All Sources (excl. revisions)	$16.03	$7.34	$21.98	$15.84	$13.89	$15.14	$25.25	$668.97	$247.43	$7,372.53	$29.26	$149.16	$65.62	$132.46

Source: BMO Capital Markets, Company Reports

Denbury Resources (DNR - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.89	20.92	23.14	28.03	28.02	36.32	31.32	24.78	20.45	22.84	24.63	22.60	25.04
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	8.39	20.21	15.42	14.55	17.72	22.95	25.99	41.95	30.29	13.40	13.67	19.12	25.06
Return on Capital	8.02	14.94	14.78	18.79	18.00	27.72	27.26	28.53	20.88	10.02	10.31	13.92	19.63
Income Taxes	4.87	9.35	9.06	11.52	11.27	16.99	16.71	17.49	11.64	5.59	2.79	6.24	10.01
Breakeven Oil Price	**43.18**	**65.42**	**62.40**	**72.89**	**75.00**	**103.98**	**101.29**	**112.74**	**83.26**	**51.85**	**51.40**	**61.88**	**79.74**
Quality Differential	4.41	4.63	3.34	9.76	13.44	7.67	8.26	6.03	3.90	4.13	5.33	4.45	5.53
Required Brent Price	**47.59**	**70.05**	**65.74**	**82.65**	**88.44**	**111.65**	**109.55**	**118.77**	**87.16**	**55.98**	**56.73**	**66.33**	**85.27**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	25.56	24.55	26.09	29.62	29.65	38.01	32.55	25.70	20.95	23.36	25.21	23.13	25.79
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	9.47	20.69	20.16	23.30	17.15	23.57	25.35	42.15	30.35	13.55	14.10	19.34	25.10
Return on Capital	9.26	17.77	20.24	26.23	15.30	25.40	23.93	29.50	20.98	10.16	10.65	14.10	19.42
Income Taxes	5.63	11.12	12.41	16.08	9.58	15.57	14.66	18.08	11.70	5.66	2.88	6.32	9.90
Breakeven Oil Price	**49.91**	**74.12**	**78.91**	**95.22**	**71.67**	**102.54**	**96.49**	**115.42**	**83.98**	**52.74**	**52.84**	**62.89**	**80.21**
Quality Differential	5.15	5.44	3.77	10.31	14.22	8.03	8.58	6.25	4.00	4.23	5.45	4.56	5.70
Required Brent Price	**55.06**	**79.56**	**82.68**	**105.54**	**85.89**	**110.58**	**105.07**	**121.67**	**87.98**	**56.97**	**58.30**	**67.45**	**85.92**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	25.56	24.55	26.09	29.62	29.65	38.01	32.55	25.70	20.95	23.36	25.21	23.13	25.79
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	28.94	21.97	30.28	29.03	27.22	29.78	28.25	55.55	48.05	8.69	15.51	13.97	31.21
Return on Capital	28.06	18.55	29.68	32.68	24.23	32.19	26.64	38.81	33.24	6.52	11.72	10.24	23.92
Income Taxes	17.05	11.61	18.19	20.03	15.17	19.73	16.33	23.79	18.53	3.63	3.17	4.59	12.20
Breakeven Oil Price	**99.60**	**76.68**	**104.25**	**111.36**	**96.26**	**119.71**	**103.77**	**143.85**	**120.76**	**42.20**	**55.62**	**51.94**	**93.12**
Quality Differential	5.15	5.44	3.77	10.31	14.22	8.03	8.58	6.25	4.00	4.23	5.45	4.56	5.70
Required Brent Price	**104.76**	**82.12**	**108.02**	**121.68**	**110.48**	**127.74**	**112.35**	**150.10**	**124.76**	**46.43**	**61.07**	**56.50**	**98.82**

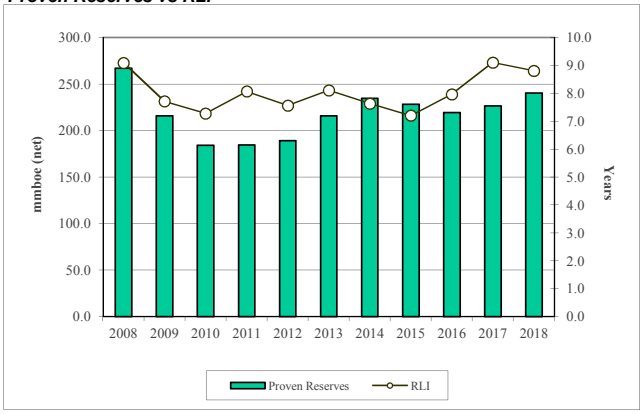
Source: BMO Capital Markets, Company Reports

Enerplus Corporation (ERF - TSX) US$, net

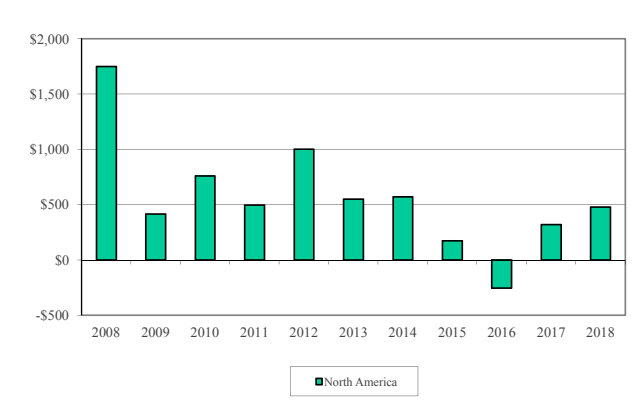
- Enerplus reported results of operations of $11.46/boe, higher than $6.81/boe in 2017.
- The company's one-year F&D costs came in at $11.21/boe compared to $9.60/boe last year. On a realized oil:gas price ratio basis, F&D costs were $15.09/boe versus $14.79/boe last year, while costs for PD reserves were $18.90/boe versus $23.46/boe the previous year.
- Enerplus' 2018 operations imply a required Brent breakeven oil price of $59.11/boe, while its PD costs suggest a Brent breakeven of $65.50/boe.
- The company reported a return on capital of 18.9% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

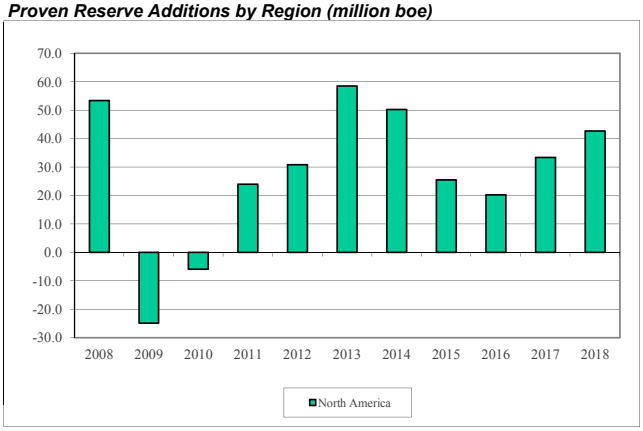
Proven Reserves vs RLI



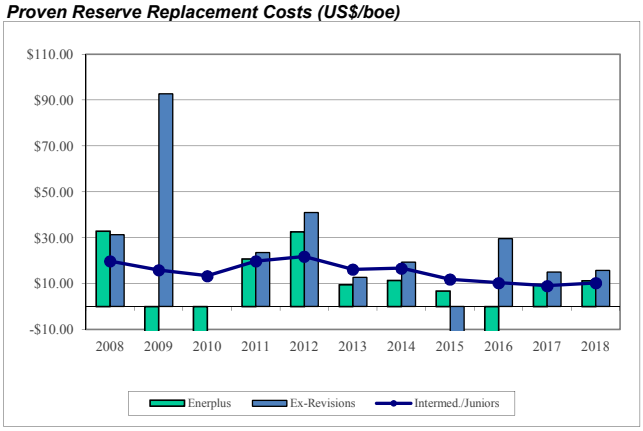
Capital Spending by Region (US$million)



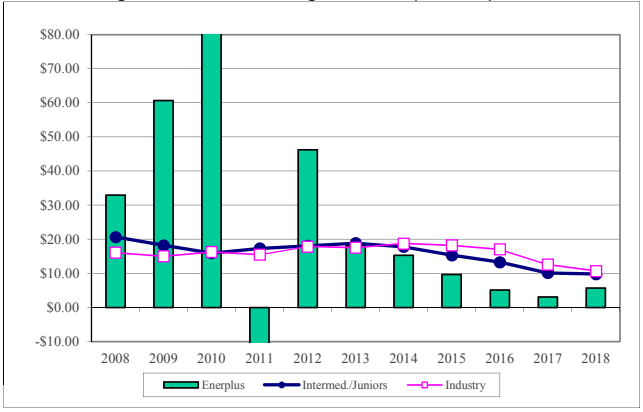
Proven Reserve Additions by Region (million boe)



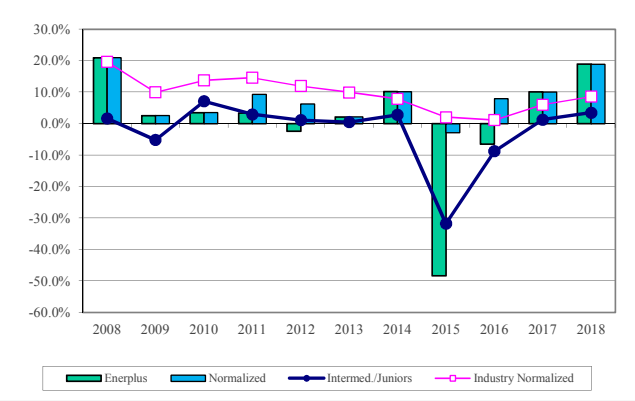
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

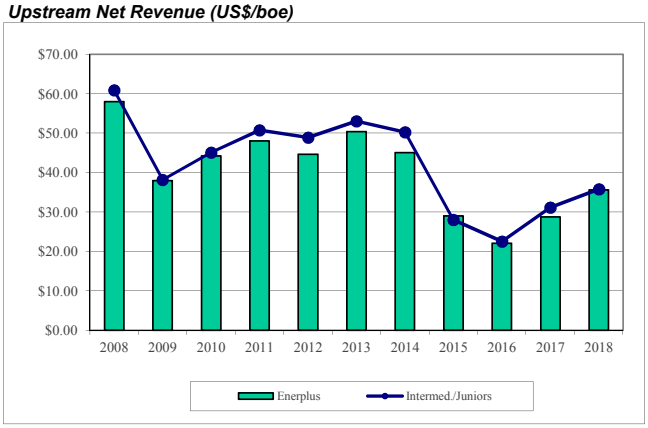
See pages F1 to F4 for analyst coverage.

Enerplus Corporation (ERF - TSX)

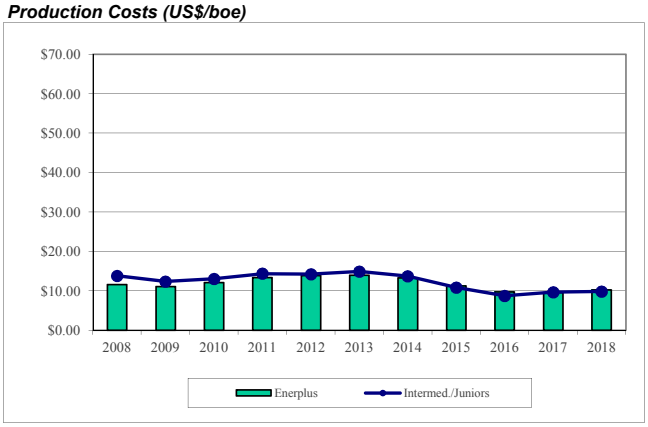
US$/boe, net

North America

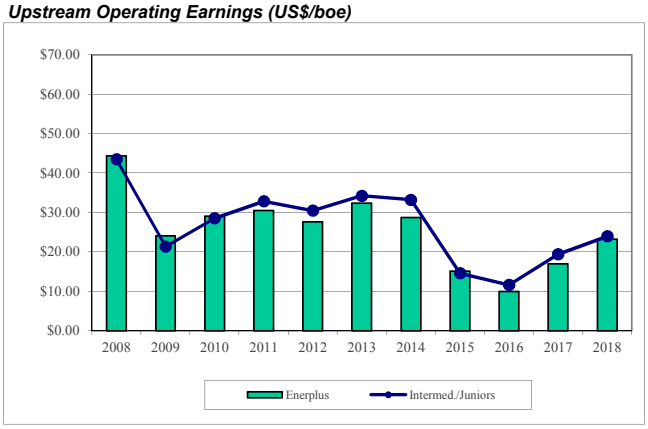
Upstream Net Revenue (US$/boe)



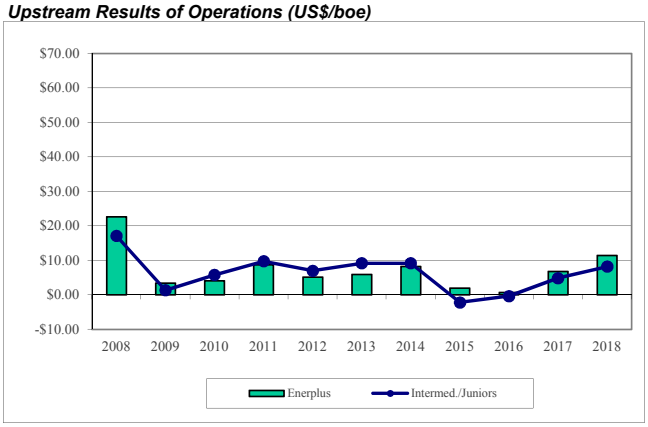
Production Costs (US$/boe)



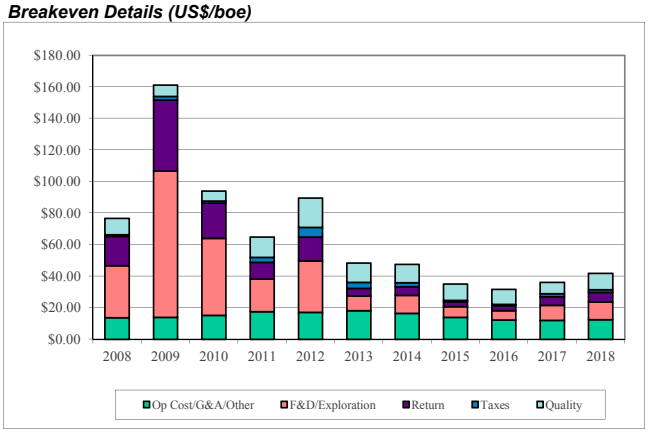
Upstream Operating Earnings (US$/boe)



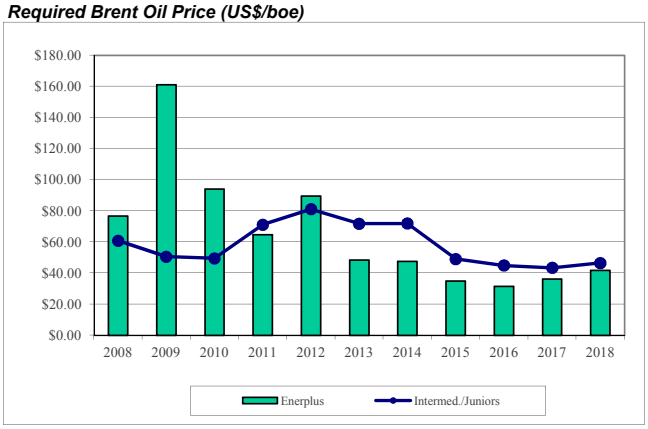
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Enerplus Corporation (ERF - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,794	926	1,072	1,132	1,097	1,314	1,382	693	546	710	998
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	71	29	24	(27)	92	(41)	212	112	(22)	11	68
Total Revenue and Other Income	1,865	956	1,096	1,104	1,189	1,273	1,595	804	524	721	1,066
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	340	311	307	305	346	372	407	356	268	238	279
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	62	78	77	96	78	107	95	81	65	57	58
Depreciation, Depletion and Amortization	604	573	627	438	511	576	513	397	249	193	235
Interest, net	23	50	45	61	70	57	58	53	34	30	28
Other	24	(52)	(1)	60	400	77	125	1,241	(214)	(43)	93
Earnings Before Income Tax	812	(3)	41	144	(217)	84	396	(1,324)	121	246	372
Current Income Taxes	21	0	(29)	82	2	8	5	(13)	(2)	(37)	(21)
Future Income Taxes (Recovery)	(48)	(82)	(53)	(49)	(63)	30	120	(118)	(177)	100	101
Total Income Taxes	(27)	(82)	(83)	33	(61)	38	125	(131)	(179)	63	80
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	838	78	123	111	(156)	47	271	(1,193)	300	183	292
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	838	78	123	111	(156)	47	271	(1,193)	300	183	292
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	838	78	123	111	(156)	47	271	(1,193)	300	183	292

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	838	78	123	111	(156)	47	271	(1,193)	300	183	292
Charges and Credits Not Impacting Cash	556	491	573	753	980	606	634	279	299	294	335
Other	(184)	91	1	(305)	(180)	63	(144)	1,334	69	(12)	(46)
Cash Flow From Operations	1,210	660	698	558	644	716	760	420	668	465	582
Change in Working Capital / Other	(19)	23	(15)	72	(109)	29	(47)	(56)	(432)	(97)	(11)
Net Cash From Operating Activities	1,191	683	683	631	535	744	713	364	236	367	570
Total Capital Expenditures	(555)	(269)	(531)	(887)	(865)	(668)	(741)	(390)	(159)	(354)	(466)
Acquisitions, net	462	(148)	(142)	(258)	207	117	168	217	411	33	(15)
Other	9	(44)	89	689	(90)	61	(4)	(37)	(334)	-	-
Net Cash From Investing Activities	(84)	(461)	(584)	(456)	(748)	(490)	(577)	(210)	(82)	(321)	(481)
Net Change in Debt	(422)	(37)	194	169	171	(90)	28	(76)	(296)	(40)	(22)
Net Issuance of Shares	67	209	34	-	351	14	28	3	167	-	(54)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Distributions Paid	(742)	(324)	(373)	(393)	(278)	(166)	(180)	(103)	(27)	(22)	(23)
Other	(12)	(8)	(17)	46	(33)	(17)	(15)	24	(3)	-	-
Net Cash From Financing Activities	(1,109)	(160)	(162)	(178)	211	(258)	(140)	(152)	(159)	(63)	(99)
Effect of Exchange Rate on Cash	7	(3)	(0)	1	2	1	3	2	(0)	(19)	23
Net Increase/(Decrease) in Cash	5	59	(63)	(3)	(0)	(2)	(1)	4	(5)	(36)	13
Cash and Equivalents, Beginning of Year	2	6	71	8	6	5	3	2	6	303	267
Cash and Equivalents, End of Year	7	65	8	6	5	3	2	6	1	267	280

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Enerplus Corporation (ERF - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	278	217	201	149	225	227	386	173	389	375	488
Net Property, Plant and Equipment	4,949	4,405	4,833	5,267	4,997	2,371	2,403	929	558	694	1,009
Other Assets	649	581	632	373	193	978	909	919	1,046	971	910
Total Assets	5,876	5,202	5,666	5,790	5,415	3,576	3,697	2,021	1,994	2,040	2,407
Total Current Liabilities	325	320	427	544	357	467	480	196	185	210	273
Long-term Debt	652	508	757	902	1,025	948	940	958	559	497	492
Deferred Income Taxes	612	495	488	458	366	-	-	-	-	-	-
Breakeven Details (US$/boe)	196	203	203	570	617	283	264	164	147	98	97
Total Liabilities	1,784	1,526	1,874	2,475	2,364	1,699	1,684	1,318	890	806	862
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Shareholder Capital	5,161	5,035	5,590	3,482	3,820	2,974	2,826	2,454	2,543	2,612	2,576
Contributed Surplus (Paid-in Capital)	-	-	-	27	36	37	42	44	56	58	36
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	(1,114)	(1,286)	(1,668)	(283)	(737)	(1,085)	(941)	(2,110)	(1,762)	(1,638)	(1,368)
Accumulated Cash Distributions / Other	46	(73)	(131)	88	(68)	(49)	86	315	267	203	300
Total Shareholder Equity	4,092	3,676	3,792	3,315	3,051	1,877	2,013	703	1,103	1,234	1,544
Total Liabilities and Shareholder Equity	5,876	5,202	5,666	5,790	5,415	3,576	3,697	2,021	1,994	2,040	2,407
Return on Capital Employed (ROCE)	**21.0%**	**2.5%**	**3.5%**	**3.4%**	**-2.4%**	**2.1%**	**10.2%**	**-48.4%**	**-6.5%**	**10.1%**	**18.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$58.03	$37.96	$44.27	$48.00	$44.63	$50.37	$45.12	$28.98	$22.05	$28.81	$35.59	$26.66	$35.13
Production Costs	$11.57	$11.13	$12.14	$13.35	$13.86	$14.00	$13.27	$11.25	$9.75	$9.56	$10.24	$10.26	$11.62
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$20.57	$20.47	$24.75	$19.17	$20.44	$21.67	$16.71	$12.54	$9.03	$7.77	$8.62	$9.98	$13.64
G&A / Other	$2.11	$2.78	$3.03	$4.18	$3.14	$4.03	$3.10	$2.57	$2.37	$2.30	$2.15	$2.42	$2.87
Pre-tax Results of Operations	$23.79	$3.58	$4.35	$11.31	$7.20	$10.68	$12.04	$2.62	$0.90	$9.17	$14.59	$3.99	$7.00
Income Taxes	$1.19	$0.18	$0.22	$2.59	$2.02	$4.76	$3.80	$0.65	$0.22	$2.36	$3.13	$0.96	$1.80
Results of Operations	$22.60	$3.40	$4.13	$8.71	$5.17	$5.91	$8.24	$1.96	$0.67	$6.81	$11.46	$3.03	$5.20

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Enerplus Corporation (ERF - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	285.0	274.7	243.5	210.8	213.8	239.0	292.0	296.3	242.1	211.4	208.4	220.6	250.0
Liquids Production (b/d)	32,984	30,868	28,777	27,538	32,858	33,018	35,467	37,398	35,043	32,919	39,957	35,973	36,157
Total Production (boe/d)	80,476	76,660	69,355	62,664	68,489	72,846	84,130	86,789	75,397	68,152	74,684	72,744	77,830
% Gas Production	59%	60%	59%	56%	52%	55%	58%	57%	54%	52%	46%	51%	54%
% Oil Production	41%	40%	41%	44%	48%	45%	42%	43%	46%	48%	54%	49%	46%
Proven Reserves:													
Closing Gas Reserves (bcf)	894.4	634.0	515.7	481.1	474.8	683.6	747.3	675.7	675.1	697.6	711.1	694.6	701.3
Closing Oil Reserves (mmbbls)	118.1	110.2	98.5	104.4	110.0	101.9	110.1	115.7	106.9	110.2	121.8	113.0	112.9
Closing Total Proven Reserves (mmboe)	267.1	215.9	184.4	184.6	189.2	215.8	234.6	228.3	219.4	226.5	240.3	228.7	229.8
% Gas Reserves	56%	49%	47%	43%	42%	53%	53%	49%	51%	51%	49%	51%	51%
% Oil Reserves	44%	51%	53%	57%	58%	47%	47%	51%	49%	49%	51%	49%	49%
Proven Reserve Life Index	9.1	7.7	7.3	8.1	7.6	8.1	7.6	7.2	8.0	9.1	8.8	8.6	8.2
Proven Reserve Additions:													
Gas Additions (bcf)	272.1	(171.5)	(31.2)	45.4	72.1	306.8	185.4	34.9	99.7	106.9	93.1	299.6	520.0
Oil Additions (mmbbls)	8.0	3.7	(0.7)	16.4	18.8	7.3	19.4	19.6	3.6	15.5	27.1	46.3	85.3
Total Additions (mmboe)	53.3	(24.9)	(5.9)	24.0	30.8	58.4	50.3	25.4	20.3	33.3	42.7	96.2	172.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	10.6	4.4	15.7	23.3	25.9	31.6	36.4	9.6	9.9	29.0	31.3	70.3	116.3
Net Acquisitions	45.3	0.1	(16.0)	(2.2)	(1.4)	11.7	(6.8)	(16.0)	(18.4)	(7.7)	(1.0)	(27.2)	(50.0)
Revisions of Estimates	(2.6)	(29.4)	(5.6)	2.9	6.4	15.2	20.7	31.8	28.7	12.1	12.3	53.1	105.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	19.9%	-17.8%	-264.5%	97.1%	83.9%	54.0%	72.4%	37.9%	49.1%	87.1%	73.5%	73.1%	67.7%
Net Acquisitions	84.9%	-0.2%	270.4%	-9.0%	-4.6%	20.0%	-13.6%	-63.1%	-91.1%	-23.2%	-2.3%	-28.2%	-29.1%
Revisions of Estimates	-4.8%	118.1%	94.1%	11.9%	20.8%	26.0%	41.2%	125.2%	142.0%	36.2%	28.8%	55.2%	61.4%
Additions as % of Production:													
Gas	261.6%	-171.1%	-35.1%	59.0%	92.4%	351.8%	174.0%	32.3%	112.8%	138.5%	122.4%	124.0%	114.0%
Oil	66.2%	32.8%	-7.0%	163.5%	156.8%	60.6%	149.8%	143.7%	28.5%	129.1%	186.1%	117.5%	129.3%
Total	181.5%	-89.0%	-23.4%	104.9%	123.3%	219.8%	163.8%	80.3%	73.6%	134.0%	156.5%	120.8%	121.1%
Additions as % of Reserves:													
Gas	30.4%	-27.1%	-6.0%	9.4%	15.2%	44.9%	24.8%	5.2%	14.8%	15.3%	13.1%	43.1%	74.1%
Oil	6.8%	3.3%	-0.7%	15.7%	17.1%	7.2%	17.6%	16.9%	3.4%	14.1%	22.3%	41.0%	75.5%
Total	20.0%	-11.5%	-3.2%	13.0%	16.3%	27.1%	21.4%	11.1%	9.2%	14.7%	17.8%	42.1%	74.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (USD$million):													
Land & Seismic	$0.0	$0.0	$0.0	$0.0	$61.8	$0.0	$0.0	$0.0	$0.0	$2.1	$5.0	$7.1	$7.1
Exploration & Development	$554.9	$269.4	$618.3	$887.2	$791.5	$668.1	$740.9	$389.9	$159.1	$351.1	$458.4	$968.6	$2,099.4
Net Acquisitions	$1,196.0	$147.7	$142.4	-$390.5	$148.4	-$116.8	-$167.6	-$217.0	-$411.2	-$33.1	$14.6	-$429.7	-$814.4
Total Expenditures	$1,750.9	$417.1	$760.6	$496.7	$1,001.7	$551.3	$573.2	$172.9	-$252.1	$320.1	$478.0	$546.0	$1,292.1
Expenditures as % of Total:													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	6.2%	0.0%	0.0%	0.0%	0.0%	0.7%	1.0%	1.3%	0.5%
Exploration & Development	31.7%	64.6%	81.3%	178.6%	79.0%	121.2%	129.2%	225.5%	-63.1%	109.7%	95.9%	177.4%	162.5%
Net Acquisitions	68.3%	35.4%	18.7%	-78.6%	14.8%	-21.2%	-29.2%	-125.5%	163.1%	-10.3%	3.1%	-78.7%	-63.0%
Cashflow (USD$million)	$1,209.8	$660.3	$698.0	$558.4	$644.3	$715.6	$760.1	$420.0	$667.9	$464.6	$581.6	$1,714.1	$2,894.1
Cashflow (USD$/boe)	$41.19	$23.60	$27.57	$24.41	$25.77	$26.91	$24.75	$13.26	$24.27	$18.68	$21.33	$21.52	$20.38
Recycle Ratio	1.3x	-1.4x	-0.2x	1.2x	0.8x	2.9x	2.2x	2.0x	-1.9x	1.9x	1.9x	3.8x	2.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$69.02	-$10.79	$61.23	$33.92	$26.46	$14.29	$12.97	$9.40	$4.11	$8.60	$10.62	$7.91	$9.49
Net Acquisition Costs	$26.41	$2,561.89	-$8.89	$181.21	-$104.02	-$10.00	$24.58	$13.52	$22.30	$4.27	-$14.86	$15.82	$16.28
All Sources (incl. revisions)	$32.84	-$16.75	-$128.39	$20.70	$32.50	$9.43	$11.40	$6.80	-$12.45	$9.60	$11.21	$5.67	$7.51
Exploration & Development (excl. revisions)	$52.34	$60.68	$39.45	$38.07	$33.01	$21.16	$20.36	$40.46	$16.00	$12.17	$14.78	$13.88	$18.11
Net Acquisition Costs	$26.41	$2,561.89	-$8.89	$181.21	-$104.02	-$10.00	$24.58	$13.52	$22.30	$4.27	-$14.86	$15.82	$16.28
All Sources (excl. revisions)	$31.33	$92.75	nm	$23.49	$41.01	$12.75	$19.39	-$26.98	$29.67	$15.04	$15.74	$12.65	$19.49

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Enerplus Corporation (ERF - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.57	11.13	12.14	13.35	13.86	14.00	13.27	11.25	9.75	9.56	10.24	10.26	11.62
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.11	2.78	3.03	4.18	3.14	4.03	3.10	2.57	2.37	2.30	2.15	2.42	2.87
F&D Costs (1-Year)	32.84	92.75	48.78	20.70	32.50	9.43	11.40	6.80	6.04	9.60	11.21	8.95	9.01
Return on Capital	18.68	44.95	22.38	10.49	15.37	4.79	5.46	3.07	3.01	5.47	6.17	4.84	4.59
Income Taxes	0.98	2.37	1.18	3.12	6.01	3.86	2.51	1.02	1.00	1.89	1.68	1.53	1.59
Breakeven Oil Price	**66.18**	**153.98**	**87.51**	**51.84**	**70.87**	**36.11**	**35.73**	**24.72**	**22.17**	**28.82**	**31.45**	**28.00**	**29.68**
Quality Differential	10.43	7.09	6.39	12.83	18.52	12.12	11.68	10.19	9.33	7.30	10.23	8.95	9.74
Required Brent Price	**76.61**	**161.07**	**93.90**	**64.67**	**89.39**	**48.23**	**47.41**	**34.91**	**31.50**	**36.12**	**41.68**	**36.95**	**39.43**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.72	17.12	19.48	22.53	23.97	23.95	22.74	18.98	15.62	14.46	15.28	16.46	19.13
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.86	4.28	4.86	7.05	5.42	6.89	5.31	4.33	3.80	3.48	3.20	3.89	4.73
F&D Costs (1-Year)	52.99	106.63	104.05	26.84	47.53	28.13	20.44	8.13	12.08	14.79	15.09	13.99	14.11
Return on Capital	30.51	56.30	53.17	15.52	25.71	14.55	10.33	4.00	6.16	8.46	8.08	7.49	7.34
Income Taxes	1.61	2.96	2.80	4.62	10.05	11.72	4.76	1.33	2.05	2.93	2.21	2.37	2.54
Breakeven Oil Price	**103.69**	**187.29**	**184.36**	**76.56**	**112.69**	**85.23**	**63.58**	**36.77**	**39.71**	**44.13**	**43.86**	**44.20**	**47.84**
Quality Differential	14.17	10.90	10.25	21.64	32.04	20.73	20.02	17.18	14.95	11.04	15.25	13.75	15.69
Required Brent Price	**117.86**	**198.20**	**194.61**	**98.20**	**144.73**	**105.97**	**83.61**	**53.96**	**54.66**	**55.17**	**59.11**	**57.94**	**63.53**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.72	17.12	19.48	22.53	23.97	23.95	22.74	18.98	15.62	14.46	15.28	16.46	19.13
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.86	4.28	4.86	7.05	5.42	6.89	5.31	4.33	3.80	3.48	3.20	3.89	4.73
F&D Costs (1-Year)	56.22	173.86	186.37	98.69	60.41	43.35	23.83	31.68	11.40	23.46	18.90	17.37	21.85
Return on Capital	32.67	92.10	95.28	57.35	32.71	22.54	12.03	15.45	5.82	13.39	10.12	9.38	11.43
Income Taxes	1.72	4.85	5.01	17.06	12.79	18.16	5.55	5.15	1.94	4.63	2.76	2.97	3.96
Breakeven Oil Price	**109.18**	**292.20**	**311.01**	**202.68**	**135.32**	**114.88**	**69.46**	**75.59**	**38.57**	**59.43**	**50.25**	**50.07**	**61.10**
Quality Differential	14.17	10.90	10.25	21.64	32.04	20.73	20.02	17.18	14.95	11.04	15.25	13.75	15.69
Required Brent Price	**123.36**	**303.11**	**321.26**	**224.32**	**167.35**	**135.62**	**89.48**	**92.78**	**53.52**	**70.47**	**65.50**	**63.81**	**76.79**

Source: BMO Capital Markets, Company Reports

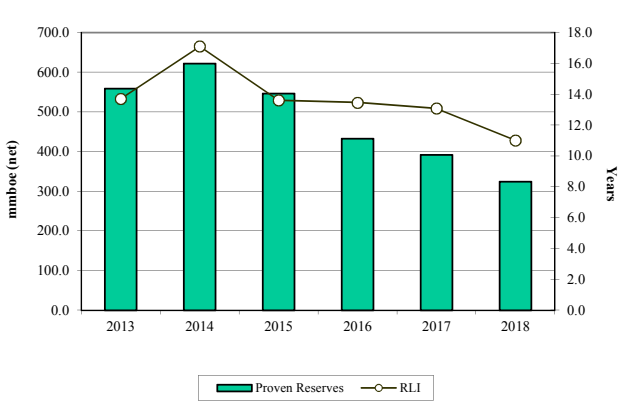
See pages F1 to F4 for analyst coverage.

EP Energy (EPE - NYSE)

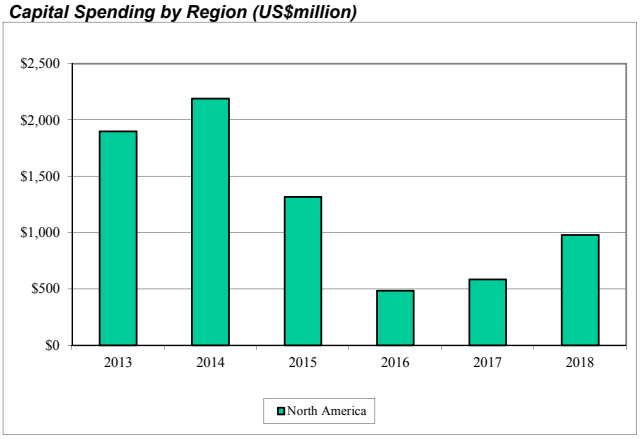
US$, net

- EPE reported results of operations of $8.46/boe in 2018 versus results of $3.90/boe in 2017.
- Excluding revisions, F&D costs came in at $38.57/boe in 2018. On a realized oil:gas price ratio basis, adjusted F&D costs were $46.22/boe, while the costs for PD reserves came in at $28.01/boe.
- EPE's 2018 operations suggest a required Brent breakeven oil price of $129.66/boe on total proved reserves, while its PD costs imply a breakeven of $92.60/boe.
- The company reported a loss on capital employed of 18.7% in 2018 versus a gain of 0.5% in 2017.

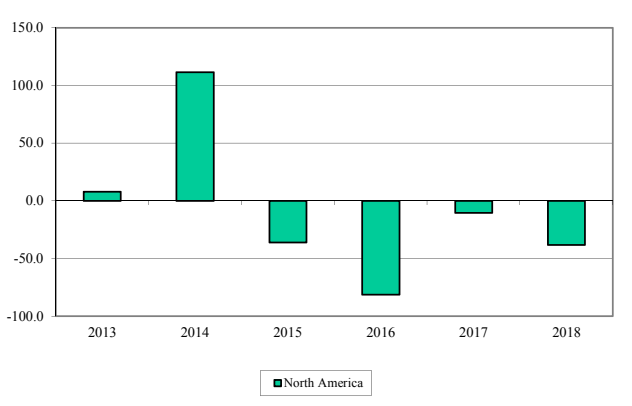
Proven Reserves vs RLI



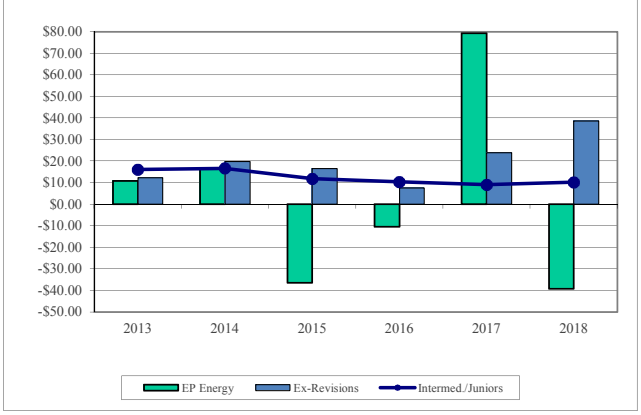
Capital Spending by Region (US$million)



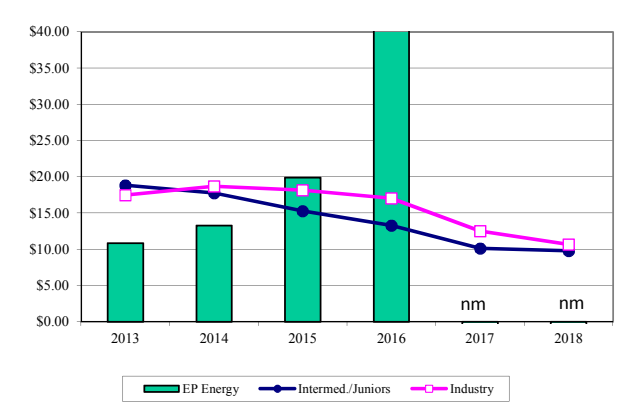
Proven Reserve Additions by Region (million boe)



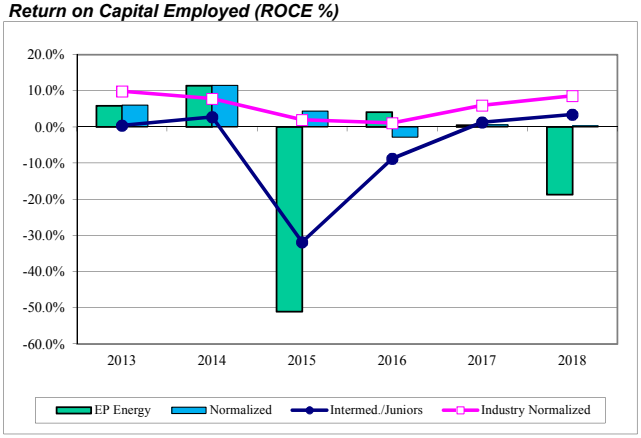
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



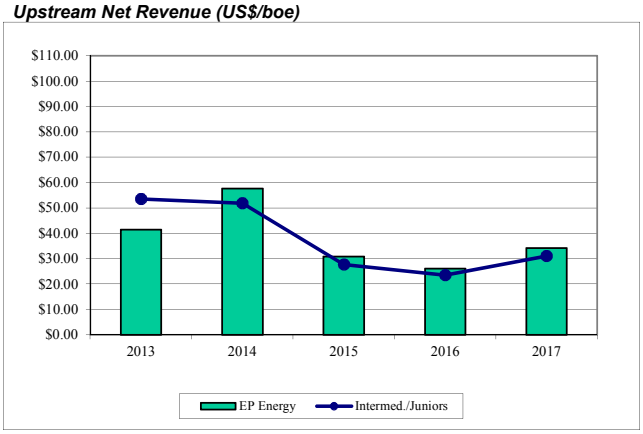
Source: BMO Capital Markets, Company Reports

EP Energy (EPE - NYSE)

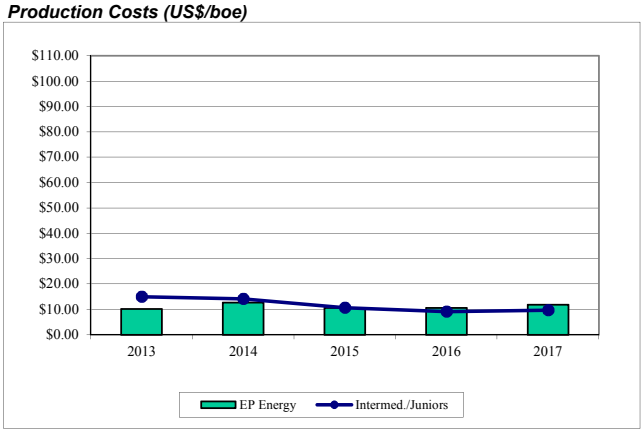
US$/boe, net

North America

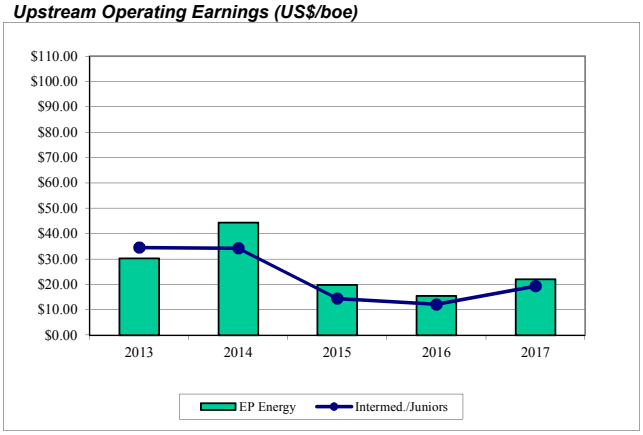
Upstream Net Revenue (US$/boe)



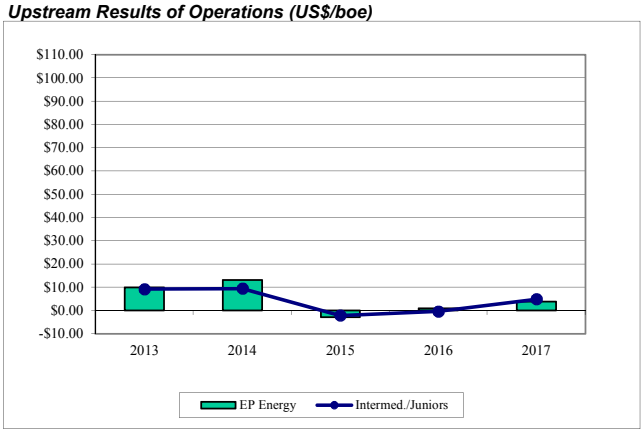
Production Costs (US$/boe)



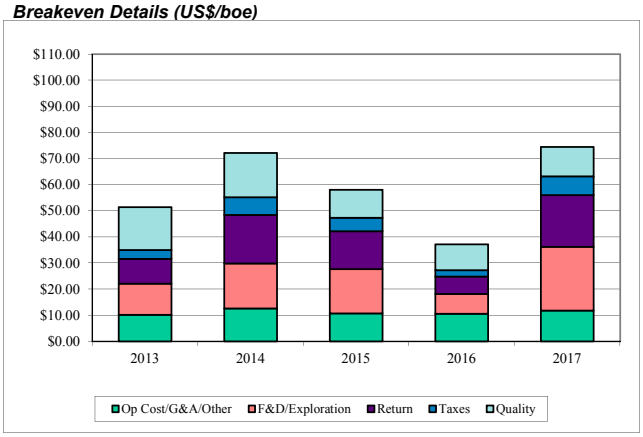
Upstream Operating Earnings (US$/boe)



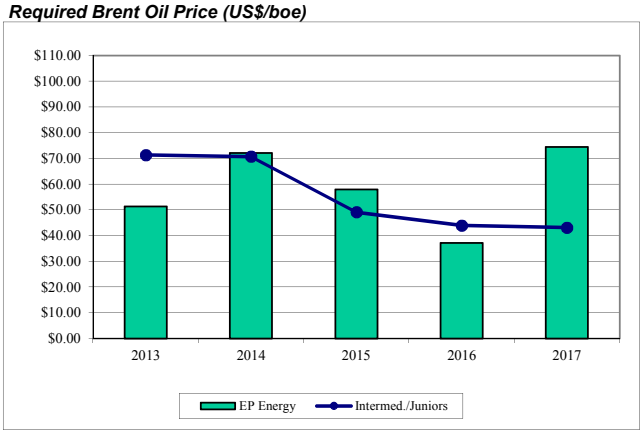
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EP Energy (EPE - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	1,692	2,099	1,241	840	1,025	1,240
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-		
Other	-	-	-	-	-	(52)	985	667	(73)	41	84
Total Revenue and Other Income	-	-	-	-	-	1,640	3,084	1,908	767	1,066	1,324
Crude Oil and Product Purchases	-	-	-	-	-	25	23	31	10	2	3
Production and Transportation Expenses	-	-	-	-	-	341	422	382	268	278	258
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	45	25	20	5	12	5
General and Administrative	-	-	-	-	-	229	244	148	146	81	89
Depreciation, Depletion and Amortization	-	-	-	-	-	618	875	983	462	487	507
Interest, net	-	-	-	-	-	-	318	330	312	326	365
Other	-	-	-	-	-	377	17	4,340	(410)	83	1,100
Earnings Before Income Tax	-	-	-	-	-	5	1,160	(4,326)	(26)	(203)	(1,003)
Current Income Taxes	-	-	-	-	-	(4)	181	-	1	(9)	-
Future Income Taxes	-	-	-	-	-	67	251	(578)	-	-	-
Total Income Taxes	-	-	-	-	-	63	432	(578)	1	(9)	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	(58)	728	(3,748)	(27)	(194)	(1,003)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	508	4	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	450	731	(3,748)	(27)	(194)	(1,003)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	450	731	(3,748)	(27)	(194)	(1,003)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	450	731	(3,748)	(27)	(194)	(1,003)
Charges and Credits Not Impacting Cash	-	-	-	-	-	779	1,338	4,704	464	489	1,610
Other	-	-	-	-	-	(338)	70	92	(426)	16	(46)
Cash Flow From Operations	-	-	-	-	-	891	2,139	1,048	11	311	561
Change in Working Capital / Other	-	-	-	-	-	69	(953)	279	773	64	(139)
Net Cash From Operating Activities	-	-	-	-	-	960	1,186	1,327	784	375	422
Total Capital Expenditures	-	-	-	-	-	(1,924)	(2,033)	(1,433)	(533)	(541)	(690)
Acquisitions, net	-	-	-	-	-	(2)	(165)	(111)	389	(36)	(100)
Other	-	-	-	-	-	1,451	154	1	-	-	-
Net Cash From Investing Activities	-	-	-	-	-	(475)	(2,044)	(1,543)	(144)	(577)	(790)
Net Change in Debt	-	-	-	-	-	(310)	162	241	(609)	230	352
Net Change in Common Stock	-	-	-	-	-	-	669	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	(188)	-	-	-	-	-
Other	-	-	-	-	-	(5)	(2)	(21)	(37)	(3)	(2)
Net Cash From Financing Activities	-	-	-	-	-	(503)	829	220	(646)	227	350
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	(18)	(29)	4	(6)	25	(18)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	69	51	22	26	20	45
Cash and Equivalents, End of Year	-	-	-	-	-	51	22	26	20	45	27

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EP Energy (EPE - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	529	1,102	969	248	466	385
Net Property, Plant and Equipment	-	-	-	-	-	7,616	8,728	4,755	4,498	4,422	3,774
Other Assets	-	-	-	-	-	221	389	109	15	12	22
Total Assets	-	-	-	-	-	8,366	10,219	5,833	4,761	4,900	4,181
Total Current Liabilities	-	-	-	-	-	780	899	348	321	448	440
Long-term Debt	-	-	-	-	-	4,421	4,598	4,812	3,789	4,022	4,285
Deferred Income Taxes	-	-	-	-	-	171	327	-		-	-
Other Liabilities and Deferred Credits	-	-	-	-	-	57	47	54	45	38	55
Total Liabilities	-	-	-	-	-	5,429	5,871	5,214	4,155	4,508	4,780
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	-	-	-	2	2	2	3	3
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	2,832	3,510	3,529	3,546	3,526	3,536
Preferred Stock	-	-	-	-	-	-	-			-	-
Retained Earnings	-	-	-	-	-	105	836	(2,912)	(2,939)	(3,134)	(4,137)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	(3)	(3)	(1)
Total Shareholders' Equity	-	-	-	-	-	2,937	4,348	619	606	392	(599)
Total Liabilities and Shareholders' Equity	-	-	-	-	-	8,366	10,219	5,833	4,761	4,900	4,181
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**5.9%**	**11.4%**	**-51.1%**	**4.1%**	**0.5%**	**-18.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	-	-	$41.51	$57.71	$30.94	$26.16	$34.21	$42.12	$33.93	$38.36
Production Costs	-	-	-	-	-	$10.13	$12.68	$10.67	$10.56	$11.81	$11.62	$11.31	$11.45
Exploration	-	-	-	-	-	$1.10	$0.69	$0.50	$0.16	$0.40	$0.17	$0.24	$0.40
DD&A	-	-	-	-	-	$14.84	$23.73	$24.21	$14.01	$15.88	$16.85	$15.54	$19.38
G&A/Other	-	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations	-	-	-	-	-	$15.43	$20.62	-$4.44	$1.43	$6.11	$13.49	$6.84	$7.13
Income Taxes	-	-	-	-	-	$5.54	$7.42	-$1.59	$0.52	$2.20	$5.03	$2.52	$2.60
Results of Operations	-	-	-	-	-	$9.89	$13.20	-$2.84	$0.92	$3.90	$8.46	$4.32	$4.53

Source: BMO Capital Markets, Company Reports

EP Energy (EPE - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	394.5	200.0	208.2	158.9	126.0	123.3	136.1	163.3
Liquids Production (b/d)	-	-	-	-	-	45,912	66,312	75,189	61,490	61,093	60,107	60,897	64,838
Total Production (boe/d)	-	-	-	-	-	111,666	99,646	109,892	87,974	82,098	80,655	83,576	92,053
% Gas Production	-	-	-	-	-	59%	33%	32%	30%	26%	25%	27%	30%
% Oil Production	-	-	-	-	-	41%	67%	68%	70%	74%	75%	73%	70%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	-	1,129.0	1,243.0	938.0	732.0	652.0	574.0	652.7	827.8
Closing Oil Reserves (mmbbls)	-	-	-	-	-	370.9	415.0	389.6	310.4	283.3	228.7	274.1	325.4
Closing Total Proven Reserves (mmboe)	-	-	-	-	-	559.1	622.2	545.9	432.4	392.0	324.4	382.9	463.4
% Gas Reserves	-	-	-	-	-	34%	33%	29%	28%	28%	29%	28%	30%
% Oil Reserves	-	-	-	-	-	66%	67%	71%	72%	72%	71%	72%	70%
Proven Reserve Life Index	-	-	-	-	-	13.7	17.1	13.6	13.5	13.1	11.0	12.5	13.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	-	-522.0	246.0	-229.0	-148.0	-34.0	-33.0	-215.0	-198.0
Oil Additions (mmbbls)	-	-	-	-	-	95.0	70.4	2.0	-56.8	-4.7	-32.7	-94.2	(21.8)
Total Additions (mmboe)	-	-	-	-	-	8.0	111.4	-36.1	-81.5	-10.4	-38.2	-130.1	-54.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	-	155.3	103.4	68.9	64.1	24.2	0.0	88.4	260.7
Acquisitions	-	-	-	-	-	0.0	7.1	10.6	0.0	0.1	25.4	25.5	43.2
Dispositions	-	-	-	-	-	(167.6)	(21.2)	-	(35.3)	(17.7)	(13.3)	(66.3)	(87.5)
Revisions of Estimates	-	-	-	-	-	20.3	22.1	-115.7	-110.3	-17.0	-50.3	(177.6)	(271.1)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	-	-	1949.2%	92.8%	-190.7%	-78.7%	-233.3%	0.0%	-67.9%	-476.0%
Net Acquisitions	-	-	-	-	-	0.0%	6.4%	-29.4%	0.0%	-1.1%	-66.4%	-19.6%	-78.9%
Revisions of Estimates	-	-	-	-	-	254.8%	19.9%	320.1%	135.4%	163.5%	131.6%	136.5%	495.1%
Additions as % of Production:													
Gas	-	-	-	-	-	-362.5%	337.0%	-301.3%	-255.2%	-73.9%	-73.3%	-144.3%	-66.4%
Oil	-	-	-	-	-	566.7%	291.0%	7.4%	-253.1%	-21.2%	-149.0%	-141.3%	-18.4%
Total	-	-	-	-	-	19.5%	306.4%	-90.1%	-253.7%	-34.7%	-129.7%	-142.1%	-32.6%
Additions as % of Reserves:													
Gas	-	-	-	-	-	-46.2%	19.8%	-24.4%	-20.2%	-5.2%	-5.7%	-32.9%	-23.9%
Oil	-	-	-	-	-	25.6%	17.0%	0.5%	-18.3%	-1.7%	-14.3%	-34.4%	-6.7%
Total	-	-	-	-	-	1.4%	17.9%	-6.6%	-18.8%	-2.6%	-11.8%	-34.0%	-11.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	-	-	-	$95.0	$57.0	$26.0	$4.0	$6.0	$7.0	$17.0	$100.0
Development	-	-	-	-	-	$1,783.0	$1,953.0	$1,168.0	$472.0	$544.0	$649.0	$1,665.0	$4,786.0
Acquisitions	-	-	-	-	-	$22.0	$179.0	$123.0	$8.0	$34.0	$322.0	$364.0	$666.0
Total Expenditures	-	-	-	-	-	$1,900.0	$2,189.0	$1,317.0	$484.0	$584.0	$978.0	$2,046.0	$5,552.0
Expenditures as % of Total:													
Exploration	-	-	-	-	-	5.0%	2.6%	2.0%	0.8%	1.0%	0.7%	0.8%	1.8%
Development	-	-	-	-	-	93.8%	89.2%	88.7%	97.5%	93.2%	66.4%	81.4%	86.2%
Net Acquisitions	-	-	-	-	-	1.2%	8.2%	9.3%	1.7%	5.8%	32.9%	17.8%	12.0%
Cashflow (US$million)	-	-	-	-	-	$891.0	$2,139.0	$1,048.0	$11.0	$311.0	$561.0	$883.0	$4,070.0
Cashflow (US$/boe)	-	-	-	-	-	$21.86	$58.81	$26.13	$0.34	$10.38	$19.06	$9.65	$24.23
Recycle Ratio	-	-	-	-	-	2.0x	3.6x	-0.7x	0.0x	0.1x	-0.5x	0.9x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	-	-	$10.70	$16.01	-$25.52	-$10.31	$75.90	-$13.05	-$18.86	-$467.56
Acquisition Costs	-	-	-	-	-	na	$25.18	$11.57	na	$288.14	$12.70	$14.29	$15.41
All Sources (incl. revisions)	-	-	-	-	-	$10.82	$16.51	-$36.44	-$10.49	$79.30	-$39.24	-$15.73	-$101.38
Exploration & Development (excl. revisions)	-	-	-	-	-	$12.10	$19.44	$17.32	$7.42	$22.70	na	$19.03	$18.74
Acquisition Costs	-	-	-	-	-	na	$25.18	$11.57	na	$288.14	$12.70	$14.29	$15.41
All Sources (excl. revisions)	-	-	-	-	-	$12.24	$19.81	$16.55	$7.55	$23.99	$38.57	$17.97	$18.27

Source: BMO Capital Markets, Company Reports

EP Energy (EPE - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	10.13	12.68	10.67	10.56	11.81	11.62	11.31	11.45
Exploration Expense	-	-	-	-	-	1.10	0.69	0.50	0.16	0.40	0.17	0.24	0.40
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	-	10.82	16.51	16.55	7.55	23.99	38.57	23.37	21.67
Return on Capital	-	-	-	-	-	9.53	18.59	14.35	14.16	20.03	26.74	20.31	18.77
Income Taxes	-	-	-	-	-	3.42	6.69	5.15	5.10	7.22	9.97	7.48	6.84
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**35.01**	**55.15**	**47.23**	**37.51**	**63.46**	**87.07**	**62.71**	**59.13**
Quality Differential	-	-	-	-	-	16.38	16.98	10.69	9.99	11.20	15.87	12.35	12.95
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**51.39**	**72.14**	**57.91**	**47.50**	**74.66**	**102.93**	**75.06**	**72.08**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	18.46	16.55	13.37	13.05	14.22	14.65	13.94	14.35
Exploration Expense	-	-	-	-	-	2.01	0.90	0.62	0.19	0.48	0.21	0.30	0.50
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	-	15.97	23.23	19.39	9.58	29.95	46.22	28.58	26.28
Return on Capital	-	-	-	-	-	19.72	26.28	17.36	21.12	24.52	30.46	25.37	23.95
Income Taxes	-	-	-	-	-	11.06	14.78	9.73	11.88	13.83	18.11	14.55	13.62
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**67.21**	**81.75**	**60.47**	**55.82**	**83.00**	**109.65**	**82.74**	**78.70**
Quality Differential	-	-	-	-	-	29.83	22.18	13.39	12.35	13.48	20.00	15.28	16.28
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**97.04**	**103.93**	**73.86**	**68.17**	**96.49**	**129.66**	**98.02**	**94.98**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	18.46	16.55	13.37	13.05	14.22	14.65	13.94	14.35
Exploration Expense	-	-	-	-	-	2.01	0.90	0.62	0.19	0.48	0.21	0.30	0.50
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	-	10.29	24.78	30.38	19.10	15.88	28.01	21.00	23.63
Return on Capital	-	-	-	-	-	12.68	27.81	27.12	22.53	12.99	18.63	15.58	15.79
Income Taxes	-	-	-	-	-	7.11	15.64	15.19	12.68	7.33	11.08	8.94	8.98
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**50.54**	**85.69**	**86.69**	**67.55**	**50.90**	**72.58**	**59.75**	**63.25**
Quality Differential	-	-	-	-	-	29.83	22.18	13.39	12.35	13.48	20.02	15.28	16.28
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**80.37**	**107.87**	**100.08**	**79.90**	**64.38**	**92.60**	**75.03**	**79.53**

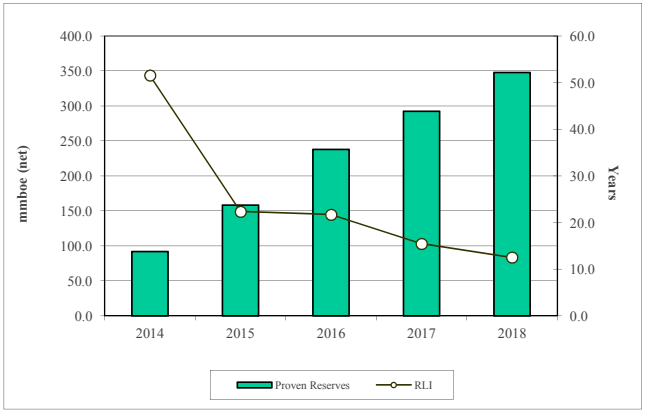
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

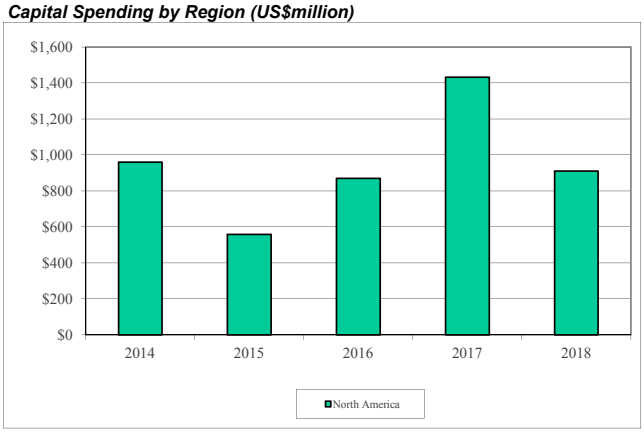
Extraction Oil & Gas (XOG - NASDAQ) US$, net

- Extraction yielded results of operations of $10.53/boe compared to $3.07/boe in 2017.
- One-year F&D costs came in lower at $9.79/boe compared to $19.48/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $11.94/boe from $23.98/boe, while costs for PD reserves improved to $16.10/boe from $24.28/boe.
- Extraction's 2018 operations suggest a required Brent breakeven oil price of $57.64/boe on total proved reserves, while its PD cost assessment suggests a breakeven oil price of $66.10/boe.
- The company reported a ROCE of 5.6% in 2018.

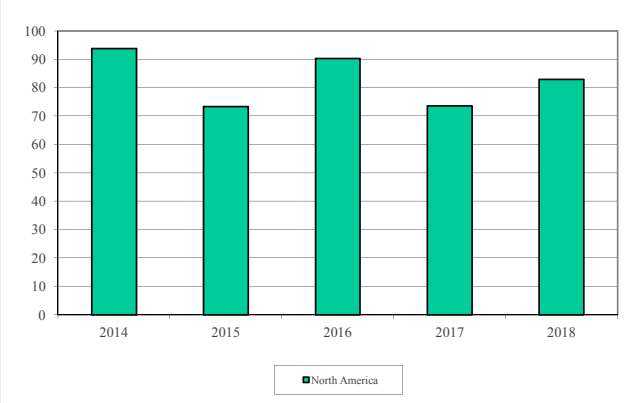
Proven Reserves vs RLI



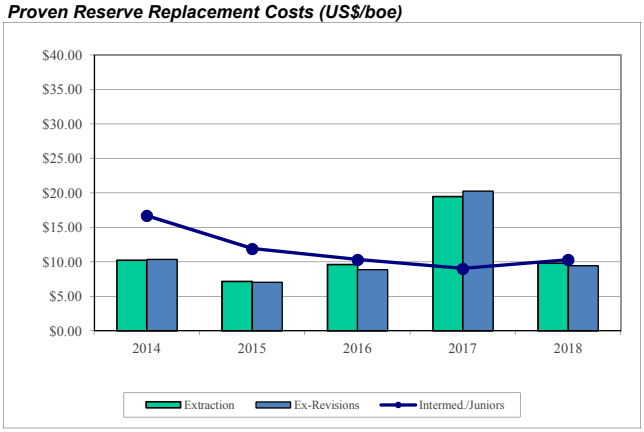
Capital Spending by Region (US$million)



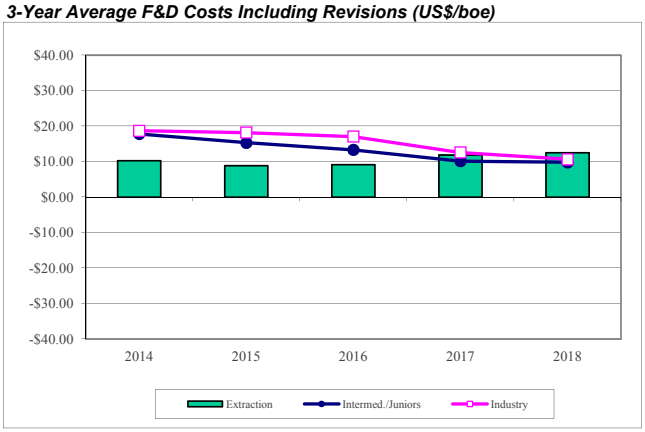
Proven Reserve Additions by Region (million boe)



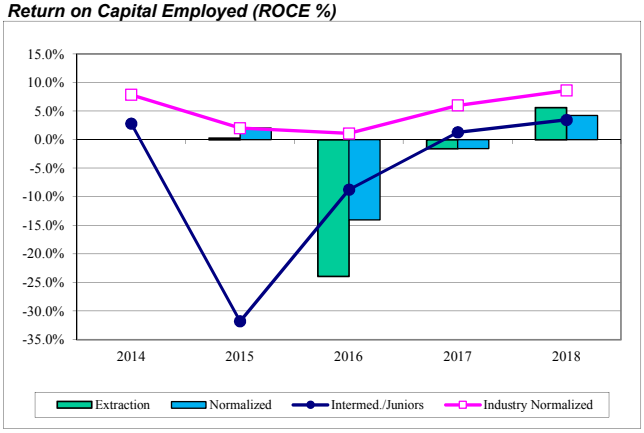
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



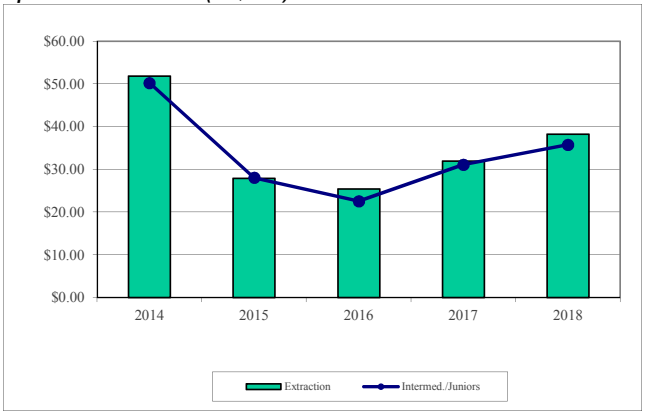
Source: BMO Capital Markets, Company Reports

Extraction Oil & Gas (XOG - NASDAQ)

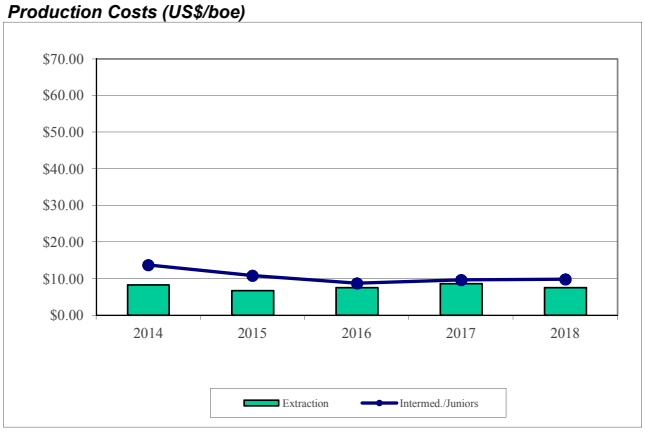
US$/boe, net

North America

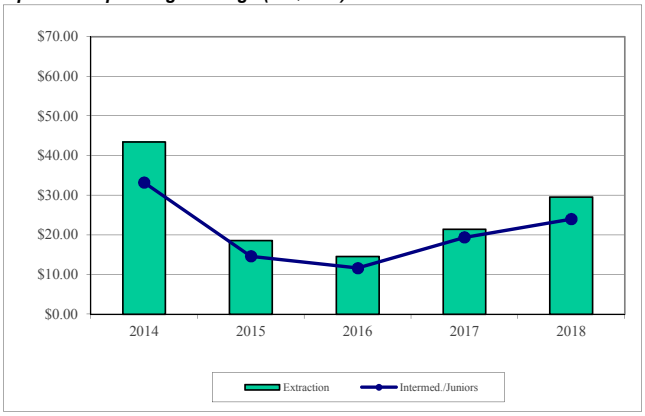
Upstream Net Revenue (US$/boe)



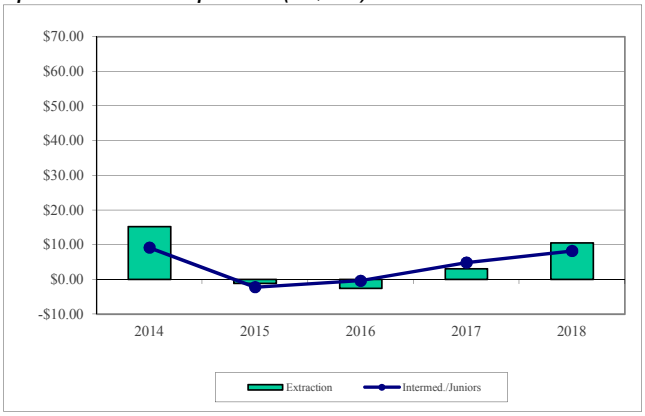
Production Costs (US$/boe)



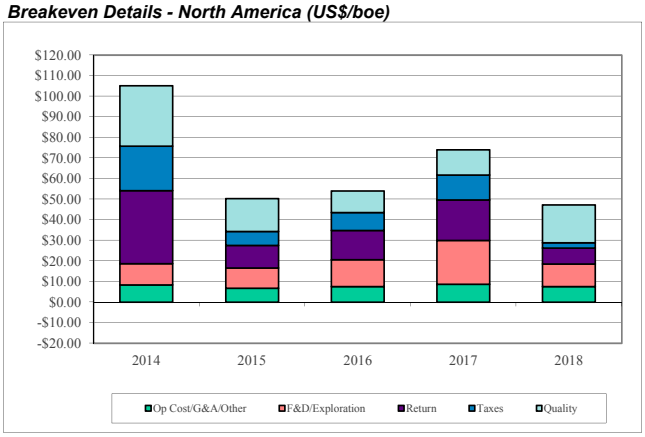
Upstream Operating Earnings (US$/boe)



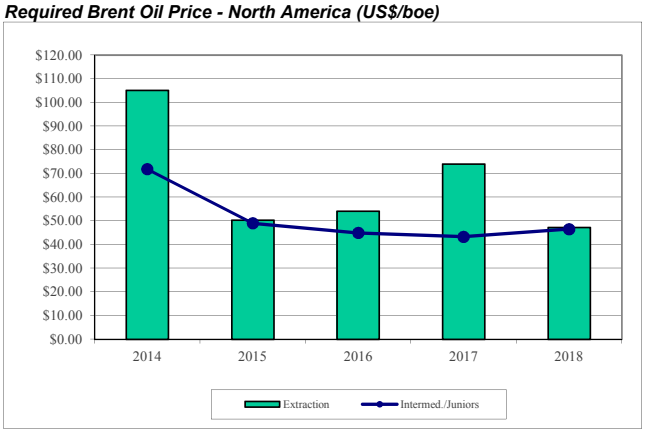
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Extraction Oil & Gas (XOG - NASDAQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	-	93	198	278	604	1,061
Midstream / Downstream Revenue							-	-	-		
Other							-	-			
Total Revenue and Other Income	-	-	-	-	-	-	93	198	278	604	1,061
Crude Oil and Product Purchases											
Production and Transportation Expenses							15	48	83	163	209
Marketing Expenses							-	-	-	-	-
Exploration / Dry Hole Costs							0	19	36	36	32
General and Administrative							20	37	232	110	135
Depreciation, Depletion and Amortization							34	147	205	315	436
Interest, net							22	51	69	52	123
Other							(48)	(56)	138	36	(62)
Earnings Before Income Tax	-	-	-	-	-	-	50	(47)	(485)	(108)	189
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes							-	-	(29)	(64)	67
Total Income Taxes							-	-	(29)	(64)	67
Minority Interest	-	-	-	-	-	-				-	(7)
Earnings From Continuing Operations	-	-	-	-	-	-	50	(47)	(456)	(44)	115
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	-	50	(47)	(456)	(44)	115
Preferred Stock Dividends	-	-	-	-	-	-			-	16	17
Net Earnings to Common Shareholders	-	-	-	-	-	-	50	(47)	(456)	(61)	98

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	-	50	(47)	(456)	(44)	115
Charges and Credits Not Impacting Cash	-	-	-	-	-	-	34	179	222	269	599
Other							(42)	(12)	363	94	(162)
Cash Flow From Operations	-	-	-	-	-	-	42	120	129	318	552
Change in Working Capital / Other	-	-	-	-	-	-	35	47	(13)	(1)	133
Net Cash From Operating Activities	-	-	-	-	-	-	77	167	116	317	685
Upstream Spending							(240)	(391)	(450)	(1,371)	(958)
Midstream / Downstream Spending							(13)	(23)	(8)	(22)	(97)
Acquisitions, net							(707)	(121)	(419)	(12)	164
Other							(10)	15	(40)	43	(6)
Net Cash From Investing Activities	-	-	-	-	-	-	(971)	(520)	(916)	(1,362)	(897)
Net Change in Debt							524	125	(105)	479	346
Net Change in Common Stock							-	-	1,185	(4)	111
Net Change in Preferred Stock							-	-	260		
Cash Dividends Paid							-	-	-	(10)	(11)
Other	-	-	-	-	-	-	449	246	(50)	(2)	(5)
Net Cash From Financing Activities	-	-	-	-	-	-	972	371	1,291	463	441
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	-	79	18	492	(582)	228
Cash and Equivalents, Beginning of Year	-	-	-	-	-	-	0	79	97	589	7
Cash and Equivalents, End of Year	-	-	-	-	-	-	79	97	589	7	235

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Extraction Oil & Gas (XOG - NASDAQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	-	-	218	654	163	465
Net Property, Plant and Equipment	-	-	-	-	-	-	-	1,411	2,032	3,154	3,672
Other Assets								6	99	68	29
Total Assets	-	-	-	-	-	-	-	1,634	2,785	3,385	4,166
Total Current Liabilities								170	275	400	402
Long-term Debt								638	538	1,023	1,418
Deferred Income Taxes								-	106	42	109
Other Liabilities and Deferred Credits	-	-	-	-	-	-	-	72	97	144	178
Total Liabilities	-	-	-	-	-	-	-	880	1,016	1,610	2,107
Minority Interests	-	-								-	148
Common Shares								-	2	2	2
Contributed Surplus (Paid-in Capital)								-	2,068	2,115	2,154
Preferred Stock								-	153	158	164
Retained Earnings								3	(453)	(498)	(376)
Other / Comprehensive Income (Loss)								751	-	(2)	(33)
Total Shareholders' Equity	-	-	-	-	-	-	-	754	1,769	1,775	1,911
Total Liabilities and Shareholders' Equity	-	-	-	-	-	-	-	1,634	2,785	3,385	4,166
Return on Capital Employed (ROCE)								**0.3%**	**-23.9%**	**-1.6%**	**5.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue							$51.82	$27.91	$25.42	$31.98	$38.23	$33.75	$33.61
Production Costs							$8.27	$6.73	$7.57	$8.61	$7.54	$7.90	$7.78
Exploration							$0.07	$2.63	$3.33	$1.92	$1.14	$1.81	$1.85
DD&A							$18.88	$20.36	$18.56	$16.51	$15.57	$16.45	$16.93
G&A/Other							$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations							$24.60	-$1.80	-$4.04	$4.95	$13.98	$7.59	$7.05
Income Taxes							$9.35	-$0.69	-$1.53	$1.88	$3.45	$1.99	$1.90
Results of Operations							$15.25	-$1.12	-$2.50	$3.07	$10.53	$5.60	$5.15

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue							$51.82	$27.91	$25.42	$31.98	$38.23	$33.75	$33.61
Production Costs							$8.27	$6.73	$7.57	$8.61	$7.54	$7.90	$7.78
Exploration							$0.07	$2.63	$3.33	$1.92	$1.14	$1.81	$1.85
DD&A							$18.88	$20.36	$18.56	$16.51	$15.57	$16.45	$16.93
G&A/Other							$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations							$24.60	-$1.80	-$4.04	$4.95	$13.98	$7.59	$7.05
Income Taxes							$9.35	-$0.69	-$1.53	$1.88	$3.45	$1.99	$1.90
Results of Operations							$15.25	-$1.12	-$2.50	$3.07	$10.53	$5.60	$5.15

Source: BMO Capital Markets, Company Reports

Extraction Oil & Gas (XOG - NASDAQ)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)							7.3	29.7	55.4	88.8	128.3	90.8	77.4
Liquids Production (b/d)							3,692	14,466	20,744	36,971	54,628	37,448	32,625
Total Production (boe/d)							4,908	19,408	29,973	51,764	76,020	52,585	45,518
% Gas Production							25%	25%	31%	29%	28%	29%	28%
% Oil Production							75%	75%	69%	71%	72%	71%	72%
Proven Reserves:													
Gas Reserves (bcf)							166.4	292.6	507.7	626.2	703.3	612.4	574.0
Oil Reserves (mmbbls)							64.6	109.9	153.4	188.4	230.7	190.8	186.8
Total Proven Reserves (mmboe)							92.4	158.6	238.1	292.7	347.9	292.9	282.4
% Gas Reserves							30%	31%	36%	36%	34%	35%	34%
% Oil Reserves							70%	69%	64%	64%	66%	65%	66%
Proven Reserve Life Index							51.6	22.4	21.8	15.5	12.5	16.6	30.9
Proven Reserve Additions:													
Gas Additions (bcf)							168.4	137.0	235.4	150.8	123.9	510.1	815.5
Oil Additions (mmbbls)							65.8	50.5	51.1	48.4	62.3	161.8	278.1
Total Additions (mmboe)							93.8	73.4	90.4	73.6	82.9	246.8	414.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions							51.9	49.1	56.7	56.5	82.7	195.9	296.9
Acquisitions							40.9	30.1	41.3	14.2	13.7	69.1	140.1
Dispositions							-	(4.6)	-	-	(10.2)	(10.2)	(14.8)
Revisions of Estimates							1.0	(1.2)	(7.6)	2.9	(3.3)	(8.1)	(8.2)
Components as % of Total Additions:													
Extensions, Discoveries and Additions							55.3%	66.9%	62.7%	76.8%	99.8%	79.4%	71.7%
Acquisitions							43.6%	41.0%	45.7%	19.3%	16.5%	28.0%	33.8%
Dispositions							0.0%	-6.3%	0.0%	0.0%	-12.3%	-4.1%	-3.6%
Revisions of Estimates							1.1%	-1.6%	-8.4%	3.9%	-4.0%	-3.3%	-2.0%
Additions as % of Production:													
Gas							6321.6%	1265.7%	1164.5%	465.6%	264.6%	512.9%	577.7%
Oil							4879.5%	957.3%	675.3%	358.9%	312.2%	394.6%	467.1%
Total							5236.9%	1035.8%	825.9%	389.4%	298.8%	428.7%	498.4%
Additions as % of Reserves:													
Gas							101.2%	46.8%	46.4%	24.1%	17.6%	83.3%	142.1%
Oil							101.8%	46.0%	33.3%	25.7%	27.0%	84.8%	148.9%
Total							101.6%	46.3%	38.0%	25.1%	23.8%	84.3%	146.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration							$0.0	$19.6	$13.6	$17.1	$8.8	$39.5	$59.1
Development							$253.3	$338.0	$317.2	$894.0	$776.5	$1,987.8	$2,579.0
Acquisitions							$707.3	$201.6	$540.0	$521.7	$125.8	$1,187.5	$2,096.4
Dispositions							na	na	na	na	na	na	na
Total Expenditures							$960.6	$559.2	$870.9	$1,432.8	$911.1	$3,214.8	$4,734.5
Expenditures as % of Total:													
Exploration							0.0%	3.5%	1.6%	1.2%	1.0%	1.2%	1.2%
Development							26.4%	60.4%	36.4%	62.4%	85.2%	61.8%	54.5%
Acquisitions							73.6%	36.1%	62.0%	36.4%	13.8%	36.9%	44.3%
Cashflow (US$million)							$42.2	$119.6	$128.9	$318.2	$551.8	$999.0	$1,160.8
Cashflow (US$/boe)							$23.54	$16.89	$11.78	$16.84	$19.89	$17.35	$13.97
Recycle Ratio							2.3x	2.4x	1.2x	0.9x	2.0x	1.4x	1.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)							$4.78	$7.46	$6.74	$15.34	$9.89	$10.79	$9.14
Acquisition Costs							$17.31	$6.70	$13.08	$36.77	$9.20	$17.17	$14.96
All Sources (incl. revisions)							$10.24	$7.17	$9.64	$19.48	$9.79	$12.51	$11.04
Exploration & Development (excl. revisions)							$4.88	$7.29	$5.83	$16.13	$9.49	$10.35	$8.89
Acquisition Costs							$17.31	$6.70	$13.08	$36.77	$9.20	$17.17	$14.96
All Sources (excl. revisions)							$10.35	$7.06	$8.89	$20.27	$9.45	$12.13	$10.83

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Extraction Oil & Gas (XOG - NASDAQ)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	8.27	6.73	7.57	8.61	7.54	7.90	7.78
Exploration Expense	-	-	-	-	-	-	0.07	2.63	3.33	1.92	1.14	1.81	1.85
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	-	-	10.24	7.17	9.64	19.48	9.79	12.51	11.04
Return on Capital	-	-	-	-	-	-	35.47	11.01	14.23	19.63	7.80	13.60	24.36
Income Taxes	-	-	-	-	-	-	21.74	6.75	8.72	12.03	2.56	6.87	19.28
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**75.79**	**34.29**	**43.48**	**61.66**	**28.82**	**42.68**	**64.31**
Quality Differential	-	-	-	-	-	-	29.27	16.02	10.53	12.33	18.34	13.73	21.62
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**105.06**	**50.31**	**54.01**	**73.99**	**47.16**	**56.42**	**85.93**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	9.82	7.83	9.06	10.21	9.45	9.63	9.44
Exploration Expense	-	-	-	-	-	-	0.08	3.06	3.99	2.28	1.43	2.21	2.25
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	-	-	12.66	8.68	12.56	23.98	11.94	15.65	13.69
Return on Capital	-	-	-	-	-	-	42.38	12.78	18.06	22.90	8.92	16.10	22.60
Income Taxes	-	-	-	-	-	-	25.97	7.83	11.07	14.04	2.92	8.13	17.88
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**90.92**	**40.18**	**54.75**	**73.40**	**34.65**	**51.72**	**65.85**
Quality Differential	-	-	-	-	-	-	34.78	18.64	12.61	14.62	22.99	16.74	25.91
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**125.70**	**58.82**	**67.36**	**88.02**	**57.64**	**68.47**	**91.77**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	9.82	7.83	9.06	10.21	9.45	9.63	9.44
Exploration Expense	-	-	-	-	-	-	0.08	3.06	3.99	2.28	1.43	2.21	2.25
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	-	-	-	-	54.70	30.30	38.57	24.28	16.10	23.27	40.99
Return on Capital	-	-	-	-	-	-	243.46	42.47	52.83	23.19	12.15	24.14	66.38
Income Taxes	-	-	-	-	-	-	149.21	26.03	32.38	14.21	3.99	12.20	52.53
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**457.28**	**109.69**	**136.82**	**74.17**	**43.11**	**71.45**	**171.57**
Quality Differential	-	-	-	-	-	-	34.78	18.64	12.61	14.62	22.99	16.74	25.91
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**492.06**	**128.33**	**149.43**	**88.79**	**66.10**	**88.19**	**197.49**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

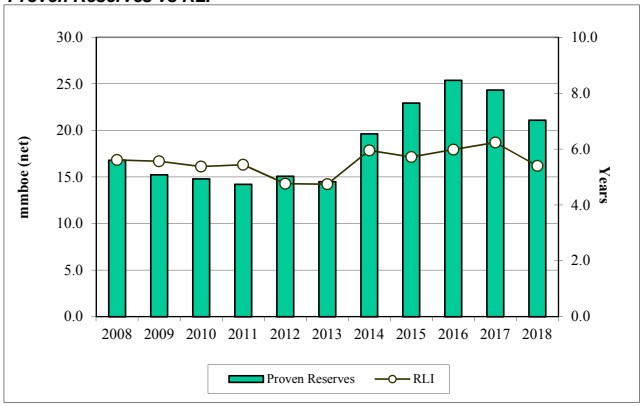
Freehold Royalties Ltd. (FRU - TSX)

US$, net

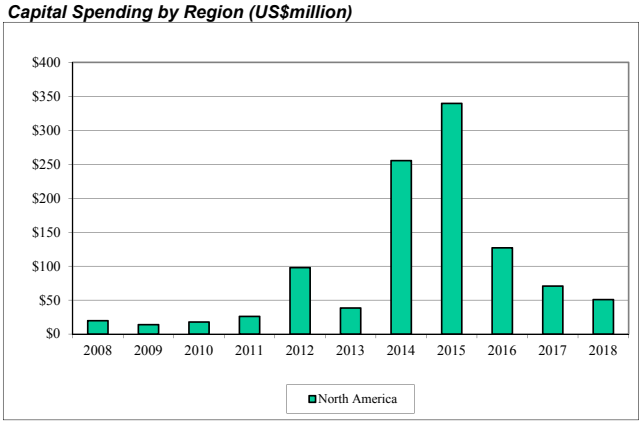
- Freehold reported results of operations of $3.67/boe in 2018 versus $2.90/boe in 2017.
- One-year F&D costs increased to $30.09/boe from $20.06/boe last year. On a realized oil:gas basis, F&D costs were $29.49/boe compared to $31.22/boe last year, while costs for PD reserves increased to $24.33/boe from $19.03/boe the previous year.
- Freehold's 2018 operations suggest a required Brent breakeven oil price of $79.45/boe on a realized ratio basis, while PD costs suggest a breakeven of $72.04/boe.
- The company reported a return on capital of 1.9% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

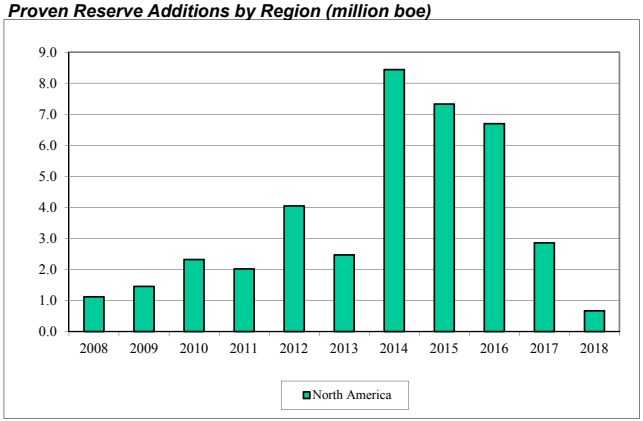
Proven Reserves vs RLI



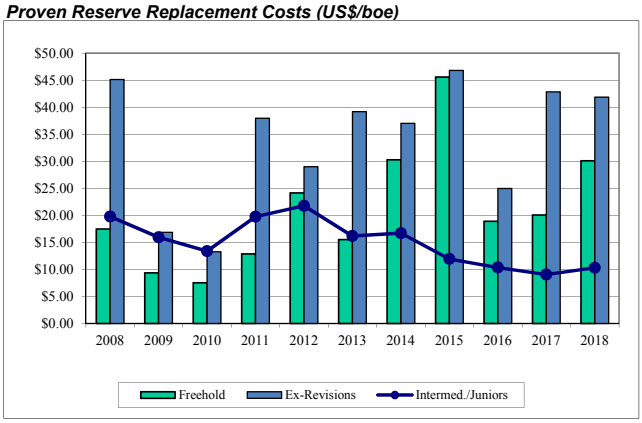
Capital Spending by Region (US$million)



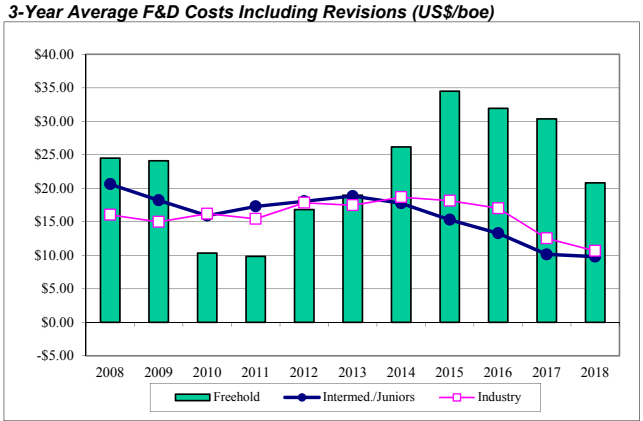
Proven Reserve Additions by Region (million boe)



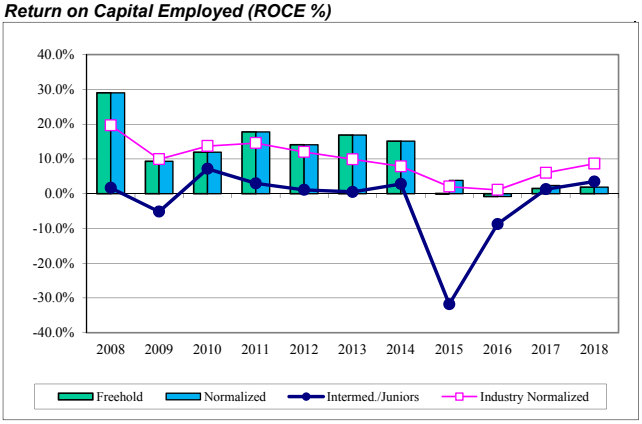
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



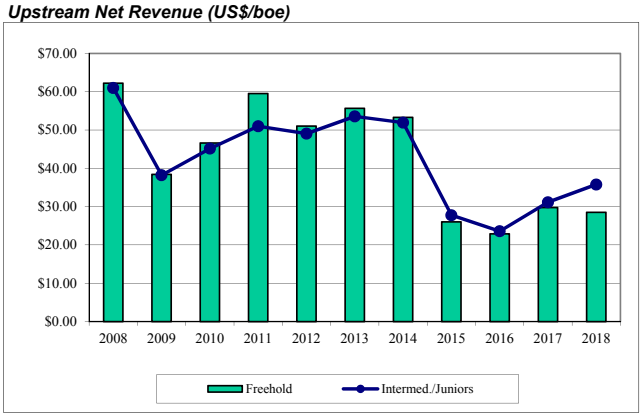
Source: BMO Capital Markets, Company Reports

Freehold Royalties Ltd. (FRU - TSX)

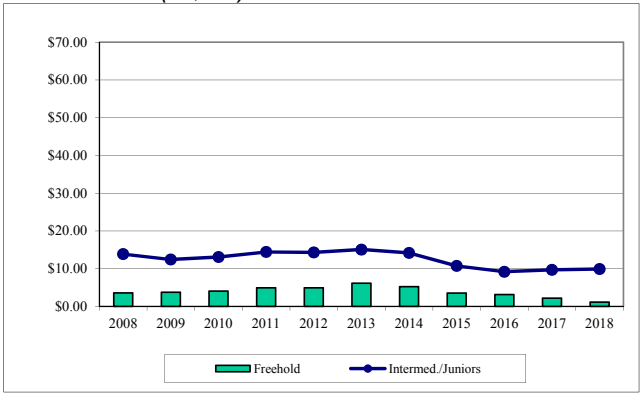
US$/boe, net

North America

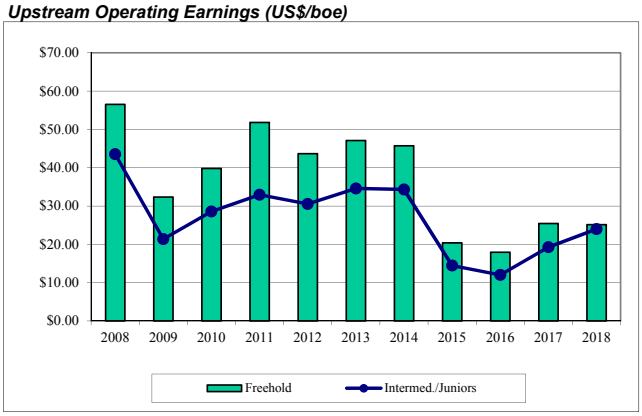
Upstream Net Revenue (US$/boe)



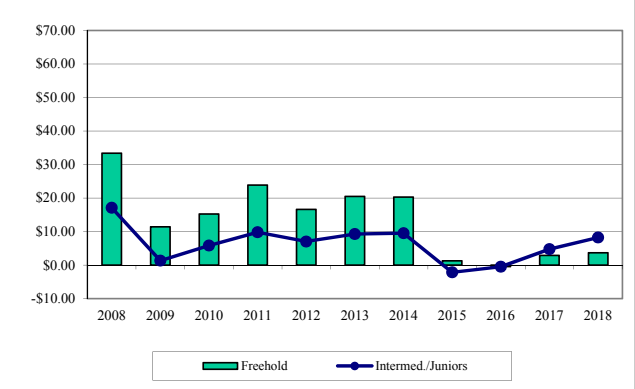
Production Costs (US$/boe)



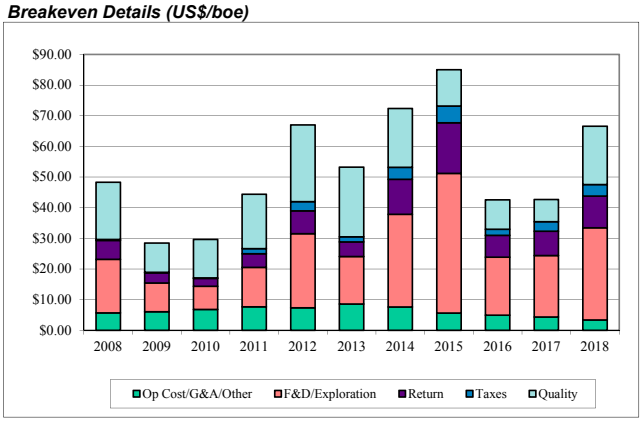
Upstream Operating Earnings (US$/boe)



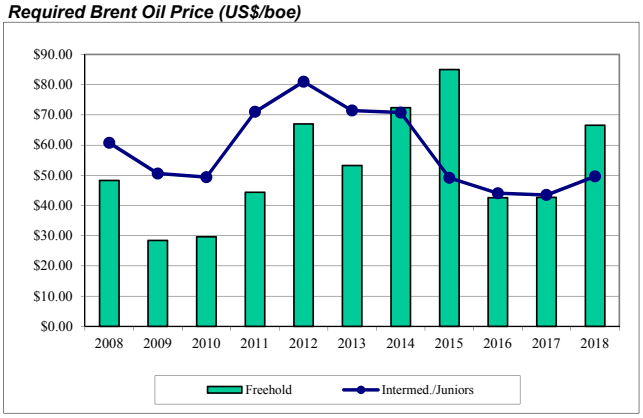
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Freehold Royalties Ltd. (FRU - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	186	103	130	156	162	170	176	104	97	116	112
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	2	(2)	-	-	-	-	-	-	-	-
Total Revenue and Other Income	186	105	128	156	162	170	176	104	97	116	112
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	11	10	11	13	16	19	17	14	13	8	5
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	6	6	8	7	8	7	8	8	8	8	9
Depreciation, Depletion and Amortization	64	56	65	50	65	60	61	75	79	83	79
Interest, net	7	4	3	3	2	2	4	4	3	2	3
Other	2	5	7	6	6	6	5	14	4	0	2
Earnings Before Income Tax	96	23	33	77	65	76	81	(12)	(11)	13	15
Current Income Taxes	0	0	0	0	28	23	20	(4)	-	-	-
Future Income Taxes (Recovery)	(8)	(5)	(2)	21	(9)	(3)	1	(5)	(2)	4	4
Total Income Taxes	(8)	(4)	(2)	21	19	19	21	(9)	(2)	4	4
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	104	28	35	56	46	56	60	(3)	(8)	9	11
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	104	28	35	56	46	56	60	(3)	(8)	9	11
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	104	28	35	56	46	56	60	(3)	(8)	9	11

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	104	28	35	56	46	56	60	(3)	(8)	9	11
Charges and Credits Not Impacting Cash	56	51	63	71	55	56	61	70	76	95	83
Other	2	5	5	3	2	4	4	15	3	(9)	0
Cash Flow From Operations	162	84	104	130	104	116	125	81	71	95	94
Change in Working Capital / Other	8	1	4	(10)	34	(25)	(4)	5	(1)	(3)	9
Net Cash From Operating Activities	169	84	107	120	138	91	122	87	70	92	103
Total Capital Expenditures	(12)	(14)	(18)	(26)	(37)	(28)	(31)	(17)	(4)	(4)	(3)
Acquisitions, net	(7)	(8)	(37)	(13)	(61)	(10)	(226)	(321)	(123)	(67)	(48)
Other	1	2	(2)	4	3	(0)	4	(4)	(2)	25	6
Net Cash From Investing Activities	(19)	(20)	(57)	(35)	(94)	(39)	(252)	(343)	(129)	(45)	(45)
Net Change in Debt	(36)	(84)	19	(17)	(30)	30	82	10	(51)	5	-
Net Issuance of Trust Units	-	97	-	-	68	-	128	306	152	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Distributions Paid	(115)	(78)	(70)	(68)	(81)	(82)	(78)	(60)	(43)	(52)	(57)
Other	-	-	-	-	-	-	-	-	-	-	-
Net Cash From Financing Activities	(150)	(64)	(51)	(85)	(44)	(52)	131	256	58	(47)	(57)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	0	(0)	(0)	(0)	(0)	0	1	(0)	0	(0)	1
Cash and Equivalents, Beginning of Year	0	0	0	0	0	0	0	1	1	1	0
Cash and Equivalents, End of Year	1	0	0	0	0	0	1	1	1	0	1

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Freehold Royalties Ltd. (FRU - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	22	22	22	28	23	25	27	17	19	31	11
Net Property, Plant and Equipment	402	343	368	395	425	391	564	702	722	690	662
Other Assets	2	4	5	5	-	-	1	17	20	17	13
Total Assets	427	369	396	428	449	416	592	736	761	737	686
Total Current Liabilities	41	24	29	28	47	21	24	13	11	14	10
Long-term Debt	132	40	63	49	18	48	126	119	63	69	69
Deferred Income Taxes	40	32	33	60	49	44	41	-	-	-	-
Other Liabilities and Deferred Credits	6	10	12	16	18	17	20	22	19	12	8
Total Liabilities	219	105	137	152	133	130	210	154	93	96	88
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Unitholders' Capital	535	603	257	321	423	442	575	823	955	977	980
Contributed Surplus (Paid-in Capital)	1	1	1	1	2	2	2	3	2	2	2
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	(328)	(341)	-	(46)	(109)	(159)	(196)	(244)	(288)	(338)	(384)
Accumulated Cash Distributions / Other	-	-	-	-	-	-	-	-	-	-	-
Total Unitholders' Equity	208	263	258	276	316	286	381	582	668	641	598
Total Liabilities and Unitholders' Equity	427	369	396	428	449	416	592	736	761	737	686
Return on Capital Employed (ROCE)	**29.0%**	**9.3%**	**11.9%**	**17.8%**	**14.1%**	**16.9%**	**15.1%**	**0.0%**	**-0.8%**	**1.5%**	**1.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$62.22	$38.41	$46.63	$59.50	$51.04	$55.66	$53.32	$26.02	$22.89	$29.77	$28.53	$26.95	$31.24
Production Costs	$3.56	$3.75	$4.08	$4.95	$4.92	$6.15	$5.21	$3.55	$3.14	$2.17	$1.16	$2.18	$2.98
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$21.41	$20.29	$23.77	$19.07	$20.39	$19.48	$18.44	$18.67	$18.54	$21.38	$20.14	$19.98	$19.44
G&A / Other	$2.14	$2.33	$2.75	$2.72	$2.45	$2.43	$2.38	$2.08	$1.81	$2.18	$2.22	$2.06	$2.12
Pre-tax Results of Operations	$35.12	$12.04	$16.03	$32.77	$23.28	$27.60	$27.28	$1.72	-$0.59	$4.04	$5.01	$2.73	$6.70
Income Taxes	$1.76	$0.60	$0.80	$8.88	$6.67	$7.09	$6.98	$0.43	-$0.13	$1.14	$1.34	$0.70	$1.71
Results of Operations	$33.36	$11.44	$15.23	$23.89	$16.61	$20.51	$20.30	$1.29	-$0.46	$2.90	$3.67	$2.03	$4.99

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Freehold Royalties Ltd. (FRU - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	19.0	17.6	17.8	16.7	19.6	17.7	19.8	27.4	29.5	31.1	29.0	29.9	27.4
Liquids Production (b/d)	5,027	4,570	4,584	4,378	5,419	5,433	5,745	6,425	6,710	5,515	5,882	6,036	6,055
Total Production (boe/d)	8,202	7,499	7,544	7,160	8,684	8,376	9,037	10,999	11,632	10,694	10,713	11,013	10,615
% Gas Production	39%	39%	39%	39%	38%	35%	36%	42%	42%	48%	45%	45%	43%
% Oil Production	61%	61%	61%	61%	62%	65%	64%	58%	58%	52%	55%	55%	57%
Proven Reserves:													
Closing Gas Reserves (bcf)	37.9	35.6	35.5	32.6	38.7	35.3	60.4	58.3	74.6	72.6	60.7	69.3	65.3
Closing Oil Reserves (mmbbls)	10.5	9.3	8.9	8.8	8.6	8.6	9.6	13.2	12.9	12.2	11.0	12.1	11.8
Closing Total Proven Reserves (mmboe)	16.8	15.2	14.8	14.2	15.1	14.5	19.6	22.9	25.4	24.3	21.1	23.6	22.7
% Gas Reserves	38%	39%	40%	38%	43%	41%	51%	42%	49%	50%	48%	49%	48%
% Oil Reserves	62%	61%	60%	62%	57%	59%	49%	58%	51%	50%	52%	51%	52%
Proven Reserve Life Index	5.6	5.6	5.4	5.5	4.8	4.8	6.0	5.7	6.0	6.3	5.4	5.9	5.9
Proven Reserve Additions:													
Gas Additions (bcf)	2.9	3.7	6.4	3.2	13.3	3.0	32.3	8.0	27.1	9.3	-1.3	35.1	75.4
Oil Additions (mmbbls)	0.6	0.8	1.2	1.5	1.8	2.0	3.0	6.0	2.2	1.3	0.9	4.4	13.4
Total Additions (mmboe)	1.1	1.5	2.3	2.0	4.0	2.5	8.4	7.3	6.7	2.9	0.7	10.2	26.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.3	0.6	0.5	0.6	1.1	0.8	1.0	0.8	0.4	0.7	0.3	1.4	3.2
Net Acquisitions	0.1	0.2	0.8	0.1	2.3	0.1	5.9	6.3	4.7	0.3	-0.2	4.9	17.1
Revisions of Estimates	0.7	0.6	1.0	1.3	0.7	1.5	1.5	0.2	1.6	1.9	0.5	4.0	5.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	30.6%	41.1%	20.1%	28.8%	26.5%	33.8%	11.8%	11.2%	5.6%	23.3%	51.4%	13.6%	12.3%
Net Acquisitions	8.1%	14.5%	36.6%	5.1%	56.9%	5.8%	70.0%	86.1%	69.9%	11.2%	-22.5%	47.5%	65.7%
Revisions of Estimates	61.3%	44.4%	43.3%	66.2%	16.7%	60.4%	18.2%	2.7%	24.4%	65.5%	71.2%	39.0%	22.0%
Additions as % of Production:													
Gas	42.2%	58.0%	99.1%	51.8%	186.4%	46.6%	448.5%	79.4%	251.5%	81.9%	-12.0%	107.4%	151.0%
Oil	34.3%	50.2%	74.6%	93.5%	92.2%	99.1%	145.4%	256.0%	88.9%	65.1%	40.9%	66.1%	121.4%
Total	37.3%	53.2%	84.2%	77.3%	127.6%	80.7%	255.8%	182.5%	157.7%	73.2%	17.1%	84.8%	134.1%
Additions as % of Reserves:													
Gas	7.7%	10.5%	18.1%	9.7%	34.4%	8.5%	53.6%	13.6%	36.3%	12.8%	-2.1%	50.7%	115.4%
Oil	6.0%	9.0%	14.0%	17.0%	21.1%	22.8%	31.9%	45.4%	16.8%	10.7%	8.0%	36.2%	113.8%
Total	6.7%	9.6%	15.7%	14.2%	26.8%	17.0%	43.0%	32.0%	26.4%	11.7%	3.2%	43.3%	114.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Exploration & Development	$12.3	$13.6	$17.5	$25.9	$36.8	$28.4	$30.5	$17.5	$3.9	$3.8	$3.1	$10.8	$58.8
Net Acquisitions	$7.3	$0.0	$0.0	$0.0	$60.9	$9.8	$224.9	$322.1	$122.8	$66.9	$47.7	$237.4	$784.4
Total Expenditures	$19.5	$13.6	$17.5	$25.9	$97.7	$38.2	$255.4	$339.6	$126.8	$70.6	$50.7	$248.1	$843.1
Expenditures as % of Total:													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	62.8%	100.0%	100.0%	100.0%	37.7%	74.4%	12.0%	5.1%	3.1%	5.3%	6.1%	4.3%	7.0%
Net Acquisitions	37.2%	0.0%	0.0%	0.0%	62.3%	25.6%	88.0%	94.9%	96.9%	94.7%	93.9%	95.7%	93.0%
Cashflow (C$million)	$161.6	$83.8	$103.9	$129.7	$103.9	$116.0	$125.4	$81.3	$71.2	$95.5	$93.6	$260.2	$466.9
Cashflow (C$/boe)	$53.96	$30.60	$37.72	$49.64	$32.80	$37.94	$38.01	$20.25	$16.76	$24.45	$23.94	$21.58	$24.10
Recycle Ratio	3.1x	3.3x	5.0x	3.9x	1.4x	2.4x	1.3x	0.4x	0.9x	1.2x	0.8x	0.9x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$11.92	$10.95	$11.93	$13.53	$21.08	$12.23	$12.05	$17.13	$1.96	$1.48	$3.77	$2.01	$6.59
Net Acquisition Costs	$80.63	$0.00	$0.00	$0.00	$26.48	$68.94	$38.09	$50.08	$26.15	$67.99	$54.84	$48.91	$45.96
All Sources (incl. revisions)	$17.45	$9.37	$7.53	$12.85	$24.15	$15.50	$30.27	$45.57	$18.89	$20.06	$30.09	$24.28	$32.44
Exploration & Development (excl. revisions)	$35.78	$22.78	$37.65	$44.65	$34.36	$34.12	$30.62	$21.26	$10.43	$5.64	$9.00	$7.78	$18.34
Net Acquisition Costs	$80.63	$0.00	$0.00	$0.00	$26.48	$68.94	$38.09	$50.08	$26.15	$67.99	$54.84	$48.91	$45.96
All Sources (excl. revisions)	$45.11	$16.85	$13.25	$37.96	$28.98	$39.19	$37.01	$46.82	$24.98	$42.83	$41.88	$39.77	$41.60

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Freehold Royalties Ltd. (FRU - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	3.56	3.75	4.08	4.95	4.92	6.15	5.21	3.55	3.14	2.17	1.16	2.18	2.98
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.14	2.33	2.75	2.72	2.45	2.43	2.38	2.08	1.81	2.18	2.22	2.06	2.12
F&D Costs (1-Year)	17.45	9.37	7.53	12.85	24.15	15.50	30.27	45.57	18.89	20.06	30.09	20.82	32.44
Return on Capital	6.17	3.32	2.60	4.48	7.46	4.76	11.41	16.50	7.14	7.91	10.31	7.75	12.06
Income Taxes	0.32	0.17	0.14	1.67	3.00	1.65	3.92	5.50	1.98	3.12	3.78	2.67	4.12
Breakeven Oil Price	**29.65**	**18.94**	**17.10**	**26.66**	**41.97**	**30.48**	**53.19**	**73.20**	**32.97**	**35.43**	**47.55**	**35.48**	**53.73**
Quality Differential	18.67	9.52	12.53	17.73	25.05	22.74	19.18	11.83	9.62	7.26	19.04	11.97	13.39
Required Brent Price	**48.32**	**28.46**	**29.63**	**44.38**	**67.02**	**53.22**	**72.38**	**85.03**	**42.59**	**42.69**	**66.60**	**47.45**	**67.11**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	4.22	4.92	5.52	7.02	7.21	8.56	7.01	5.01	4.60	3.50	1.90	3.42	4.44
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.54	3.05	3.73	3.86	3.58	3.38	3.20	2.93	2.66	3.51	3.64	3.23	3.16
F&D Costs (1-Year)	21.22	12.64	10.86	16.02	45.00	18.52	54.97	52.39	38.32	31.22	29.49	34.03	45.77
Return on Capital	7.59	4.47	3.67	5.54	13.06	5.34	17.81	18.68	13.51	12.07	9.67	12.15	16.03
Income Taxes	0.40	0.24	0.19	2.06	5.25	1.85	6.12	6.23	3.75	4.75	3.54	4.18	5.48
Breakeven Oil Price	**35.98**	**25.31**	**23.97**	**34.51**	**74.10**	**37.65**	**89.12**	**85.23**	**62.83**	**55.05**	**48.24**	**57.00**	**74.89**
Quality Differential	22.16	12.48	16.96	25.16	36.69	31.66	25.79	16.66	14.10	11.70	31.21	19.00	19.89
Required Brent Price	**58.14**	**37.80**	**40.94**	**59.68**	**110.78**	**69.31**	**114.92**	**101.89**	**76.92**	**66.75**	**79.45**	**76.01**	**94.78**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	4.22	4.92	5.52	7.02	7.21	8.56	7.01	5.01	4.60	3.50	1.90	3.42	4.44
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.54	3.05	3.73	3.86	3.58	3.38	3.20	2.93	2.66	3.51	3.64	3.23	3.16
F&D Costs (1-Year)	19.07	13.65	10.82	15.27	49.05	18.13	84.90	71.38	50.84	19.03	24.33	29.93	50.10
Return on Capital	6.82	4.84	3.67	5.32	14.20	5.26	27.66	25.68	17.93	7.35	8.02	10.69	17.50
Income Taxes	0.36	0.25	0.19	1.98	5.71	1.82	9.51	8.56	4.97	2.90	2.94	3.68	5.98
Breakeven Oil Price	**33.01**	**26.72**	**23.93**	**33.46**	**79.75**	**37.15**	**132.27**	**113.55**	**80.99**	**36.29**	**40.83**	**50.94**	**81.17**
Quality Differential	22.16	12.48	16.96	25.16	36.69	31.66	25.79	16.66	14.10	11.70	31.21	19.00	19.89
Required Brent Price	**55.17**	**39.20**	**40.89**	**58.62**	**116.43**	**68.80**	**158.07**	**130.21**	**95.09**	**47.99**	**72.04**	**69.94**	**101.07**

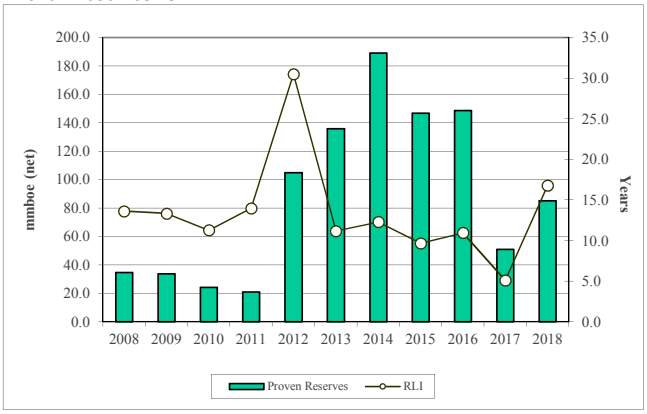
Source: BMO Capital Markets, Company Reports

Halcon Resources (HK - NYSE)

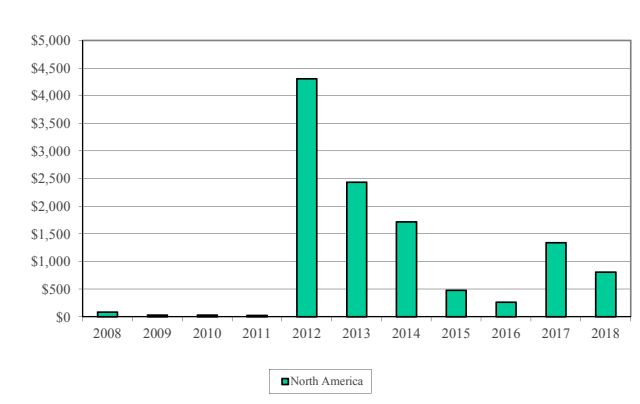
US$, net

- Halcon yielded results of operations of $5.53/boe in 2018 compared to $3.00/boe in 2017.
- One-year F&D costs came in at $20.65/boe, up from $18.41/boe last year. On a realized oil:gas price ratio basis, F&D costs increased to $26.47/boe from $20.53/boe, while the costs for PD reserves retracted to $11.64/boe from $36.03/boe the previous year.
- Halcon's 2018 results imply a required Brent breakeven oil price of $111.34/boe on total proved reserves (realized ratio basis), while its PD costs suggest a breakeven oil price of $74.87/boe.
- The company reported ROCE of 4.0% in 2018 compared to a normalized 2017 ROCE of 10.1%.

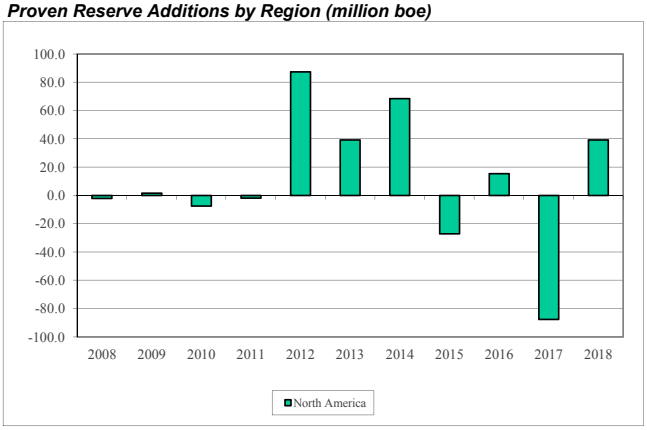
Proven Reserves vs RLI



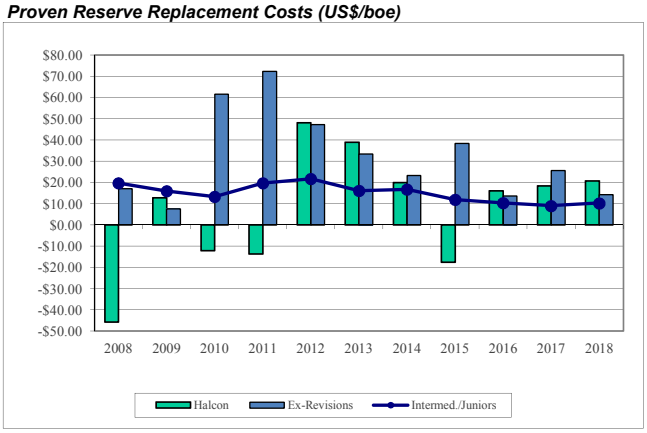
Capital Spending by Region (US$million)



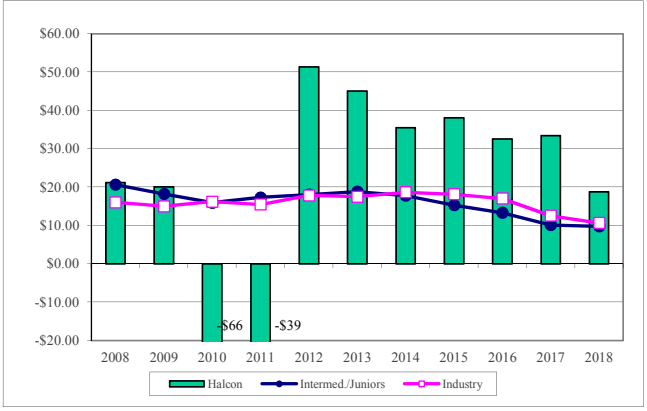
Proven Reserve Additions by Region (million boe)



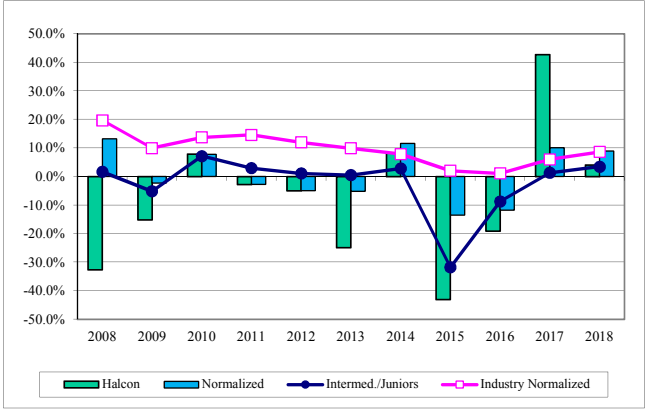
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

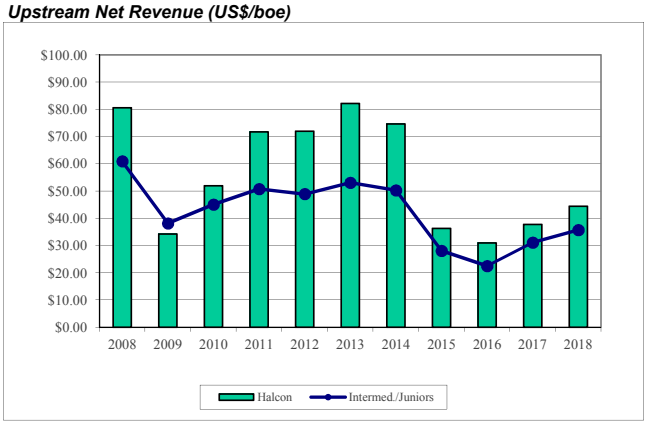
See pages F1 to F4 for analyst coverage.

Halcon Resources (HK - NYSE)

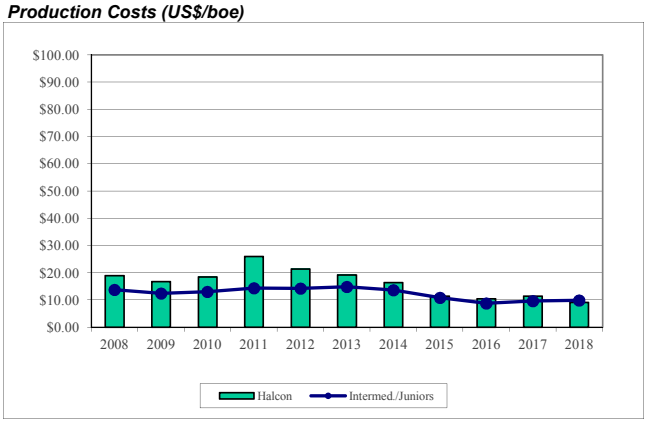
US$/boe, net

North America

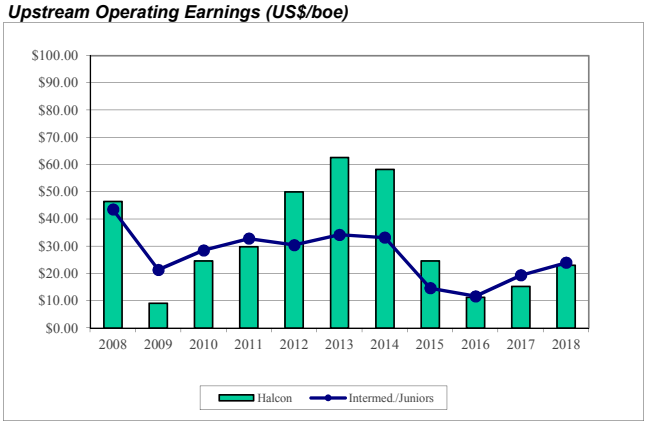
Upstream Net Revenue (US$/boe)



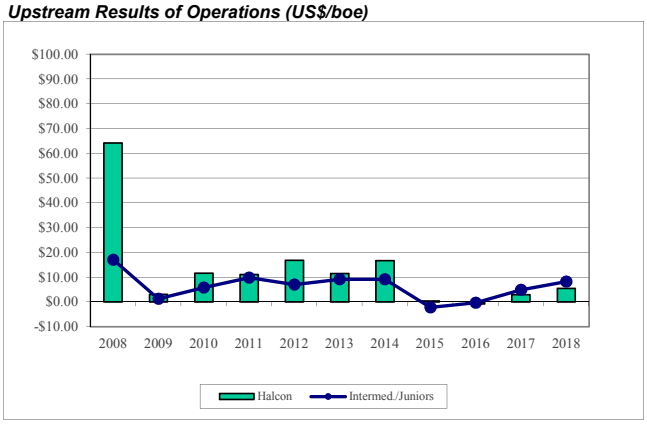
Production Costs (US$/boe)



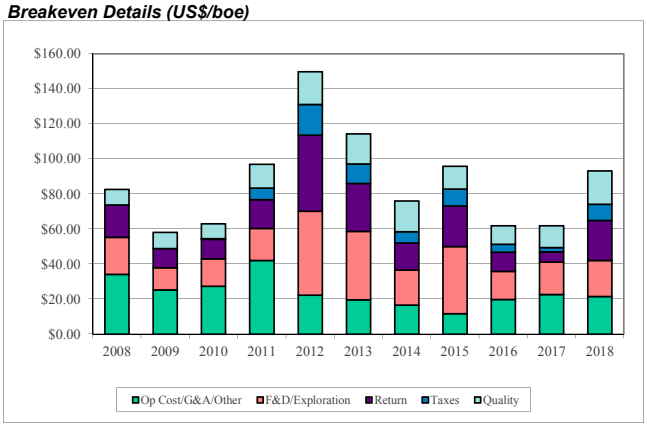
Upstream Operating Earnings (US$/boe)



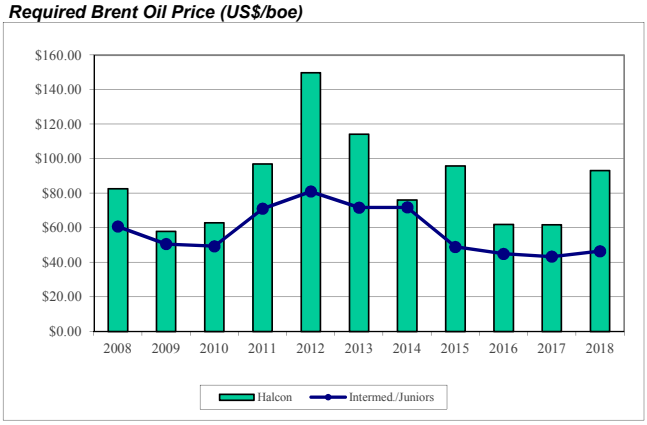
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Halcon Resources (HK - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	183	98	111	104	247	996	1,146	548	418	376	226
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	23	(11)	1	4	1	3	2	2	2	2	1
Total Revenue and Other Income	206	87	112	108	248	999	1,148	550	420	378	227
Crude Oil and Product Purchases											
Production and Transportation Expenses	49	43	40	39	74	246	279	214	186	155	107
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	23	19	18	21	111	132	117	88	125	111	62
Depreciation, Depletion and Amortization	47	32	27	21	90	464	534	364	167	110	78
Interest, net	24	19	23	17	31	58	146	233	151	-	43
Other	298	50	1	4	9	1,480	(243)	1,565	262	(529)	(204)
Earnings Before Income Tax	(234)	(75)	3	5	(67)	(1,380)	315	(1,914)	(471)	531	142
Current Income Taxes	-	-	-	-	(0)	-	(1)	9	(4)	(5)	96
Future Income Taxes	(96)	(16)	1	7	(13)	(158)	-	-	-	-	-
Total Income Taxes	(96)	(16)	1	7	(13)	(158)	(1)	9	(4)	(5)	96
Minority Interest	-	-	-	-	-	-	-	-	(37)	-	-
Earnings From Continuing Operations	(138)	(58)	2	(1)	(54)	(1,223)	316	(1,923)	(504)	536	46
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(138)	(58)	2	(1)	(54)	(1,223)	316	(1,923)	(504)	536	46
Preferred Stock Dividends	-	-	-	-	88	11	33	84	9	48	-
Net Earnings to Common Shareholders	(138)	(58)	2	(1)	(142)	(1,233)	283	(2,007)	(513)	488	46

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	(138)	(58)	2	(1)	(54)	(1,223)	316	(1,923)	(504)	536	46
Charges and Credits Not Impacting Cash	232	62	28	28	77	1,452	810	2,991	1,343	110	78
Other	(14)	40	8	7	32	328	(511)	(638)	(571)	(553)	(85)
Cash Flow From Operations	80	44	38	33	55	558	615	430	268	93	39
Change in Working Capital / Other	(6)	(12)	(0)	(3)	63	(64)	53	37	11	22	29
Net Cash From Operating Activities	74	32	38	30	118	494	668	467	278	115	67
Total Capital Expenditures	(83)	(24)	15	(25)	(1,256)	(2,520)	(1,567)	(670)	(290)	(384)	(593)
Acquisitions, net	0	0	0	0	(1,609)	416	484	1	0	982	(114)
Other	0	-	-	-	(2)	3	(188)	2	(2)	1	0
Net Cash From Investing Activities	(83)	(24)	15	(25)	(2,866)	(2,101)	(1,271)	(667)	(291)	599	(706)
Financing Activities:											
Net Change in Debt	(85)	(8)	(52)	(3)	1,812	1,081	557	190	114	(675)	202
Net Change in Common Stock	87	(0)	(1)	(1)	567	223	-	15	-	386	60
Net Change in Preferred Stock	-	-	-	-	400	345	-	(8)	-		
Cash Dividends Paid	-	-	-	-	-	-	(8)	-	-	-	-
Other	-	-	-	-	(28)	(41)	96	(33)	(110)	-	-
Net Cash From Financing Activities	1	(8)	(53)	(4)	2,751	1,607	644	164	4	(289)	262
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(7)	(0)	(0)	0	2	0	41	(36)	(8)	424	(377)
Cash and Equivalents, Beginning of Year	7	0	0	0	0	3	3	44	8	0	424.071
Cash and Equivalents, End of Year	0	0	0	0	3	3	44	8	0	424	47

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Halcon Resources (HK - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	44	24	21	20	288	339	703	557	161	472	145
Net Property, Plant and Equipment	297	249	210	217	4,489	4,916	5,380	2,898	1,157	1,170	1,924
Other Assets	39	38	35	31	264	101	352	4	2	2	15
Total Assets	380	311	265	268	5,041	5,356	6,434	3,459	1,320	1,644	2,084
Liabilities and Stockholders' Equity											
Total Current Liabilities	63	38	33	26	678	664	745	295	208	150	162
Long-term Debt	251	246	197	202	2,034	3,184	3,747	2,874	965	409	613
Deferred Income Taxes	-	-	-	-	160	-	-	-	-	-	96
Other Liabilities and Deferred Credits	33	28	31	34	75	61	54	53	35	12	16
Total Liabilities	346	312	261	262	2,948	3,909	4,545	3,222	1,207	572	887
Minority Interests	-	-	-	-	-	-	117	184	-	-	-
Stockholders' Equity											
Common Shares	0	0	0	0	0	0	0	0	0	0	0
Contributed Surplus (Paid-in Capital)	217	217	219	222	1,682	2,954	2,995	3,283	593	1,016	1,095
Preferred Stock		-	-	-	695	-	-	-	-	-	-
Retained Earnings	(167)	(217)	(215)	(216)	(274)	(1,506)	(1,223)	(3,231)	(480)	56	102
Other / Comprehensive Income (Loss)	-	-	-	-	(9)	-	-	-	-	-	-
Total Shareholders' Equity	50	(1)	4	6	2,093	1,448	1,772	52	113	1,072	1,197
Total Liabilities and Shareholders' Equity	396	311	265	268	5,041	5,356	6,434	3,459	1,320	1,644	2,084
Return on Capital Employed (ROCE)	**-32.7%**	**-15.1%**	**7.8%**	**-2.8%**	**-5.0%**	**-24.9%**	**8.2%**	**-43.1%**	**-19.2%**	**42.7%**	**4.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$80.58	$34.24	$51.97	$71.74	$72.04	$82.16	$74.71	$36.29	$30.99	$37.80	$44.44	$35.75	$46.01
Production Costs	$18.99	$16.82	$18.48	$25.98	$21.39	$19.24	$16.45	$11.43	$10.49	$11.42	$9.15	$10.58	$12.32
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$18.21	$12.45	$12.59	$14.20	$26.23	$38.11	$34.77	$24.02	$12.35	$11.02	$15.28	$12.40	$21.19
G&A/Other	$15.11	$8.36	$8.84	$15.95	$0.70	$0.37	$0.06	$0.19	$9.22	$11.14	$12.23	$10.42	$5.11
Pre-tax Earnings	$28.27	-$3.39	$12.05	$15.61	$23.72	$24.44	$23.43	$0.65	-$1.07	$4.22	$7.79	$2.34	$7.39
Income Taxes	-$35.89	-$6.43	$0.46	$4.52	$6.87	$12.96	$6.79	$0.19	-$0.31	$1.22	$2.26	$0.68	$2.14
Results of Operations	$64.16	$3.04	$11.59	$11.09	$16.85	$11.48	$16.64	$0.46	-$0.76	$3.00	$5.53	$1.67	$5.25

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Halcon Resources (HK - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	16.7	16.4	13.2	7.3	12.5	21.9	24.1	27.7	26.2	20.4	12.6	19.7	22.2
Liquids Production (b/d)	4,222	4,230	3,723	2,904	7,351	29,674	38,082	36,921	32,781	24,000	11,800	22,860	28,717
Total Production (boe/d)	6,999	6,967	5,922	4,120	9,430	33,328	42,106	41,543	37,151	27,397	13,904	26,151	32,420
% Gas Production	40%	39%	37%	30%	22%	11%	10%	11%	12%	12%	15%	13%	11%
% Oil Production	60%	61%	63%	70%	78%	89%	90%	89%	88%	88%	85%	87%	89%
Proven Reserves:													
Closing Gas Reserves (bcf)	97.0	89.2	53.6	40.1	73.8	69.7	103.7	78.4	80.2	46.7	104.7	77.2	82.8
Closing Oil Reserves (mmbbls)	18.6	19.1	15.5	14.4	92.8	124.3	171.9	133.7	135.2	43.3	67.8	82.1	110.4
Closing Total Proven Reserves (mmboe)	34.8	33.9	24.4	21.1	105.1	136.0	189.1	146.8	148.6	51.1	85.2	95.0	124.2
% Gas Reserves	46%	44%	37%	32%	12%	9%	9%	9%	9%	15%	20%	14%	11%
% Oil Reserves	54%	56%	63%	68%	88%	91%	91%	91%	91%	85%	80%	86%	89%
Proven Reserve Life Index	13.6	13.3	11.3	14.0	30.5	11.2	12.3	9.7	11.0	5.1	16.8	11.0	11.0
Proven Reserve Additions:													
Gas Additions (bcf)	9.7	-1.7	-30.8	-10.9	38.3	-18.4	42.7	-15.1	11.4	-26.1	62.6	47.9	75.6
Oil Additions (mmbbls)	(3.7)	2.0	-2.2	0.0	81.1	42.4	61.4	-24.7	13.5	-83.2	28.7	-40.9	-4.2
Total Additions (mmboe)	-2.1	1.7	-7.4	-1.8	87.4	39.3	68.5	-27.2	15.4	-87.5	39.2	-33.0	8.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	4.8	4.0	0.5	0.3	9.4	69.7	72.6	12.5	18.3	25.7	53.2	97.1	182.2
Net Acquisitions	0.0	(0.6)	-4.6	0.0	79.5	-20.1	-16.5	0.0	0.0	-133.6	3.6	(130.0)	(146.4)
Revisions of Estimates	-6.8	(1.6)	(3.3)	(2.2)	(1.5)	(10.3)	12.4	(39.7)	(2.9)	20.4	(17.6)	(0.1)	(27.3)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-234.5%	233.4%	-7.4%	-18.7%	10.8%	177.2%	106.0%	-45.9%	118.8%	-29.3%	135.7%	-294.6%	2165.6%
Net Acquisitions	1.4%	-38.3%	62.6%	-0.3%	90.9%	-51.0%	-24.1%	-0.1%	-0.2%	152.7%	9.3%	394.3%	-1740.8%
Revisions of Estimates	333.1%	-95.1%	44.8%	119.0%	-1.7%	-26.2%	18.1%	146.0%	-18.6%	-23.3%	-45.0%	0.2%	-324.8%
Additions as % of Production:													
Gas	159.1%	-28.9%	-639.6%	-409.2%	840.4%	-229.8%	484.9%	-149.1%	118.8%	-350.3%	1359.2%	221.7%	186.3%
Oil	-237.8%	128.5%	-164.1%	-1.9%	3021.4%	391.6%	441.9%	-182.9%	112.6%	-949.2%	667.1%	-163.6%	-8.0%
Total	-80.3%	66.7%	-340.7%	-122.1%	2540.4%	323.4%	446.0%	-179.2%	113.4%	-875.0%	771.8%	-115.1%	14.2%
Additions as % of Reserves:													
Gas	10.0%	-1.9%	-57.5%	-27.2%	51.9%	-26.4%	41.2%	-19.2%	14.2%	-55.8%	59.8%	62.0%	91.3%
Oil	-19.7%	10.4%	-14.4%	-0.1%	87.4%	34.1%	35.7%	-18.4%	10.0%	-191.9%	42.4%	-49.9%	-3.8%
Total	-5.9%	5.0%	-30.2%	-8.7%	83.2%	28.9%	36.2%	-18.5%	10.3%	-171.2%	46.0%	-34.7%	6.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$14.9	$0.3	$4.6	$7.1	$232.7	$1,182.1	$1,107.5	$194.7	$81.1	$183.8	$293.1	$558.0	$1,860.2
Development	$57.1	$28.2	$27.9	$17.3	$254.5	$749.0	$374.3	$285.2	$181.7	$143.3	$182.0	$507.0	$1,166.5
Net Acquisitions	$12.8	$1.3	$1.1	$0.7	$3,819.8	$507.9	$236.1	-$0.3	$4.9	$1,013.5	$334.0	$1,352.5	$1,588.3
Total Expenditures	$84.7	$29.9	$33.5	$25.2	$4,307.0	$2,439.0	$1,717.9	$479.6	$267.7	$1,340.7	$809.1	$2,417.5	$4,615.0
Expenditures as % of Total:													
Exploration	17.5%	1.1%	13.6%	28.3%	5.4%	48.5%	64.5%	40.6%	30.3%	13.7%	36.2%	23.1%	40.3%
Development	67.4%	94.5%	83.0%	68.8%	5.9%	30.7%	21.8%	59.5%	67.9%	10.7%	22.5%	21.0%	25.3%
Net Acquisitions	15.1%	4.4%	3.4%	2.9%	88.7%	20.8%	13.7%	-0.1%	1.8%	75.6%	41.3%	55.9%	34.4%
Cashflow (US$million)	$210.4	$39.4	$52.3	$38.0	$148.3	$603.2	$790.2	$371.2	$157.1	$140.2	$105.6	$402.9	$1,564.3
Cashflow (US$/boe)	$82.37	$15.49	$24.18	$25.29	$43.08	$49.59	$51.42	$24.48	$11.59	$14.02	$20.81	$14.07	$26.44
Recycle Ratio	-1.8x	1.2x	-2.0x	-1.8x	0.9x	1.3x	2.6x	-1.4x	0.7x	0.8x	1.0x	-0.2x	0.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-$35.56	$12.18	-$11.77	-$13.30	$61.14	$32.49	$17.42	-$17.64	$17.06	$7.10	$13.37	$10.98	$19.55
Net Acquisition Costs	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	-$45.81	$12.74	-$12.18	-$13.73	$48.09	$38.92	$19.94	-$17.65	$15.99	$18.41	$20.65	-$73.36	$548.61
Exploration & Development (excl. revisions)	$14.96	$7.22	$59.47	$71.27	$51.62	$27.69	$20.41	$38.48	$14.39	$12.75	$8.94	$10.97	$16.61
Net Acquisition Costs	na	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	$17.00	$7.55	$61.55	$72.33	$47.31	$33.43	$23.30	$38.32	$13.67	$25.58	$14.24	-$73.54	$129.14

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Halcon Resources (HK - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	18.99	16.82	18.48	25.98	21.39	19.24	16.45	11.43	10.49	11.42	9.15	10.58	12.32
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	15.11	8.36	8.84	15.95	0.70	0.37	0.06	0.19	9.22	11.14	12.23	10.42	5.11
F&D Costs (1-Year)	21.15	12.74	15.62	18.27	48.09	38.92	19.94	38.32	15.99	18.41	20.65	18.78	22.66
Return on Capital	18.46	10.87	11.13	16.45	43.24	27.37	15.60	23.26	11.04	5.95	22.75	12.95	15.57
Income Taxes	-	-	0.44	6.71	17.63	11.16	6.36	9.49	4.50	2.43	9.28	5.28	6.35
Breakeven Oil Price	**73.72**	**48.78**	**54.51**	**83.35**	**131.05**	**97.07**	**58.42**	**82.69**	**51.24**	**49.34**	**74.06**	**58.01**	**62.01**
Quality Differential	8.80	9.16	8.33	13.60	18.77	17.10	17.62	13.06	10.63	12.45	19.04	14.04	14.56
Required Brent Price	**82.52**	**57.94**	**62.84**	**96.95**	**149.82**	**114.17**	**76.03**	**95.75**	**61.87**	**61.79**	**93.10**	**72.05**	**76.57**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.23	21.83	24.03	33.06	26.05	21.02	17.60	12.34	11.43	12.48	10.46	11.63	13.39
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	18.49	10.85	11.50	20.30	0.85	0.40	0.07	0.21	10.04	12.16	13.98	11.46	5.55
F&D Costs (1-Year)	23.97	13.94	20.96	38.06	51.20	39.52	21.37	41.04	17.40	20.53	26.47	21.73	25.36
Return on Capital	20.19	11.50	15.03	33.52	45.03	29.60	16.78	25.29	12.55	6.57	27.47	14.63	17.37
Income Taxes	-	-	0.60	13.67	18.37	12.07	6.85	10.31	5.12	2.68	11.20	5.97	7.08
Breakeven Oil Price	**85.88**	**58.13**	**72.11**	**138.61**	**141.51**	**102.61**	**62.66**	**89.18**	**56.53**	**54.42**	**89.58**	**65.42**	**68.75**
Quality Differential	15.78	2.06	10.83	17.30	22.86	18.68	18.85	14.10	11.58	13.60	21.76	15.64	15.97
Required Brent Price	**101.66**	**60.18**	**82.94**	**155.91**	**164.37**	**121.29**	**81.51**	**103.28**	**68.11**	**68.02**	**111.34**	**81.06**	**84.73**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.23	21.83	24.03	33.06	26.05	21.02	17.60	12.34	11.43	12.48	10.46	11.63	13.39
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	18.49	10.85	11.50	20.30	0.85	0.40	0.07	0.21	10.04	12.16	13.98	11.46	5.55
F&D Costs (1-Year)	42.90	30.33	34.10	37.64	115.84	81.83	40.14	26.11	15.47	36.03	11.64	19.50	25.88
Return on Capital	35.87	24.87	24.39	33.15	101.80	58.58	31.52	16.11	10.92	11.50	12.10	13.15	17.72
Income Taxes	-	-	0.97	13.52	41.52	23.89	12.86	6.57	4.46	4.69	4.93	5.36	7.23
Breakeven Oil Price	**120.49**	**87.89**	**94.98**	**137.66**	**286.07**	**185.73**	**102.18**	**61.34**	**52.32**	**76.86**	**53.11**	**61.09**	**69.76**
Quality Differential	15.78	2.06	10.83	17.30	22.86	18.68	18.85	14.10	11.58	13.60	21.76	15.64	15.97
Required Brent Price	**136.27**	**89.94**	**105.81**	**154.96**	**308.93**	**204.41**	**121.03**	**75.43**	**63.90**	**90.46**	**74.87**	**76.74**	**85.74**

Source: BMO Capital Markets, Company Reports

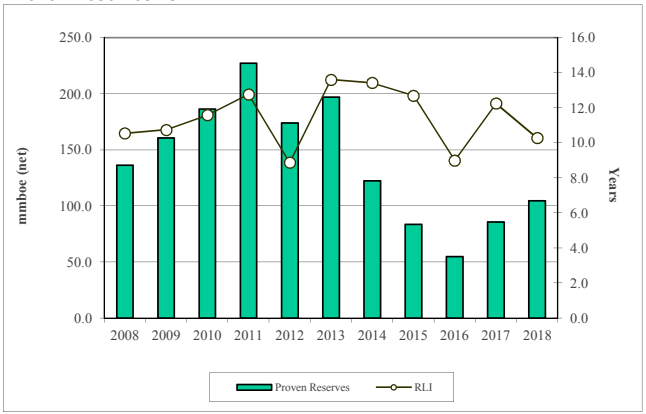
See pages F1 to F4 for analyst coverage.

High Point Resources (HPR - NYSE)

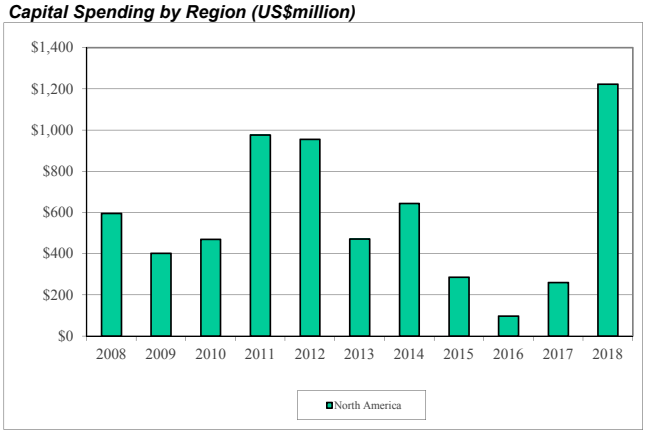
US$, net

- HighPoint Resources was formed in 2018 as a combination of Bill Barrett Corporation and Fifth Creek Energy.
- The company reported results of operations of $7.93/boe in 2018 versus $0.77/boe.
- One-year F&D costs came in at $42.21/boe while the F&D costs ex-revisions were recorded at $21.28/boe. On a realized oil:gas price ratio basis, F&D costs jumped to $24.49/boe from $6.43/boe, while PD costs also jumped to $60.48/boe from $17.15/boe last year.
- High Point's 2018 operations imply a required Brent breakeven oil price of $78.83/boe on total proved reserves, while PD costs suggest a Brent breakeven of $145.79/boe.
- The company reported ROCE of 10.7% in 2018 versus a loss on capital of 9.9%.

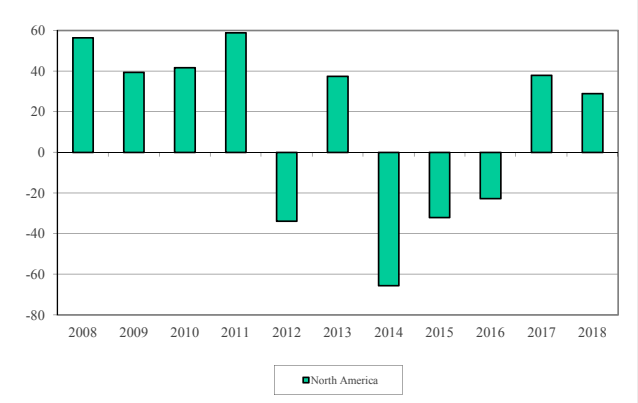
Proven Reserves vs RLI



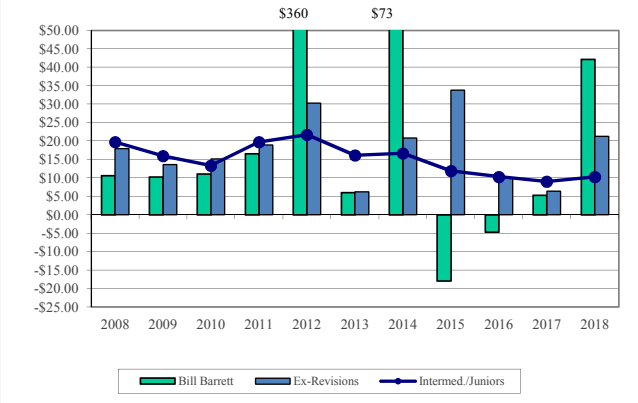
Capital Spending by Region (US$million)



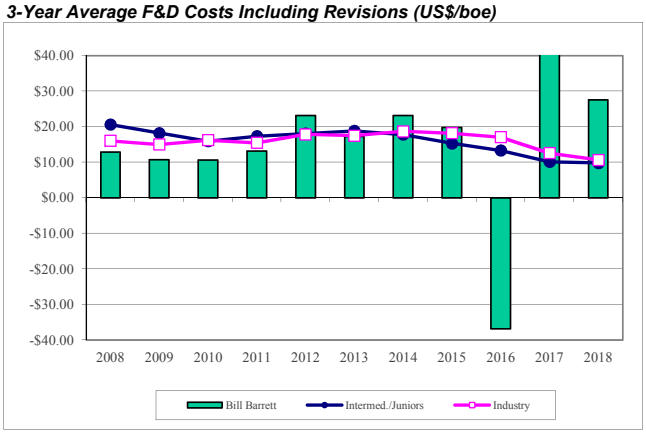
Proven Reserve Additions by Region (million boe)



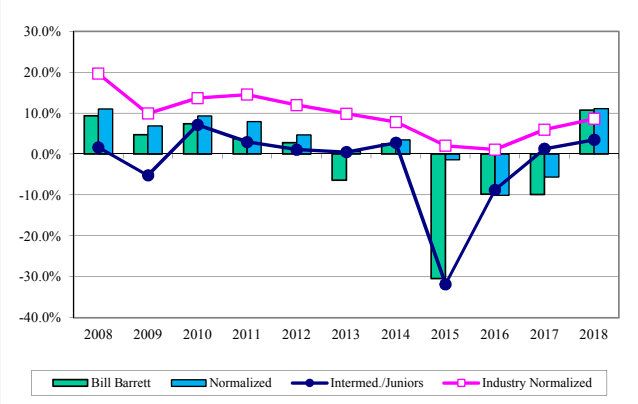
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

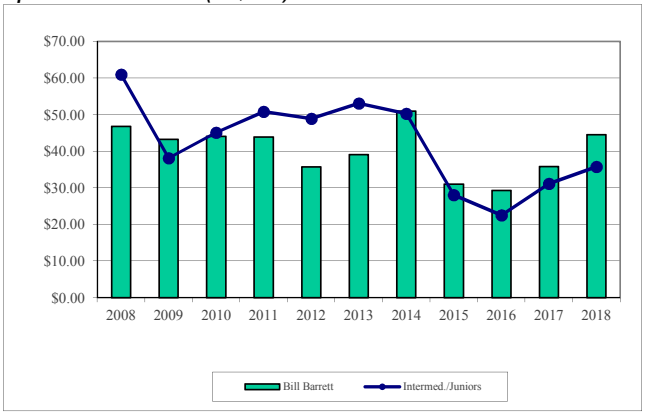
See pages F1 to F4 for analyst coverage.

High Point Resources (HPR - NYSE)

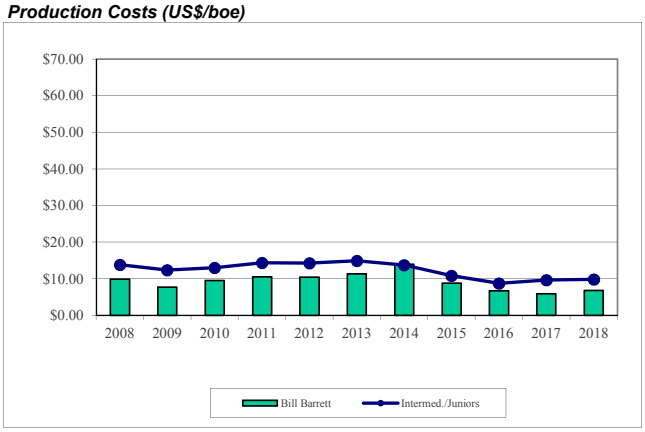
US$/boe, net

North America

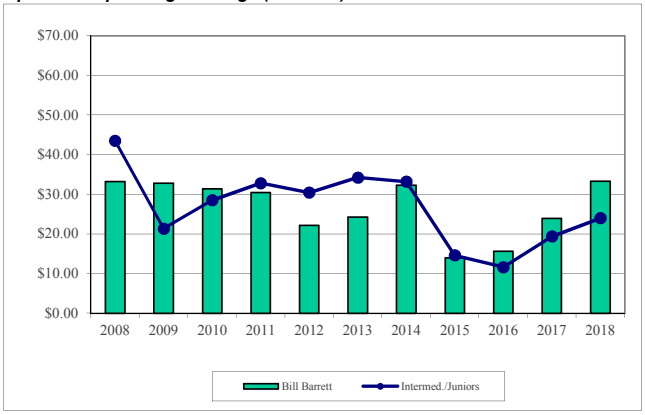
Upstream Net Revenue (US$/boe)



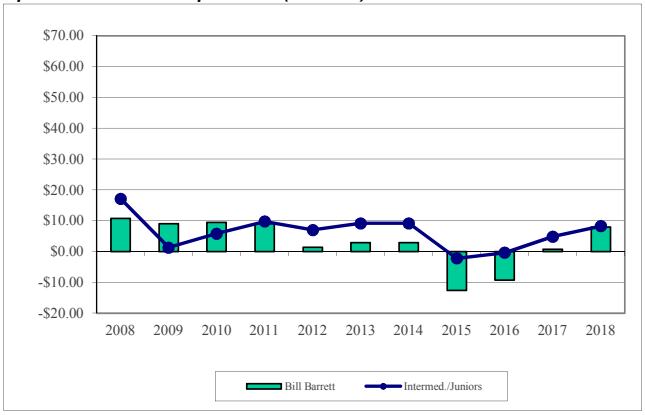
Production Costs (US$/boe)



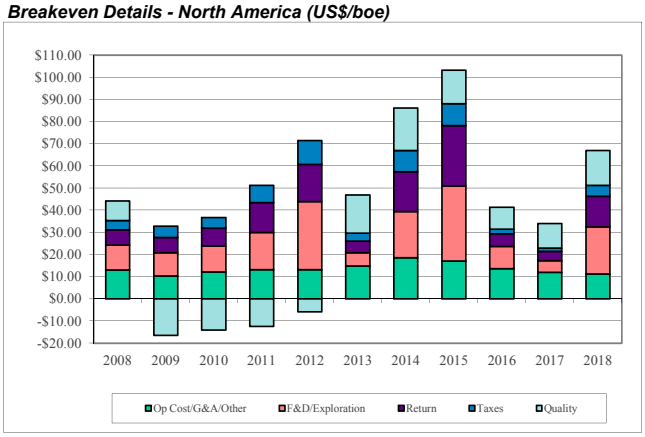
Upstream Operating Earnings (US$/boe)



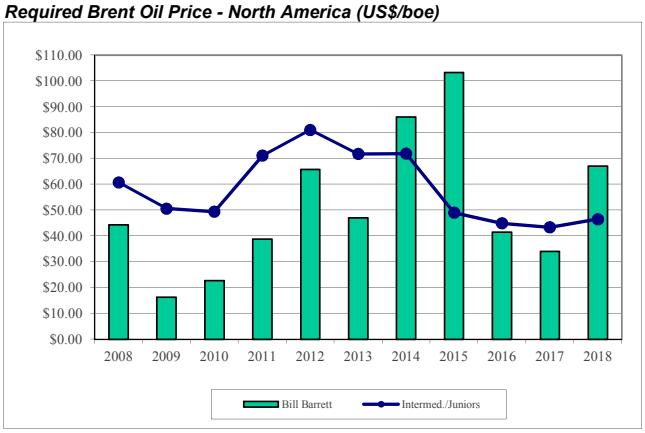
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

High Point Resources (HPR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	606	648	708	781	701	566	464	205	178	251	453
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-		
Other	12	(50)	(10)	(9)	72	(21)	206	108	0	2	0
Total Revenue and Other Income	618	598	698	771	773	545	670	312	179	253	453
Crude Oil and Product Purchases											
Production and Transportation Expenses	128	116	154	188	205	165	127	58	41	41	69
Marketing Expenses	-	-	-	-	-	-	-	-	-		-
Exploration / Dry Hole Costs	8	3	9	4	9	0	0	0	0	0	0
General and Administrative	57	54	58	48	52	49	42	54	42	42	45
Depreciation, Depletion and Amortization	206	254	261	288	327	280	236	205	172	160	228
Interest, net	14	30	44	59	95	87	68	65	59	56	51
Other	32	52	45	137	83	276	163	594	35	92	(64)
Earnings Before Income Tax	172	88	128	48	2	(311)	33	(665)	(170)	(140)	123
Current Income Taxes	1	6	(9)	(0)	2	(2)	1	-	-	(1)	-
Future Income Taxes	64	32	57	18	(0)	(117)	17	(177)	-	-	2
Total Income Taxes	65	38	48	18	2	(119)	18	(177)	-	(1)	2
Minority Interest	-	-	-	-	-	-				-	-
Earnings From Continuing Operations	108	50	81	31	1	(193)	15	(488)	(170)	(138)	121
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	108	50	81	31	1	(193)	15	(488)	(170)	(138)	121
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	108	50	81	31	1	(193)	15	(488)	(170)	(138)	121

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	108	50	81	31	1	(193)	15	(488)	(170)	(138)	121
Charges and Credits Not Impacting Cash	302	338	363	424	395	401	299	604	176	210	231
Other	11	68	15	20	(1)	73	(83)	90	120	45	(129)
Cash Flow From Operations	421	456	458	475	394	281	231	206	126	116	223
Change in Working Capital / Other	(18)	24	(11)	5	(6)	(16)	31	(13)	(4)	6	8
Net Cash From Operating Activities	403	481	447	479	388	265	262	194	122	122	231
Total Capital Expenditures	(573)	(454)	(449)	(958)	(966)	(448)	(585)	(326)	(108)	(241)	(454)
Acquisitions, net	2	4	3	2	329	311	555	123	25	102	0
Other	-	-	-	-	-	-	-	0	-	-	(53)
Net Cash From Investing Activities	(571)	(451)	(446)	(957)	(637)	(137)	(29)	(203)	(83)	(139)	(508)
Net Change in Debt	153	(11)	(5)	470	280	(156)	(119)	(25)	(0)	(47)	(0)
Net Change in Common Stock	4	1	24	22	1	6	0	-	110	111	0
Net Change in Preferred Stock	-	-	-	-		-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-		-	-	-	-	-	-
Other	(6)	(9)	(15)	(16)	(10)	(3)	(3)	(3)	(1)	(8)	(5)
Net Cash From Financing Activities	151	(19)	3	476	271	(153)	(121)	(28)	108	56	(5)
Effect of Exchange Rate on Cash	-	-	-	-						-	-
Net Increase/(Decrease) in Cash	(17)	11	4	(1)	22	(25)	111	(37)	147	39	(282)
Cash and Equivalents, Beginning of Year	60	43	54	59	57	79	55	166	129	276	314
Cash and Equivalents, End of Year	43	54	59	57	79	55	166	129	276	314.466	32.774

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

High Point Resources (HPR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	313	180	208	246	228	157	426	274	318	368	190
Net Property, Plant and Equipment	1,562	1,659	1,812	2,407	2,611	2,202	1,753	1,171	1,062	1,019	2,030
Other Assets	119	27	19	35	30	22	65	70	5	4	33
Total Assets	1,994	1,866	2,039	2,688	2,869	2,382	2,244	1,515	1,385	1,391	2,252
Total Current Liabilities	226	153	166	233	213	193	265	145	85	149	248
Long-term Debt	407	402	404	882	1,157	979	803	803	712	618	617
Deferred Income Taxes	214	218	266	282	266	161	122	-	-	-	-
Other Liabilities and Deferred Credits	48	64	61	72	51	43	25	17	17	25	175
Total Liabilities	895	838	898	1,469	1,687	1,376	1,215	966	814	792	1,040
Minority Interests	-	-								-	-
Common Shares	0	0	0	0	0	0	0	0	0	0	0
Contributed Surplus (Paid-in Capital)	776	792	831	870	884	904	914	921	1,114	1,280	1,772
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	131	182	262	293	293	101	116	(372)	(542)	(681)	(560)
Other / Comprehensive Income (Loss)	192	54	48	56	5	1	-	-	-	-	-
Total Shareholders' Equity	1,099	1,029	1,141	1,219	1,183	1,006	1,029	549	572	599	1,212
Total Liabilities and Shareholders' Equity	1,994	1,866	2,039	2,688	2,869	2,382	2,244	1,515	1,385	1,391	2,252
Return on Capital Employed (ROCE)	**9.4%**	**4.8%**	**7.4%**	**3.8%**	**2.8%**	**-6.4%**	**2.5%**	**-30.4%**	**-9.8%**	**-9.9%**	**10.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Worldwide													
Net Revenue	$46.85	$43.31	$44.05	$43.86	$35.74	$39.07	$50.94	$31.02	$29.28	$35.88	$44.53	$37.93	$39.81
Production Costs	$9.90	$7.78	$9.57	$10.54	$10.45	$11.38	$13.95	$8.86	$6.71	$5.90	$6.81	$6.51	$8.65
Exploration	$0.63	$0.22	$0.57	$0.20	$0.45	$0.02	$0.05	$0.02	$0.01	$0.01	$0.01	$0.01	$0.02
DD&A	$15.95	$16.95	$16.21	$16.20	$16.67	$19.33	$25.88	$31.13	$28.18	$22.85	$22.46	$24.08	$25.69
G&A/Other	$3.13	$2.54	$2.54	$2.68	$2.66	$3.39	$4.61	$8.17	$6.92	$6.07	$4.44	$5.58	$5.79
Pre-tax Results of Operations	$17.24	$15.83	$15.17	$14.24	$5.51	$4.95	$6.46	-$17.17	-$12.55	$1.05	$10.81	$1.76	-$0.35
Income Taxes	$6.47	$6.82	$5.66	$5.20	$4.06	$1.98	$3.50	-$4.57	-$3.34	$0.28	$2.88	$0.47	$0.33
Results of Operations	$10.77	$9.02	$9.50	$9.04	$1.45	$2.97	$2.95	-$12.60	-$9.21	$0.77	$7.93	$1.29	-$0.67

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
North America													
Net Revenue	$46.85	$43.31	$44.05	$43.86	$35.74	$39.07	$50.94	$31.02	$29.28	$35.88	$44.53	$37.93	$39.81
Production Costs	$9.90	$7.78	$9.57	$10.54	$10.45	$11.38	$13.95	$8.86	$6.71	$5.90	$6.81	$6.51	$8.65
Exploration	$0.63	$0.22	$0.57	$0.20	$0.45	$0.02	$0.05	$0.02	$0.01	$0.01	$0.01	$0.01	$0.02
DD&A	$15.95	$16.95	$16.21	$16.20	$16.67	$19.33	$25.88	$31.13	$28.18	$22.85	$22.46	$24.08	$25.69
G&A/Other	$3.13	$2.54	$2.54	$2.68	$2.66	$3.39	$4.61	$8.17	$6.92	$6.07	$4.44	$5.58	$5.79
Pre-tax Results of Operations	$17.24	$15.83	$15.17	$14.24	$5.51	$4.95	$6.46	-$17.17	-$12.55	$1.05	$10.81	$1.76	-$0.35
Income Taxes	$6.47	$6.82	$5.66	$5.20	$4.06	$1.98	$3.50	-$4.57	-$3.34	$0.28	$2.88	$0.47	$0.33
Results of Operations	$10.77	$9.02	$9.50	$9.04	$1.45	$2.97	$2.95	-$12.60	-$9.21	$0.77	$7.93	$1.29	-$0.67

Source: BMO Capital Markets, Company Reports

High Point Resources (HPR - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)								1.1	2.6	9.9	21.9	11.5	7.1
Liquids Production (b/d)								2,211	5,192	15,332	30,556	17,026	10,658
Total Production (boe/d)								2,395	5,626	16,976	34,205	18,936	11,841
% Gas Production								8%	8%	10%	11%	10%	10%
% Oil Production								92%	92%	90%	89%	90%	90%
Proven Reserves:													
Gas Reserves (bcf)								6.2	19.5	53.3	80.5	51.1	31.9
Oil Reserves (mmbbls)								12.0	34.4	73.5	105.5	71.1	45.1
Total Proven Reserves (mmboe)								13.0	37.7	82.4	118.9	79.6	50.4
% Gas Reserves								8%	9%	11%	11%	11%	11%
% Oil Reserves								92%	91%	89%	89%	89%	89%
Proven Reserve Life Index								14.9	18.4	13.3	9.5	13.7	18.7
Proven Reserve Additions:													
Gas Additions (bcf)								4.9	14.3	37.3	35.3	86.9	91.8
Oil Additions (mmbbls)								10.5	24.4	44.6	43.1	112.1	122.6
Total Additions (mmboe)								11.3	26.7	50.9	49.0	126.6	137.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions								10.8	25.2	51.8	35.7	112.8	123.5
Acquisitions								0.0	0.5	0.0	0.6	1.1	1.1
Dispositions								-	(0.1)	-	-	(0.1)	(0.1)
Revisions of Estimates								0.6	1.1	(1.0)	12.7	12.9	13.4
Components as % of Total Additions:													
Extensions, Discoveries and Additions								95.1%	94.4%	101.9%	72.8%	89.1%	89.6%
Acquisitions								0.0%	1.7%	0.0%	1.3%	0.9%	0.8%
Dispositions								0.0%	-0.5%	0.0%	0.0%	-0.1%	-0.1%
Revisions of Estimates								4.9%	4.3%	-1.9%	25.9%	10.2%	9.7%
Additions as % of Production:													
Gas								1220.8%	1503.6%	1036.8%	441.1%	692.7%	709.2%
Oil								1302.1%	1285.1%	797.7%	386.8%	601.4%	630.5%
Total								1295.8%	1302.0%	820.8%	392.6%	610.6%	638.4%
Additions as % of Reserves:													
Gas								80.1%	73.3%	70.1%	43.8%	170.1%	288.0%
Oil								87.7%	70.7%	60.7%	40.9%	157.6%	272.1%
Total								87.1%	70.9%	61.8%	41.2%	159.0%	273.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration								$115.5	$158.3	$0.0	$0.0	$158.4	$273.9
Development								$0.9	$1.7	$597.4	$711.0	$1,310.1	$1,311.0
Acquisitions								$11.4	$55.1	$69.1	$29.8	$154.0	$165.4
Dispositions								na	na	na	na	na	na
Total Expenditures								$127.8	$215.1	$666.6	$740.8	$1,622.5	$1,750.3
Expenditures as % of Total:													
Exploration								90.4%	73.6%	0.0%	0.0%	9.8%	15.6%
Development								0.7%	0.8%	89.6%	96.0%	80.7%	74.9%
Acquisitions								9.0%	25.6%	10.4%	4.0%	9.5%	9.5%
Cashflow (US$million)								$26.2	$30.5	$201.9	$408.2	$640.5	$666.7
Cashflow (US$/boe)								$29.97	$14.83	$32.58	$32.69	$30.89	$30.85
Recycle Ratio								2.7x	1.9x	2.5x	2.2x	2.4x	2.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)								$10.27	$6.06	$11.75	$14.69	$11.69	$11.57
Acquisition Costs								na	$118.32	na	$47.34	$140.72	$151.18
All Sources (incl. revisions)								$11.28	$8.01	$13.11	$15.11	$12.80	$12.68
Exploration & Development (excl. revisions)								$10.79	$6.34	$11.53	$19.92	$13.02	$12.83
Acquisition Costs								na	$118.32	na	$47.34	$140.72	$151.18
All Sources (excl. revisions)								$11.86	$8.37	$12.86	$20.39	$14.25	$14.04

Source: BMO Capital Markets, Company Reports

High Point Resources (HPR - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	9.90	7.78	9.57	10.54	10.45	11.38	13.95	8.86	6.71	5.90	6.81	6.51	8.65
Exploration Expense	0.63	0.22	0.57	0.20	0.45	0.02	0.05	0.02	0.01	0.01	0.01	0.01	0.02
G&A/Other	3.13	2.54	2.54	2.68	2.66	3.39	4.61	8.17	6.92	6.07	4.44	5.58	5.79
F&D Costs (1-Year)	10.57	10.22	11.09	16.59	30.32	6.05	20.83	33.84	10.04	5.28	21.28	12.20	18.25
Return on Capital	6.99	6.89	8.14	13.48	16.83	5.28	17.91	27.29	5.65	4.12	13.71	8.08	13.30
Income Taxes	4.19	5.21	4.85	7.76	10.75	3.52	9.65	9.91	2.05	1.49	4.98	2.93	5.25
Breakeven Oil Price	**35.41**	**32.84**	**36.76**	**51.26**	**71.46**	**29.64**	**66.99**	**88.09**	**31.39**	**22.87**	**51.22**	**35.31**	**51.26**
Quality Differential	8.82	(16.53)	(14.04)	(12.45)	(5.78)	17.28	19.10	15.12	9.99	11.10	15.79	12.29	14.22
Required Brent Price	**44.23**	**16.31**	**22.72**	**38.81**	**65.68**	**46.93**	**86.09**	**103.21**	**41.39**	**33.97**	**67.01**	**47.61**	**65.48**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	18.58	15.78	19.10	22.58	26.25	18.08	17.96	10.09	7.69	6.85	8.20	7.65	10.32
Exploration Expense	1.18	0.44	1.13	0.44	1.13	0.04	0.06	0.03	0.02	0.01	0.01	0.01	0.03
G&A/Other	5.87	5.15	5.08	5.75	6.69	5.39	5.93	9.31	7.93	7.04	5.34	6.56	6.91
F&D Costs (1-Year)	19.76	20.21	20.38	27.35	54.14	6.23	23.57	37.74	12.00	6.43	24.49	14.30	20.84
Return on Capital	12.98	13.66	14.85	23.79	39.87	6.68	23.62	30.25	6.58	4.74	15.98	9.16	15.46
Income Taxes	7.79	10.32	8.85	13.69	25.46	4.45	12.72	10.98	2.39	1.72	5.80	3.33	6.11
Breakeven Oil Price	**66.16**	**65.56**	**69.39**	**93.59**	**153.55**	**40.86**	**83.87**	**98.39**	**36.59**	**26.79**	**59.82**	**41.01**	**59.66**
Quality Differential	16.54	(33.56)	(28.04)	(26.67)	(14.54)	27.47	24.59	17.22	11.44	12.88	19.01	14.45	17.03
Required Brent Price	**82.70**	**32.00**	**41.35**	**66.93**	**139.01**	**68.34**	**108.46**	**115.61**	**48.04**	**39.68**	**78.83**	**55.46**	**76.69**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	18.58	15.78	19.10	22.58	26.25	18.08	17.96	10.09	7.69	6.85	8.20	7.65	10.32
Exploration Expense	1.18	0.44	1.13	0.44	1.13	0.04	0.06	0.03	0.02	0.01	0.01	0.01	0.03
G&A/Other	5.87	5.15	5.08	5.75	6.69	5.39	5.93	9.31	7.93	7.04	5.34	6.56	6.91
F&D Costs (1-Year)	36.55	35.20	35.40	45.02	58.37	21.11	37.54	49.05	20.05	17.15	60.48	32.56	36.85
Return on Capital	24.02	23.84	25.98	39.22	41.59	22.66	37.15	39.71	11.00	12.64	38.70	20.87	27.33
Income Taxes	14.42	18.02	15.48	22.57	26.56	15.11	20.01	14.42	3.99	4.59	14.05	7.58	10.79
Breakeven Oil Price	**100.62**	**98.44**	**102.17**	**135.57**	**160.60**	**82.38**	**118.65**	**122.61**	**50.67**	**48.28**	**126.78**	**75.23**	**92.23**
Quality Differential	16.54	(33.56)	(28.04)	(26.67)	(14.54)	27.47	24.59	17.22	11.44	12.88	19.01	14.45	17.03
Required Brent Price	**117.16**	**64.88**	**74.13**	**108.90**	**146.06**	**109.86**	**143.24**	**139.82**	**62.11**	**61.16**	**145.79**	**89.67**	**109.26**

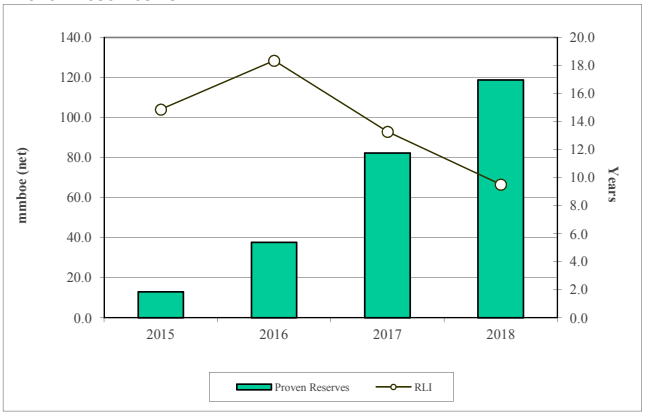
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

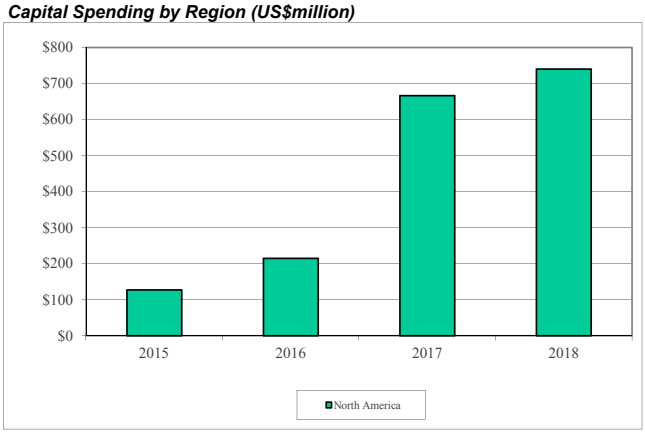
Jagged Peak Energy (JAG - NYSE) US$, net

- Jagged Peak yielded strong results of operations of $13.85/boe compared to results of $11.71/boe in 2017.
- One-year F&D costs increased to $15.11/boe versus $13.11/boe last year. On a realized oil:gas price ratio basis, F&D costs were $16.87/boe, up from $14.28/boe in 2017 while the costs for PD reserves were $17.86/boe, lower than $24.77/boe the previous year.
- Jagged Peak's 2018 operations suggest a required Brent breakeven oil price of $62.45/boe on total proved reserves, while its PD cost assessment suggests a breakeven oil price of $64.26/boe.
- The company reported a return on capital of 14.0% in 2018 compared to a normalized 2017 ROCE of 2.5%.

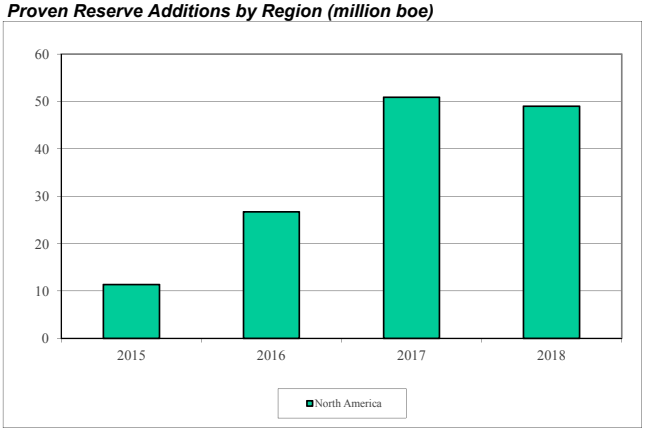
Proven Reserves vs RLI



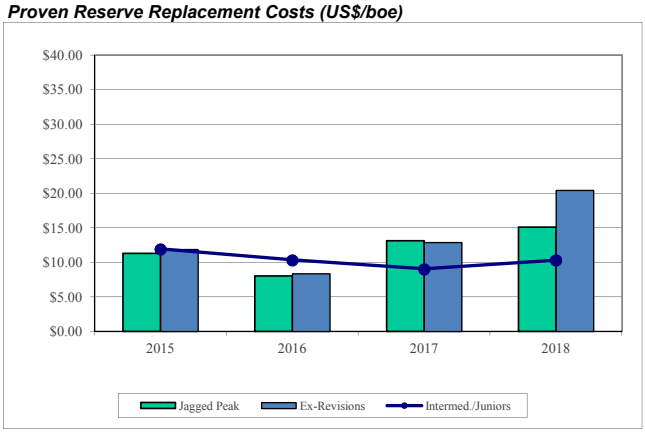
Capital Spending by Region (US$million)



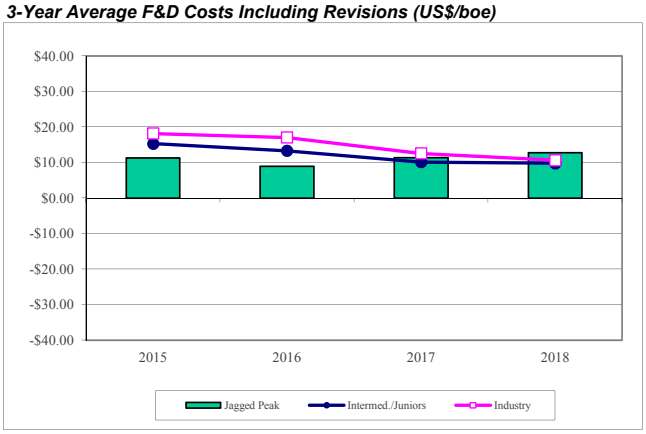
Proven Reserve Additions by Region (million boe)



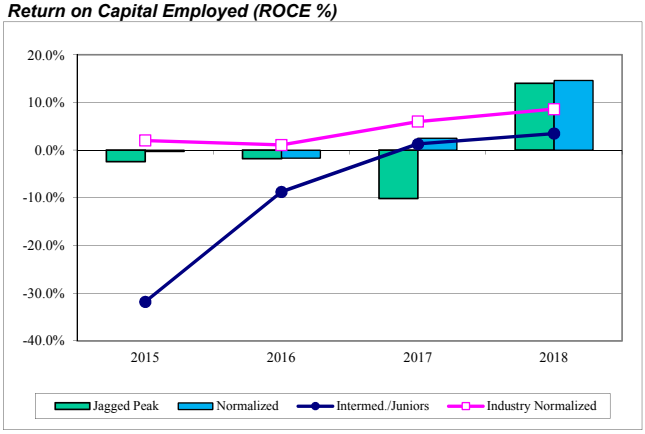
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

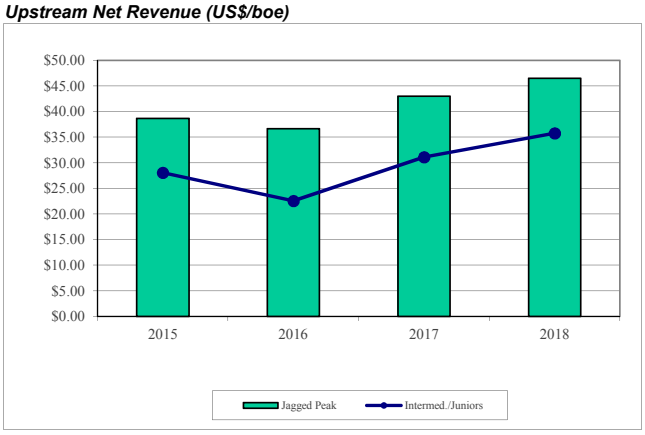
See pages F1 to F4 for analyst coverage.

Jagged Peak Energy (JAG - NYSE)

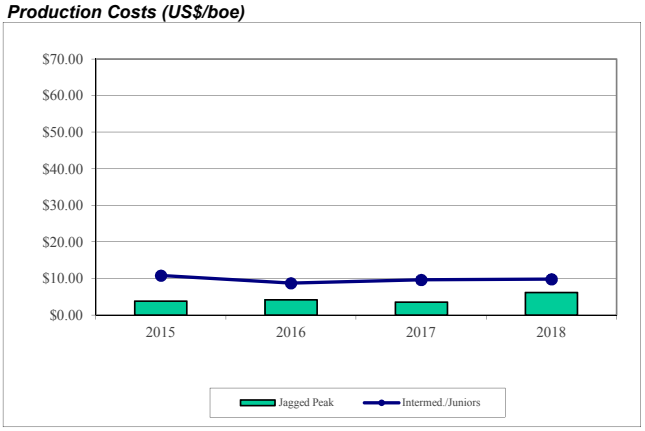
US$/boe, net

North America

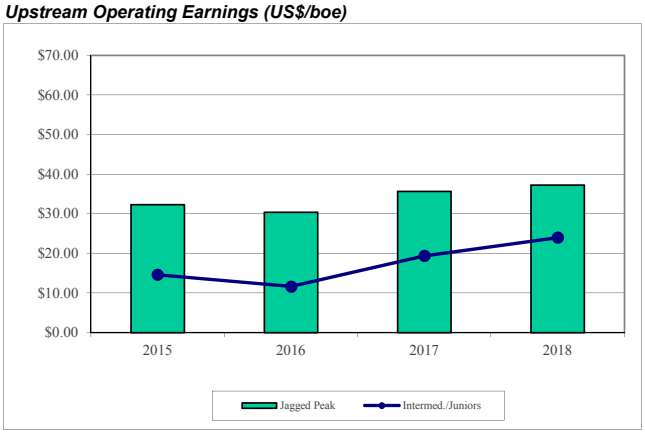
Upstream Net Revenue (US$/boe)



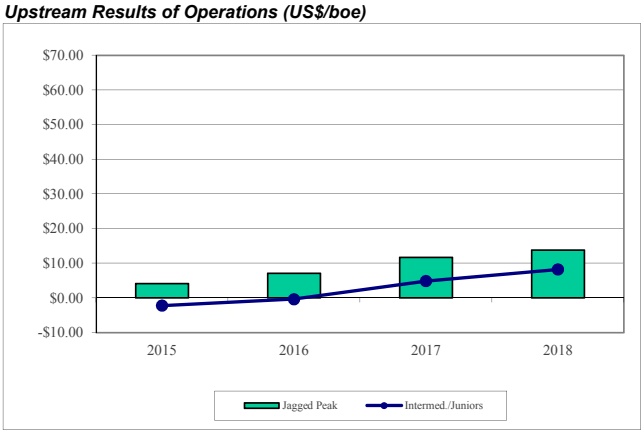
Production Costs (US$/boe)



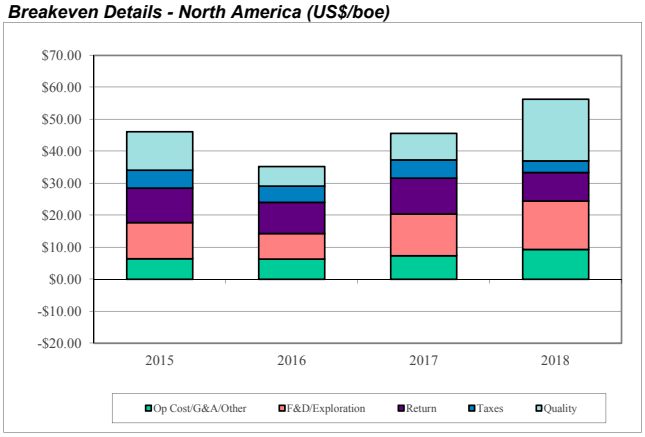
Upstream Operating Earnings (US$/boe)



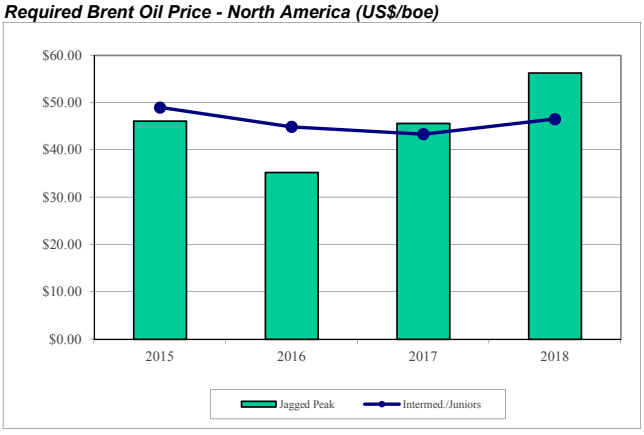
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Jagged Peak Energy (JAG - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties								34	75	266	581
Midstream / Downstream Revenue									-		
Other								0	1	1	1
Total Revenue and Other Income	-	-	-	-	-	-	-	34	77	267	582
Crude Oil and Product Purchases											
Production and Transportation Expenses								3	9	22	77
Marketing Expenses								-	-	-	-
Exploration / Dry Hole Costs								0	2	0	0
General and Administrative								7	12	24	39
Depreciation, Depletion and Amortization								23	40	111	222
Interest, net								0	3	3	6
Other								8	21	501	5
Earnings Before Income Tax	-	-	-	-	-	-	-	(7)	(10)	(394)	232
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes								-	-	58	66
Total Income Taxes								-	-	58	66
Minority Interest	-	-	-	-	-	-		-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	-	-	(7)	(10)	(452)	165
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	375	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-		
Net Earnings	-	-	-	-	-	-	-	(7)	(10)	(76)	165
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	-	-	(7)	(10)	(76)	165

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	-	-	(7)	(10)	(452)	165
Charges and Credits Not Impacting Cash	-	-	-	-	-	-	-	29	41	169	317
Other								5	(1)	484	(74)
Cash Flow From Operations	-	-	-	-	-	-	-	26	30	202	408
Change in Working Capital / Other	-	-	-	-	-	-	-	(6)	2	(23)	19
Net Cash From Operating Activities	-	-	-	-	-	-	-	20	32	179	428
Total Capital Expenditures	-	-	-	-	-	-	-	(97)	(142)	(527)	(712)
Acquisitions, net								(54)	(54)	(73)	(30)
Other								41	-	-	8
Net Cash From Investing Activities	-	-	-	-	-	-	-	(110)	(195)	(600)	(733)
Net Change in Debt								19	111	21	331
Net Change in Common Stock								51	50	398	-
Net Change in Preferred Stock											
Cash Dividends Paid								-	-	-	-
Other	-	-	-	-	-	-	-	-	-	(0)	(0)
Net Cash From Financing Activities	-	-	-	-	-	-	-	70	161	419	331
Effect of Exchange Rate on Cash	-	-	-	-				-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	-	-	(19)	(2)	(2)	26
Cash and Equivalents, Beginning of Year	-	-	-	-	-	-	-	34	14	12	10
Cash and Equivalents, End of Year	-	-	-	-	-	-	-	14	12	10	35

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Jagged Peak Energy (JAG - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	-	-	23	23	61	201
Net Property, Plant and Equipment	-	-	-	-	-	-	-	304	477	1,039	1,530
Other Assets								1	19	3	36
Total Assets	-	-	-	-	-	-	-	328	518	1,103	1,767
Total Current Liabilities								23	56	174	188
Long-term Debt								20	132	155	489
Deferred Income Taxes								-	-	58	124
Other Liabilities and Deferred Credits	-	-	-	-	-	-	-	1	4	17	18
Total Liabilities	-	-	-	-	-	-	-	43	192	404	819
Minority Interests	-	-						-	-	-	-
Common Shares								295	346	2	2
Contributed Surplus (Paid-in Capital)										774	857
Preferred Stock								-	-	-	-
Retained Earnings								(10)	(20)	(76)	89
Other / Comprehensive Income (Loss)								-	-	-	-
Total Shareholders' Equity	-	-	-	-	-	-	-	284	326	699	948
Total Liabilities and Shareholders' Equity	-	-	-	-	-	-	-	328	518	1,103	1,767
Return on Capital Employed (ROCE)								**-2.4%**	**-1.8%**	**-10.1%**	**14.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue								$38.67	$36.69	$43.00	$46.53	$44.50	$44.26
Production Costs								$3.82	$4.16	$3.60	$6.17	$5.20	$5.15
Exploration								$0.00	$0.00	$0.01	$0.00	$0.00	$0.00
DD&A								$25.95	$19.68	$17.92	$17.81	$18.03	$18.35
G&A/Other								$2.57	$2.12	$3.73	$3.13	$3.21	$3.18
Pre-tax Results of Operations								$6.34	$10.73	$17.75	$19.41	$18.05	$17.58
Income Taxes								$2.16	$3.65	$6.03	$5.56	$5.51	$5.38
Results of Operations								$4.19	$7.09	$11.71	$13.85	$12.54	$12.20

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue								$38.67	$36.69	$43.00	$46.53	$44.50	$44.26
Production Costs								$3.82	$4.16	$3.60	$6.17	$5.20	$5.15
Exploration								$0.00	$0.00	$0.01	$0.00	$0.00	$0.00
DD&A								$25.95	$19.68	$17.92	$17.81	$18.03	$18.35
G&A/Other								$2.57	$2.12	$3.73	$3.13	$3.21	$3.18
Pre-tax Results of Operations								$6.34	$10.73	$17.75	$19.41	$18.05	$17.58
Income Taxes								$2.16	$3.65	$6.03	$5.56	$5.51	$5.38
Results of Operations								$4.19	$7.09	$11.71	$13.85	$12.54	$12.20

Source: BMO Capital Markets, Company Reports

Jagged Peak Energy (JAG - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)								1.1	2.6	9.9	21.9	11.5	7.1
Liquids Production (b/d)								2,211	5,192	15,332	30,556	17,026	10,658
Total Production (boe/d)								2,395	5,626	16,976	34,205	18,936	11,841
% Gas Production								8%	8%	10%	11%	10%	10%
% Oil Production								92%	92%	90%	89%	90%	90%
Proven Reserves:													
Gas Reserves (bcf)								6.2	19.5	53.3	80.5	51.1	31.9
Oil Reserves (mmbbls)								12.0	34.4	73.5	105.5	71.1	45.1
Total Proven Reserves (mmboe)								13.0	37.7	82.4	118.9	79.6	50.4
% Gas Reserves								8%	9%	11%	11%	11%	11%
% Oil Reserves								92%	91%	89%	89%	89%	89%
Proven Reserve Life Index								14.9	18.4	13.3	9.5	13.7	18.7
Proven Reserve Additions:													
Gas Additions (bcf)								4.9	14.3	37.3	35.3	86.9	91.8
Oil Additions (mmbbls)								10.5	24.4	44.6	43.1	112.1	122.6
Total Additions (mmboe)								11.3	26.7	50.9	49.0	126.6	137.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions								10.8	25.2	51.8	35.7	112.8	123.5
Acquisitions								0.0	0.5	0.0	0.6	1.1	1.1
Dispositions								-	(0.1)	-	-	(0.1)	(0.1)
Revisions of Estimates								0.6	1.1	(1.0)	12.7	12.9	13.4
Components as % of Total Additions:													
Extensions, Discoveries and Additions								95.1%	94.4%	101.9%	72.8%	89.1%	89.6%
Acquisitions								0.0%	1.7%	0.0%	1.3%	0.9%	0.8%
Dispositions								0.0%	-0.5%	0.0%	0.0%	-0.1%	-0.1%
Revisions of Estimates								4.9%	4.3%	-1.9%	25.9%	10.2%	9.7%
Additions as % of Production:													
Gas								1220.8%	1503.6%	1036.8%	441.1%	692.7%	709.2%
Oil								1302.1%	1285.1%	797.7%	386.8%	601.4%	630.5%
Total								1295.8%	1302.0%	820.8%	392.6%	610.6%	638.4%
Additions as % of Reserves:													
Gas								80.1%	73.3%	70.1%	43.8%	170.1%	288.0%
Oil								87.7%	70.7%	60.7%	40.9%	157.6%	272.1%
Total								87.1%	70.9%	61.8%	41.2%	159.0%	273.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration								$115.5	$158.3	$0.0	$0.0	$158.4	$273.9
Development								$0.9	$1.7	$597.4	$711.0	$1,310.1	$1,311.0
Acquisitions								$11.4	$55.1	$69.1	$29.8	$154.0	$165.4
Dispositions								na	na	na	na	na	na
Total Expenditures								$127.8	$215.1	$666.6	$740.8	$1,622.5	$1,750.3
Expenditures as % of Total:													
Exploration								90.4%	73.6%	0.0%	0.0%	9.8%	15.6%
Development								0.7%	0.8%	89.6%	96.0%	80.7%	74.9%
Acquisitions								9.0%	25.6%	10.4%	4.0%	9.5%	9.5%
Cashflow (US$million)								$26.2	$30.5	$201.9	$408.2	$640.5	$666.7
Cashflow (US$/boe)								$29.97	$14.83	$32.58	$32.69	$30.89	$30.85
Recycle Ratio								2.7x	1.9x	2.5x	2.2x	2.4x	2.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)								$10.27	$6.06	$11.75	$14.69	$11.69	$11.57
Acquisition Costs								na	$118.32	na	$47.34	$140.72	$151.18
All Sources (incl. revisions)								$11.28	$8.01	$13.11	$15.11	$12.80	$12.68
Exploration & Development (excl. revisions)								$10.79	$6.34	$11.53	$19.92	$13.02	$12.83
Acquisition Costs								na	$118.32	na	$47.34	$140.72	$151.18
All Sources (excl. revisions)								$11.86	$8.37	$12.86	$20.39	$14.25	$14.04

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Jagged Peak Energy (JAG - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	-	3.82	4.16	3.60	6.17	5.20	5.15
Exploration Expense	-	-	-	-	-	-	-	-	-	0.01	0.00	0.00	0.00
G&A/Other	-	-	-	-	-	-	-	2.57	2.12	3.73	3.13	3.21	3.18
F&D Costs (1-Year)	-	-	-	-	-	-	-	11.28	8.01	13.11	15.11	12.80	11.88
Return on Capital	-	-	-	-	-	-	-	10.85	9.77	11.14	8.95	11.27	8.36
Income Taxes	-	-	-	-	-	-	-	5.59	5.04	5.74	3.59	5.36	2.96
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**34.10**	**29.10**	**37.32**	**36.96**	**37.85**	**31.52**
Quality Differential	-	-	-	-	-	-	-	11.98	6.12	8.24	19.32	11.23	9.13
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**46.07**	**35.22**	**45.56**	**56.28**	**49.08**	**40.65**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	-	4.02	4.38	3.85	6.80	5.66	5.59
Exploration Expense	-	-	-	-	-	-	-	-	-	0.01	0.00	0.00	0.00
G&A/Other	-	-	-	-	-	-	-	2.70	2.23	3.99	3.45	3.49	3.46
F&D Costs (1-Year)	-	-	-	-	-	-	-	11.84	8.50	14.28	16.87	14.00	13.81
Return on Capital	-	-	-	-	-	-	-	11.37	10.29	12.21	10.01	12.23	17.12
Income Taxes	-	-	-	-	-	-	-	5.86	5.30	6.29	4.02	5.81	13.21
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**35.79**	**30.70**	**40.62**	**41.16**	**41.19**	**53.19**
Quality Differential	-	-	-	-	-	-	-	12.61	6.44	8.81	21.29	12.18	16.39
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**48.40**	**37.14**	**49.44**	**62.45**	**53.37**	**69.58**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	-	4.02	4.38	3.85	6.80	5.66	5.59
Exploration Expense	-	-	-	-	-	-	-	-	-	0.01	0.00	0.00	0.00
G&A/Other	-	-	-	-	-	-	-	2.70	2.23	3.99	3.45	3.49	3.46
F&D Costs (1-Year)	-	-	-	-	-	-	-	19.82	21.01	24.77	17.86	20.63	27.82
Return on Capital	-	-	-	-	-	-	-	19.06	25.40	20.88	10.60	18.05	34.48
Income Taxes	-	-	-	-	-	-	-	9.82	13.09	10.75	4.26	8.58	26.60
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**55.42**	**66.11**	**64.24**	**42.98**	**56.41**	**97.95**
Quality Differential	-	-	-	-	-	-	-	12.61	6.44	8.81	21.29	12.18	16.39
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**68.03**	**72.55**	**73.05**	**64.26**	**68.59**	**114.34**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

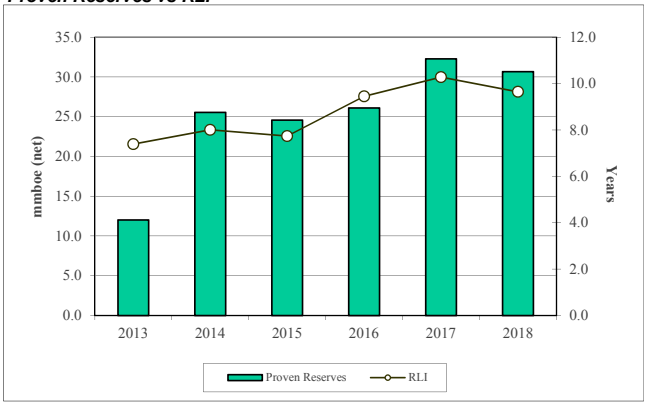
Journey Energy Inc. (JOY - TSX)

US$, net

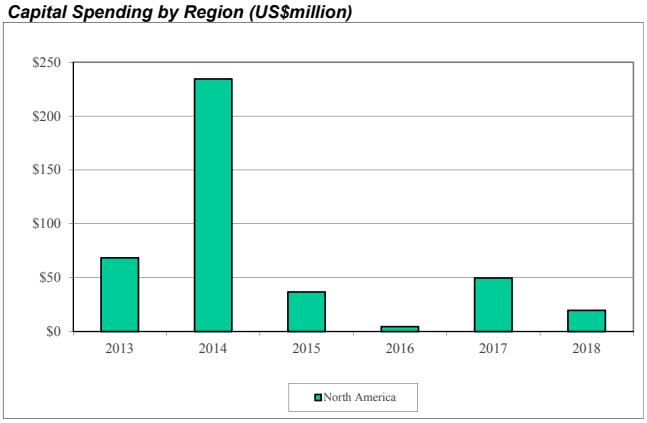
- Journey Energy reported results of operations of $0.31/boe in 2018 compared to $0.24/boe last year.
- Drill-bit F&D costs came in at $12.82/boe versus $20.98/boe last year. On a realized oil:gas ratio basis, adjusted F&D costs were $11.62/boe compared to $27.35/boe last year, while costs for PD reserves were $20.03/boe compared to $13.25/boe one year ago.
- Journey's operations imply a required Brent breakeven oil price of $82.39/boe based on drill-bit costs, while its PD costs suggest a breakeven oil price of $97.56/boe.
- The company reported a loss on capital of 9.3% compared to a normalized gain of 6.7% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

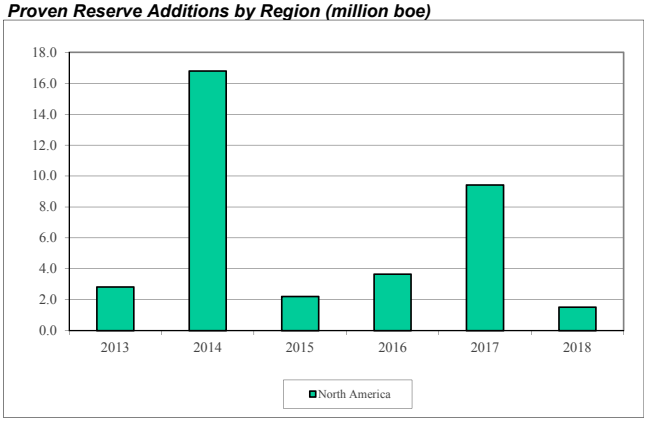
Proven Reserves vs RLI



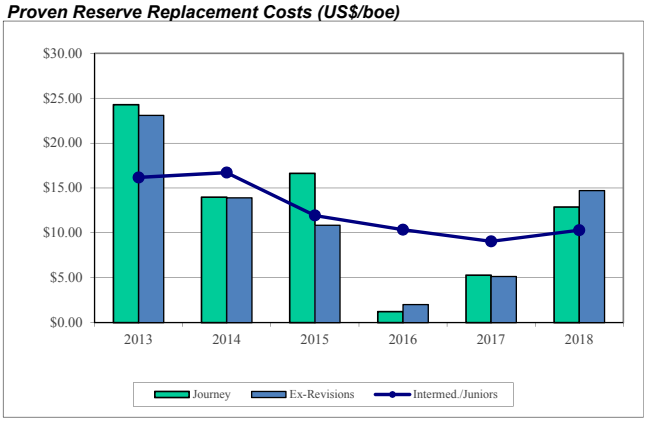
Capital Spending by Region (US$million)



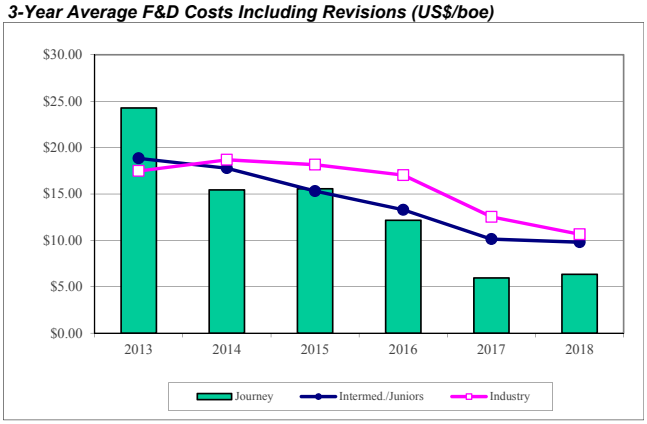
Proven Reserve Additions by Region (million boe)



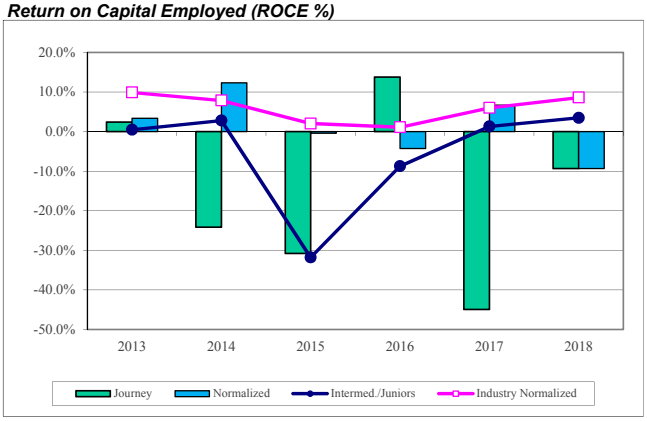
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



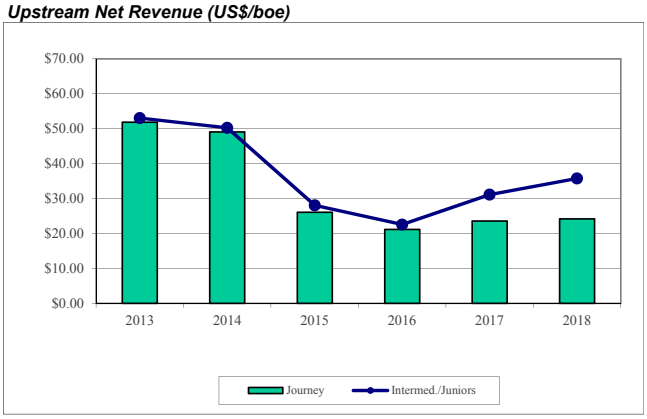
Source: BMO Capital Markets, Company Reports

Journey Energy Inc. (JOY - TSX)

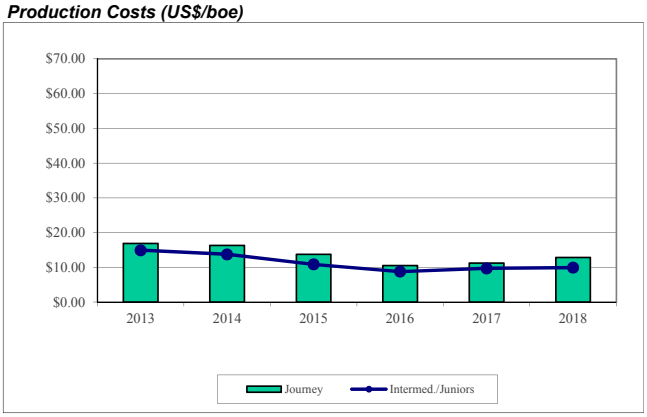
US$/boe, net

North America

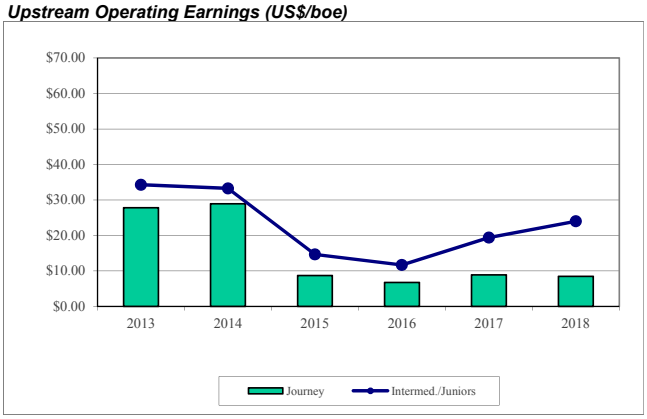
Upstream Net Revenue (US$/boe)



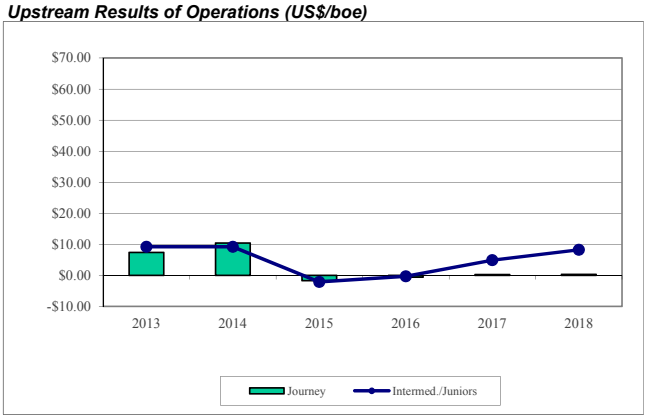
Production Costs (US$/boe)



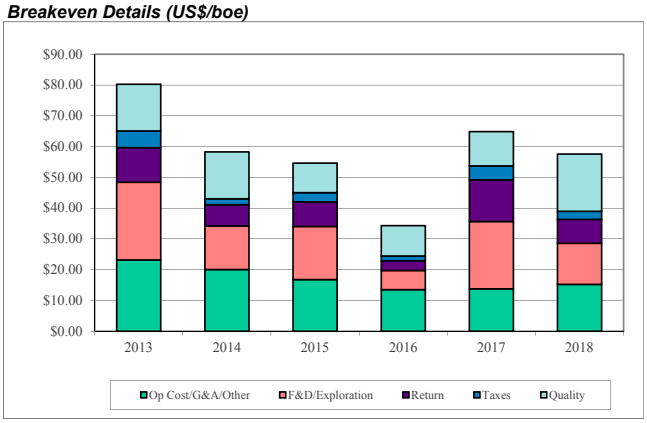
Upstream Operating Earnings (US$/boe)



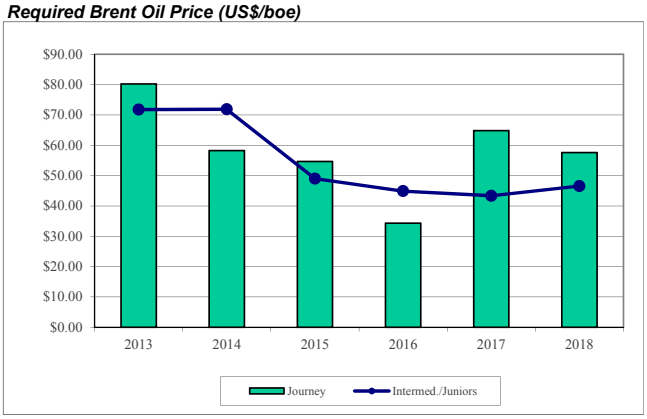
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Journey Energy Inc. (JOY - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	84	157	83	58	74	77
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	-	-	-	-	84	157	83	58	74	77
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	-	-	27	52	44	29	35	41
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	2	1	2	2	3	2
General and Administrative	-	-	-	-	-	10	12	10	8	8	8
Depreciation, Depletion and Amortization	-	-	-	-	-	27	50	35	21	27	26
Interest, net	-	-	-	-	-	4	10	5	6	8	10
Other	-	-	-	-	-	8	137	107	(68)	23	5
Earnings Before Income Tax	-	-	-	-	-	6	(104)	(120)	59	(30)	(14)
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	-	-	-	-	-	2	(23)	(33)	19	73	15
Total Income Taxes	-	-	-	-	-	2	(23)	(33)	19	73	15
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	4	(82)	(87)	40	(103)	(29)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	4	(82)	(87)	40	(103)	(29)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	4	(82)	(87)	40	(103)	(29)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	4	(82)	(87)	40	(103)	(29)
Charges and Credits Not Impacting Cash	-	-	-	-	-	35	171	118	(18)	133	42
Other	-	-	-	-	-	5	(6)	8	(1)	(7)	1
Cash Flow From Operations	-	-	-	-	-	44	83	39	21	24	14
Change in Working Capital / Other	-	-	-	-	-	4	(0)	5	(8)	5	(2)
Net Cash From Operating Activities	-	-	-	-	-	49	83	43	13	28	12
Total Capital Expenditures	-	-	-	-	-	(54)	(84)	(33)	(12)	(25)	(22)
Acquisitions, net	-	-	-	-	-	(16)	(152)	(5)	7	(21)	1
Other	-	-	-	-	-	(0)	1	(4)	(0)	(1)	(3)
Net Cash From Investing Activities	-	-	-	-	-	(70)	(235)	(42)	(6)	(47)	(23)
Net Change in Debt	-	-	-	-	-	24	9	3	(6)	14	22
Net Change in Common Stock	-	-	-	-	-	-	151	(2)	-	11	(16)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	0	(10)	-	-	-	-
Other	-	-	-	-	-	-	2	-	(0)	(0)	(0)
Net Cash From Financing Activities	-	-	-	-	-	25	152	1	(6)	24	5
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	4	(1)	2	2	5	(6)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	(6)	(3)	(3)	(1)	1	6
Cash and Equivalents, End of Year	-	-	-	-	-	(3)	(3)	(1)	1	6	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Journey Energy Inc. (JOY - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	22	34	16	13	22	9
Net Property, Plant and Equipment	-	-	-	-	-	258	377	219	257	275	274
Other Assets	-	-	-	-	-	80	100	119	96	25	10
Total Assets	-	-	-	-	-	360	510	354	366	322	294
Total Current Liabilities	-	-	-	-	-	37	45	27	66	81	16
Long-term Debt	-	-	-	-	-	68	72	70	21	22	96
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Other Liabilities and Deferred Credits	-	-	-	-	-	56	144	130	113	134	138
Total Liabilities	-	-	-	-	-	161	262	227	200	237	251
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	-	-	643	339	288	278	298	225
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	6	7	17	19	25	83
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	-	(449)	(97)	(178)	(132)	(238)	(267)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	2	-	1
Total Shareholders' Equity	-	-	-	-	-	200	249	127	166	85	43
Total Liabilities and Shareholders' Equity	-	-	-	-	-	360	510	354	366	322	294
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**-24.2%**	**-30.8%**	**13.8%**	**-44.9%**	**-9.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue						$51.90	$49.11	$26.11	$21.16	$23.58	$24.20	$23.06	$29.07
Production Costs						$16.86	$16.29	$13.76	$10.50	$11.25	$12.86	$11.59	$13.01
Exploration						$0.95	$0.16	$0.64	$0.88	$0.91	$0.50	$0.76	$0.61
DD&A						$16.85	$15.64	$11.09	$7.66	$8.56	$8.06	$8.11	$10.28
G&A / Other						$6.31	$3.76	$3.02	$3.02	$2.53	$2.36	$2.62	$2.94
Pre-tax Results of Operations						$10.93	$13.26	-$2.39	-$0.91	$0.32	$0.41	-$0.02	$2.23
Income Taxes						$3.57	$2.88	-$0.65	-$0.30	$0.08	$0.10	-$0.01	$0.59
Results of Operations						$7.36	$10.37	-$1.74	-$0.62	$0.24	$0.31	-$0.02	$1.64

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Journey Energy Inc. (JOY - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)						12.9	24.9	24.6	21.4	28.3	28.2	26.0	25.5
Liquids Production (b/d)						2,302	4,586	4,598	3,996	3,889	4,005	3,963	4,214.6
Total Production (boe/d)						4,452	8,741	8,703	7,566	8,602	8,709	8,293	8,464.2
% Gas Production						48%	48%	47%	47%	55%	54%	52%	50%
% Oil Production						52%	52%	53%	53%	45%	46%	48%	50%
Proven Reserves:													
Closing Gas Reserves (bcf)						33.7	77.3	67.4	75.4	107.5	99.5	94.1	85.4
Closing Oil Reserves (mmbbls)						6.4	12.7	13.3	13.5	14.4	14.1	14.0	13.6
Closing Total Proven Reserves (mmboe)						12.0	25.5	24.6	26.1	32.3	30.7	29.7	27.8
% Gas Reserves						47%	50%	46%	48%	56%	54%	53%	51%
% Oil Reserves						53%	50%	54%	52%	44%	46%	47%	na
Proven Reserve Life Index						7.4	8.0	7.7	9.5	10.3	9.6	9.8	9.0
Proven Reserve Additions:													
Gas Additions (bcf)						6.6	53.7	-0.7	14.9	42.3	1.4	19.5	22.3
Oil Additions (mmbbls)						1.7	7.9	2.3	1.2	2.4	1.3	1.6	3.0
Total Additions (mmboe)						2.8	16.8	2.2	3.7	9.4	1.5	4.9	6.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions						1.4	4.7	3.1	2.2	1.1	1.8	5.1	12.9
Net Acquisitions						1.6	12.2	0.3	0.1	8.5	-0.5	8.1	20.5
Revisions of Estimates						-0.1	-0.1	-1.2	1.4	-0.3	0.2	1.4	0.1
Components as % of Total Additions:													
Extensions, Discoveries and Additions						48.2%	28.0%	140.6%	59.1%	12.2%	120.7%	105.7%	192.7%
Net Acquisitions						56.9%	72.5%	12.6%	1.7%	90.7%	-33.2%	166.4%	305.9%
Revisions of Estimates						-5.1%	-0.5%	-53.2%	39.2%	-2.8%	12.4%	27.9%	1.4%
Additions as % of Production:													
Gas						141.1%	589.8%	-7.6%	190.0%	409.6%	13.6%	68.6%	47.9%
Oil						203.9%	469.0%	138.2%	80.8%	166.9%	88.1%	37.1%	39.0%
Total						173.6%	526.4%	69.4%	132.3%	299.9%	47.8%	53.6%	43.5%
Additions as % of Reserves:													
Gas						19.7%	69.5%	-1.0%	19.7%	39.3%	1.4%	20.7%	26.1%
Oil						26.8%	62.0%	17.4%	8.7%	16.5%	9.1%	11.5%	22.1%
Total						23.5%	65.8%	9.0%	14.0%	29.2%	5.0%	16.4%	24.1%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic						$1.4	$9.0	$1.8	$0.3	$1.6	$3.2	$5.2	$16.1
Exploration & Development						$51.6	$73.7	$29.7	$11.2	$22.4	$20.3	$53.9	$157.3
Net Acquisitions						$15.5	$151.8	$5.1	-$7.1	$25.7	-$4.0	$14.7	$171.6
Total Expenditures						$68.5	$234.5	$36.7	$4.5	$49.7	$19.6	$73.7	$344.9
Expenditures as % of Total:													
Land & Seismic						2.1%	3.9%	5.0%	6.9%	3.3%	16.5%	7.0%	4.7%
Exploration & Development						75.3%	31.4%	81.0%	251.1%	45.0%	103.8%	73.1%	45.6%
Net Acquisitions						22.6%	64.7%	14.0%	-158.0%	51.7%	-20.2%	19.9%	49.7%
Cashflow (US$million)						$44.5	$83.2	$38.8	$20.6	$23.5	$14.0	$58.1	$180.1
Cashflow (US$/boe)						$27.36	$26.07	$12.21	$7.47	$7.49	$4.39	$6.40	na
Recycle Ratio						1.1x	1.9x	0.7x	6.1x	1.4x	0.3x	1.3x	na

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)						$43.64	$17.91	$16.36	$3.21	$27.35	$11.62	$9.10	$13.29
Net Acquisition Costs						$9.63	$12.47	$18.43	-$114.25	$3.01	$7.85	$1.81	$8.35
All Sources (incl. revisions)						$24.27	$13.97	$16.63	$1.22	$5.28	$12.88	$5.05	$10.27
Exploration & Development (excl. revisions)						$39.00	$17.58	$10.17	$5.34	$20.98	$12.82	$11.49	$13.39
Net Acquisition Costs						$9.63	$12.47	$18.43	-$114.25	$3.01	$7.85	$1.81	$8.35
All Sources (excl. revisions)						$23.09	$13.89	$10.85	$2.01	$5.13	$14.70	$5.57	$10.30

Source: BMO Capital Markets, Company Reports

Journey Energy Inc. (JOY - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	-	16.86	16.29	13.76	10.50	11.25	12.86	11.59	13.01
Exploration Expense	-	-	-	-	-	0.95	0.16	0.64	0.88	0.91	0.50	0.76	0.61
G&A/Other	-	-	-	-	-	6.31	3.76	3.02	3.02	2.53	2.36	2.62	2.94
F&D Costs (1-Year)	-	-	-	-	-	24.27	13.97	16.63	5.34	20.98	12.88	13.06	13.95
Return on Capital	-	-	-	-	-	11.25	6.94	7.97	3.16	13.54	7.77	8.13	7.85
Income Taxes	-	-	-	-	-	5.46	1.93	3.00	1.53	4.51	2.59	2.71	2.81
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**65.10**	**43.06**	**45.01**	**24.43**	**53.73**	**38.96**	**38.87**	**41.17**
Quality Differential	-	-	-	-	-	15.14	15.19	9.63	9.90	11.13	18.64	14.88	12.90
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**80.24**	**58.25**	**54.64**	**34.34**	**64.86**	**57.60**	**53.75**	**54.07**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	-	26.30	23.97	19.89	15.60	19.45	22.98	19.29	20.46
Exploration Expense	-	-	-	-	-	1.48	0.24	0.92	1.31	1.57	0.89	1.26	0.96
G&A/Other	-	-	-	-	-	9.84	5.52	4.36	4.49	4.38	4.22	4.36	4.62
F&D Costs (1-Year)	-	-	-	-	-	34.27	21.78	16.08	4.88	27.35	11.62	14.62	14.99
Return on Capital	-	-	-	-	-	15.99	10.59	7.81	2.86	17.50	7.02	9.00	8.35
Income Taxes	-	-	-	-	-	7.76	2.94	2.94	1.39	5.83	2.34	3.00	2.99
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**95.65**	**65.05**	**52.01**	**30.53**	**76.10**	**49.08**	**51.54**	**52.36**
Quality Differential	-	-	-	-	-	23.61	22.35	13.91	14.71	19.24	33.31	26.27	20.70
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**119.25**	**87.39**	**65.92**	**45.23**	**95.34**	**82.39**	**77.81**	**73.06**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	-	26.30	23.97	19.89	15.60	19.45	22.98	19.29	20.46
Exploration Expense	-	-	-	-	-	1.48	0.24	0.92	1.31	1.57	0.89	1.26	0.96
G&A/Other	-	-	-	-	-	9.84	5.52	4.36	4.49	4.38	4.22	4.36	4.62
F&D Costs (1-Year)	-	-	-	-	-	10.99	24.95	19.52	5.22	13.25	20.03	14.75	16.59
Return on Capital	-	-	-	-	-	5.18	12.13	9.57	3.06	8.42	12.10	9.07	9.20
Income Taxes	-	-	-	-	-	2.51	3.37	3.61	1.48	2.81	4.03	3.02	3.29
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**56.31**	**70.19**	**57.86**	**31.16**	**49.88**	**64.26**	**51.76**	**55.12**
Quality Differential	-	-	-	-	-	23.61	22.35	13.91	14.71	19.24	33.31	26.27	20.70
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**79.91**	**92.53**	**71.77**	**45.87**	**69.12**	**97.56**	**78.03**	**75.82**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

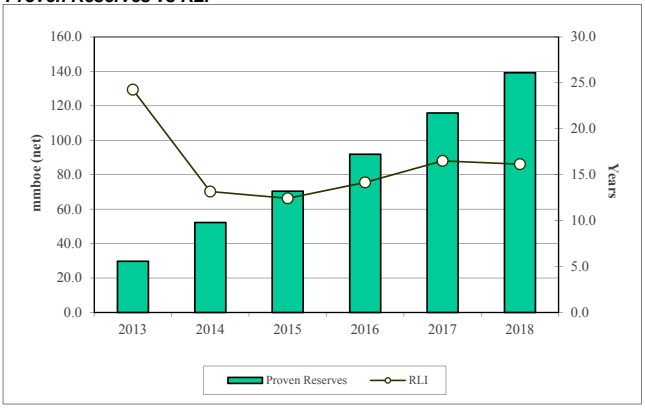
Kelt Exploration Ltd. (KEL - TSX)

US$/boe, net

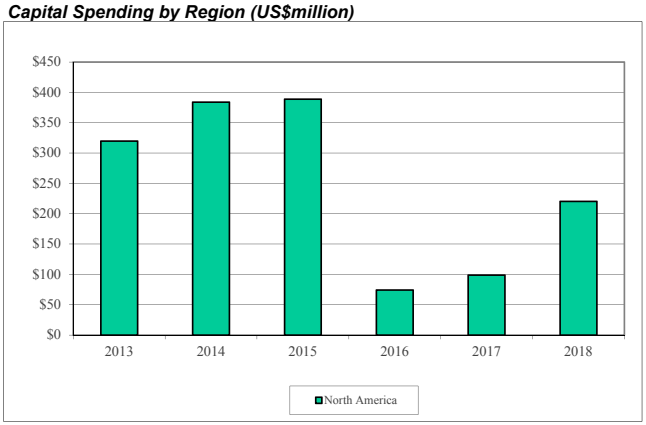
- Kelt reported results from operations of $5.11/boe in 2018 versus a loss of $0.78/boe last year.
- One-year F&D costs increased slightly to $7.09/boe compared to $3.48/boe in 2017. On a realized oil:gas ratio basis, F&D costs were $11.65/boe compared to $4.62/boe, while costs for PD reserves were $22.67/boe versus $19.41/boe last year.
- Kelt's 2018 operations imply a required Brent breakeven oil price of $59.11/boe, while PD costs suggest a breakeven of $84.21/boe.
- The company reported ROCE of 1.3% in 2018 versus a loss of 1.0% in 2017.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

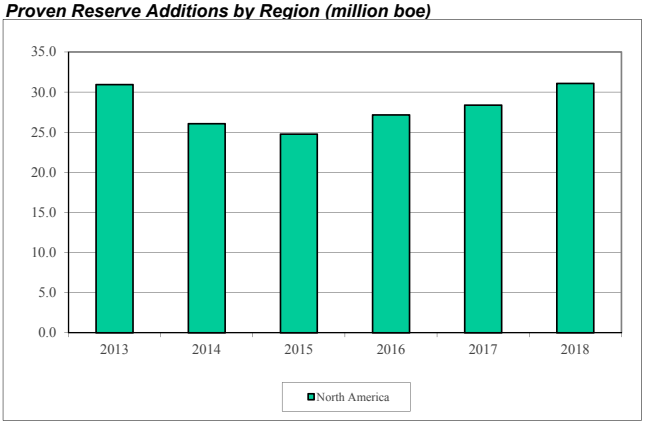
Proven Reserves vs RLI



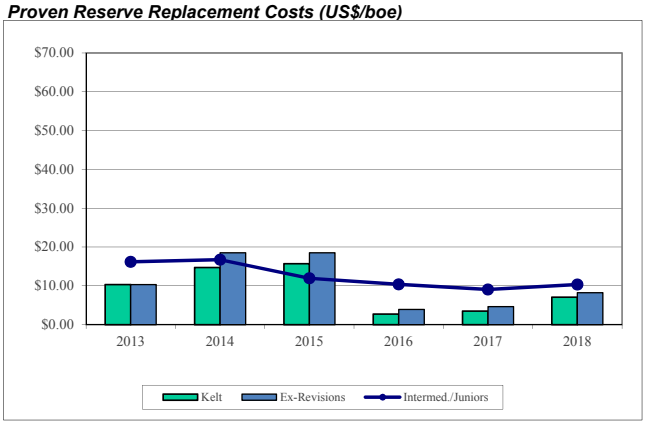
Capital Spending by Region (US$million)



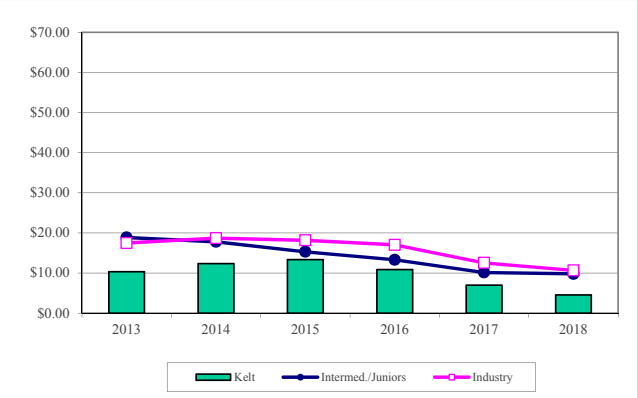
Proven Reserve Additions by Region (million boe)



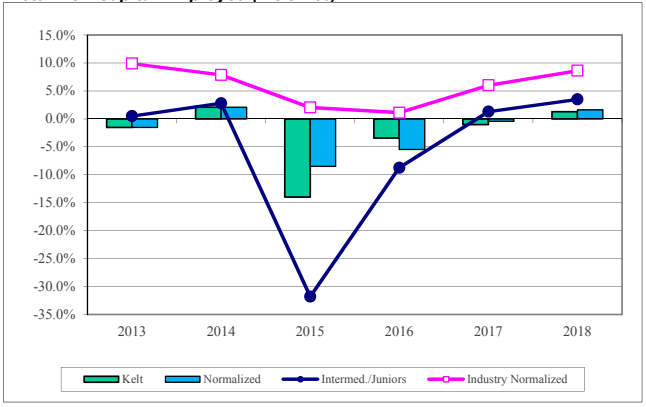
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

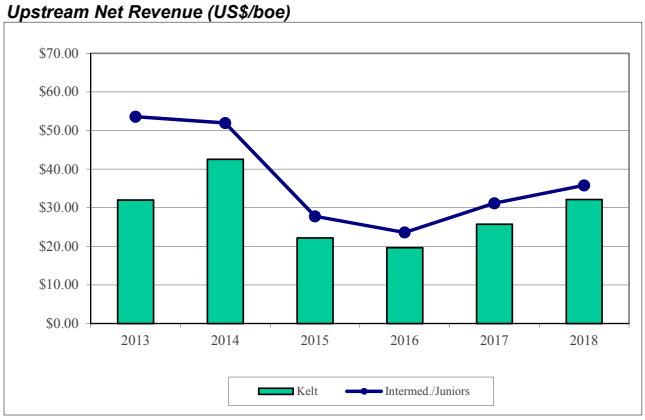
See pages F1 to F4 for analyst coverage.

Kelt Exploration Ltd. (KEL - TSX)

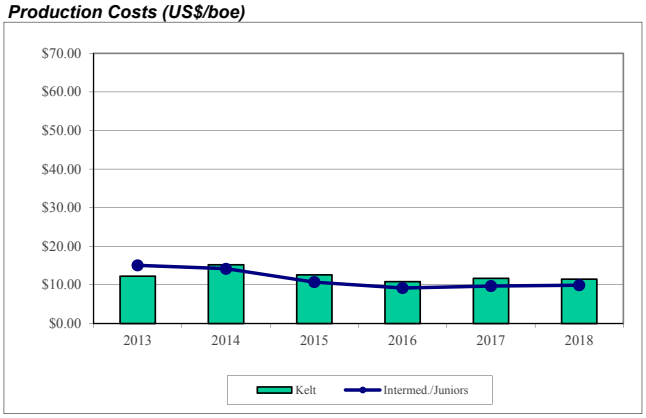
US$/boe, net

North America

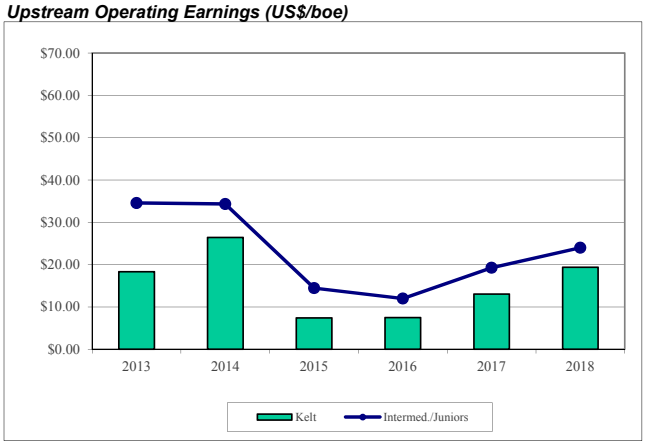
Upstream Net Revenue (US$/boe)



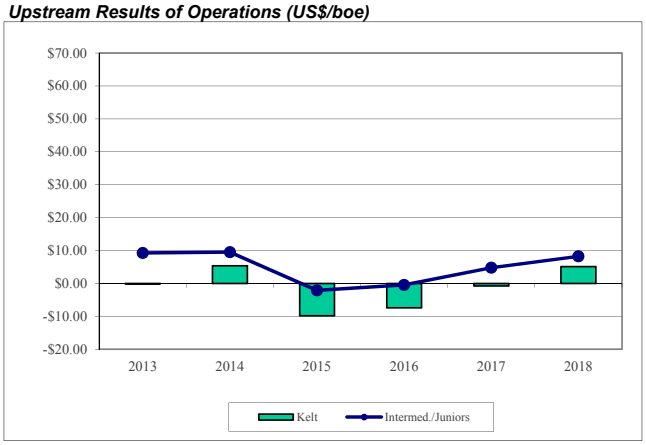
Production Costs (US$/boe)



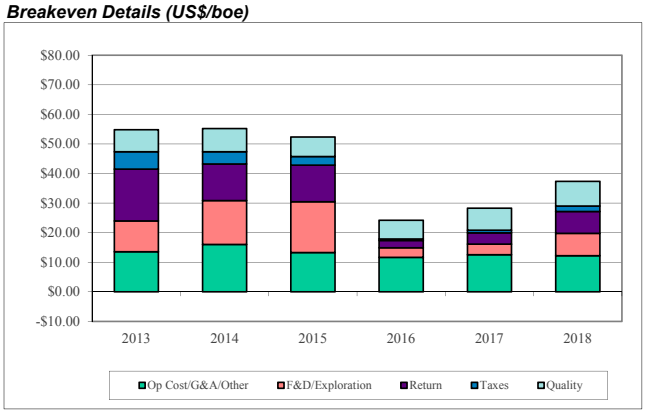
Upstream Operating Earnings (US$/boe)



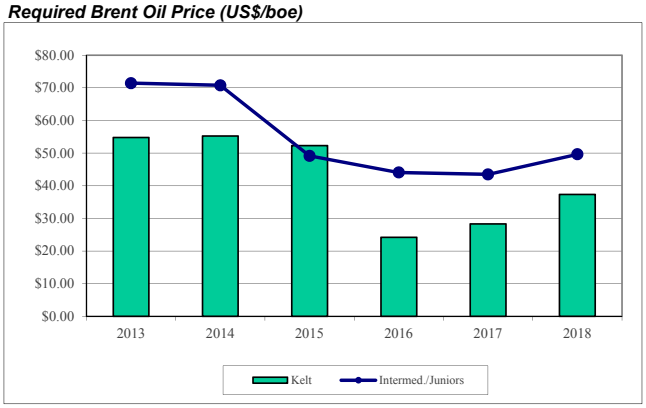
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Kelt Exploration Ltd. (KEL - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Gross Upstream Revenue	-	-	-	-	-	45.3	194.4	140.4	139.5	198.6	300.5
Royalties (If Reported)	-	-	-	-	-	(6.1)	(25.8)	(14.9)	(12.0)	(18.2)	(23.7)
Upstream Revenue, net of Royalties	-	-	-	-	-	39	169	126	127	180	277
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	-	-	-	-	39	169	126	127	180	277
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	2	2
Production and Transportation Expenses	-	-	-	-	-	15	60	71	70	82	99
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	0	0	8	3	1	4
General and Administrative	-	-	-	-	-	2	3	4	5	6	6
Depreciation, Depletion and Amortization	-	-	-	-	-	23	76	111	106	98	112
Interest, net	-	-	-	-	-	(1)	1	7	12	11	13
Other	-	-	-	-	-	4	3	60	(24)	0	22
Earnings Before Income Tax	-	-	-	-	-	(4)	24	(135)	(45)	(20)	18
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	-	-	-	-	-	1	14	(26)	(7)	(2)	11
Total Income Taxes	-	-	-	-	-	1	14	(26)	(7)	(2)	11
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	(5)	10	(110)	(38)	(18)	6
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	(5)	10	(110)	(38)	(18)	6
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	(5)	10	(110)	(38)	(18)	6

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	(5)	10	(110)	(38)	(18)	6
Charges and Credits Not Impacting Cash	-	-	-	-	-	24	91	143	102	97	128
Other	-	-	-	-	-	4	4	8	(21)	3	10
Cash Flow From Operations	-	-	-	-	-	23	104	42	43	82	143
Change in Working Capital / Other	-	-	-	-	-	3	(3)	8	(9)	7	0
Net Cash From Operating Activities	-	-	-	-	-	26	102	49	34	89	144
Total Capital Expenditures	-	-	-	-	-	(94)	(228)	(130)	(65)	(188)	(226)
Acquisitions, net	-	-	-	-	-	(203)	(99)	(88)	(10)	89	6
Other	-	-	-	-	-	3	25	(26)	1	10	(9)
Net Cash From Investing Activities	-	-	-	-	-	(295)	(302)	(245)	(73)	(88)	(230)
Net Change in Debt	-	-	-	-	-	-	43	102	16	(16)	60
Net Change in Common Stock	-	-	-	-	-	312	135	97	24	16	18
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	(12)	(5)	(4)	0	2	10
Net Cash From Financing Activities	-	-	-	-	-	299	172	195	39	2	88
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	(0)	0
Net Increase/(Decrease) in Cash	-	-	-	-	-	31	(28)	(0)	(0)	2	2
Cash and Equivalents, Beginning of Year	-	-	-	-	-	-	29	1	1	0	3
Cash and Equivalents, End of Year	-	-	-	-	-	31	1	1	0	3	5

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Kelt Exploration Ltd. (KEL - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	64	37	24	24	35	44
Net Property, Plant and Equipment	-	-	-	-	-	405	770	978	925	854	961
Other Assets	-	-	-	-	-	2	16	-	-	95	93
Total Assets	-	-	-	-	-	471	823	1,002	949	984	1,099
Total Current Liabilities	-	-	-	-	-	44	89	51	44	70	66
Long-term Debt	-	-	-	-	-	-	43	139	138	138	191
Deferred Income Taxes	-	-	-	-	-	-	45	37	32	30	41
Other Liabilities and Deferred Credits	-	-	-	-	-	46	85	111	98	104	111
Total Liabilities	-	-	-	-	-	90	262	338	312	342	409
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	-	-	437	595	800	798	832	864
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	6	13	14	13	16	15
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	-	(5)	5	(105)	(140)	(161)	(155)
Other / Comprehensive Income (Loss)	-	-	-	-	-	(56)	(52)	(45)	(34)	(44)	(35)
Total Shareholders' Equity	-	-	-	-	-	382	561	664	637	642	690
Total Liabilities and Shareholders' Equity	-	-	-	-	-	471	823	1,002	949	984	1,099
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**-1.5%**	**2.1%**	**-14.0%**	**-3.4%**	**-1.0%**	**1.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	-	-	$31.98	$42.53	$22.15	$19.65	$25.72	$32.11	$26.43	$27.68
Production Costs	-	-	-	-	-	$12.25	$15.21	$12.59	$10.85	$11.70	$11.50	$11.37	$12.07
Exploration	-	-	-	-	-	$0.09	$0.09	$1.45	$0.50	$0.14	$0.47	$0.37	$0.53
DD&A	-	-	-	-	-	$18.50	$19.28	$19.50	$16.31	$14.01	$13.01	$14.30	$15.85
G&A / Other	-	-	-	-	-	$1.32	$0.83	$0.72	$0.81	$0.83	$0.75	$0.79	$0.78
Pre-tax Results of Operations	-	-	-	-	-	-$0.18	$7.13	-$12.11	-$8.82	-$0.98	$6.38	-$0.41	-$1.56
Income Taxes	-	-	-	-	-	-$0.04	$1.78	-$2.30	-$1.41	-$0.20	$1.28	-$0.08	-$0.31
Results of Operations	-	-	-	-	-	-$0.13	$5.35	-$9.81	-$7.41	-$0.78	$5.11	-$0.33	-$1.24

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Kelt Exploration Ltd. (KEL - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)						16.2	43.3	61.2	68.4	68.1	83.0	73.1	64.8
Liquids Production (b/d)						662	3,655	5,331	6,375	7,876	9,786	8,012	6,604
Total Production (boe/d)						3,356	10,866	15,527	17,772	19,223	23,617	20,204	17,401
% Gas Production						80%	66%	66%	64%	59%	59%	60%	62%
% Oil Production						20%	34%	34%	36%	41%	41%	40%	38%
Proven Reserves:													
Closing Gas Reserves (bcf)						132.8	205.8	282.8	365.0	413.7	512.5	430.4	355.9
Closing Oil Reserves (mmbbls)						7.6	17.9	23.3	31.0	46.9	53.8	43.9	34.6
Closing Total Proven Reserves (mmboe)						29.7	52.2	70.4	91.8	115.8	139.2	115.6	93.9
% Gas Reserves						74%	66%	67%	66%	60%	61%	62%	63%
% Oil Reserves						26%	34%	33%	34%	40%	39%	38%	37%
Proven Reserve Life Index						24.3	13.2	12.4	14.1	16.5	16.1	15.6	14.5
Proven Reserve Additions:													
Gas Additions (bcf)						138.7	88.0	98.6	106.5	65.8	120.8	293.1	479.7
Oil Additions (mmbbls)						7.8	11.4	8.3	9.4	17.4	11.0	37.8	57.5
Total Additions (mmboe)						30.9	26.1	24.8	27.2	28.4	31.1	86.6	137.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions						5.3	11.7	3.2	18.2	28.3	27.4	73.9	88.8
Net Acquisitions						25.6	9.0	17.7	0.9	(6.9)	(0.6)	-6.7	20.0
Revisions of Estimates						-	5.3	3.8	8.1	7.1	4.3	19.4	28.6
Components as % of Total Additions:													
Extensions, Discoveries and Additions						17.3%	45.1%	13.1%	66.9%	99.6%	88.2%	85.3%	64.6%
Net Acquisitions						82.7%	34.4%	71.6%	3.3%	-24.5%	-1.9%	-7.7%	14.6%
Revisions of Estimates						0.0%	20.5%	15.3%	29.9%	24.8%	13.7%	22.4%	20.8%
Additions as % of Production:													
Gas						2351.0%	557.3%	441.6%	426.7%	264.8%	398.8%	365.9%	405.8%
Oil						3238.3%	853.9%	427.9%	404.3%	605.7%	306.7%	430.5%	477.0%
Total						2525.9%	657.1%	436.9%	418.6%	404.5%	360.6%	391.6%	432.8%
Additions as % of Reserves:													
Gas						104.4%	42.8%	34.9%	29.2%	15.9%	23.6%	68.1%	134.8%
Oil						103.2%	63.6%	35.7%	30.3%	37.2%	20.4%	86.1%	166.3%
Total						104.1%	49.9%	35.2%	29.6%	24.5%	22.3%	74.9%	146.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic						$15.5	$15.0	$7.6	$7.4	$8.6	$4.3	$20.2	$42.8
Exploration & Development						$100.7	$212.6	$122.9	$57.3	$179.4	$221.6	$458.4	$793.8
Net Acquisitions						$203.4	$156.4	$258.3	$9.5	-$89.3	-$5.6	-$85.3	$329.3
Total Expenditures						$319.7	$383.9	$388.8	$74.2	$98.7	$220.4	$393.3	$1,166.0
Expenditures as % of Total:													
Land & Seismic						4.9%	3.9%	2.0%	9.9%	8.7%	1.9%	5.1%	3.7%
Exploration & Development						31.5%	55.4%	31.6%	77.2%	181.8%	100.6%	116.6%	68.1%
Net Acquisitions						63.6%	40.7%	66.4%	12.8%	-90.5%	-2.5%	-21.7%	28.2%
Cashflow (US$million)						$23.0	$104.4	$41.6	$43.3	$82.1	$143.4	$268.8	$414.8
Cashflow (US$/boe)						$18.76	$26.32	$7.34	$6.67	$11.70	$16.64	$12.15	$13.06
Recycle Ratio						1.8x	1.8x	0.5x	2.4x	3.4x	2.3x	2.7x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)						$21.76	$13.31	$18.56	$2.46	$5.32	$7.13	$5.13	$7.13
Net Acquisition Costs						$7.95	$17.44	$14.57	$10.78	$12.86	$9.38	$12.83	$16.43
All Sources (incl. revisions)						$10.33	$14.73	$15.70	$2.73	$3.48	$7.09	$4.54	$8.48
Exploration & Development (excl. revisions)						$21.76	$19.37	$40.26	$3.56	$6.65	$8.24	$6.48	$9.42
Net Acquisition Costs						$7.95	$17.44	$14.57	$10.78	$12.86	$9.38	$12.83	$16.43
All Sources (excl. revisions)						$10.33	$18.53	$18.54	$3.90	$4.63	$8.21	$5.85	$10.71

Source: BMO Capital Markets, Company Reports

Kelt Exploration Ltd. (KEL - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	12.25	15.21	12.59	10.85	11.70	11.50	11.37	12.07
Exploration Expense	-	-	-	-	-	0.09	0.09	1.45	0.50	0.14	0.47	0.37	0.53
G&A/Other	-	-	-	-	-	1.32	0.83	0.72	0.81	0.83	0.75	0.79	0.78
F&D Costs (1-Year)	-	-	-	-	-	10.33	14.73	15.70	2.73	3.48	7.09	4.54	8.48
Return on Capital	-	-	-	-	-	17.54	12.37	12.38	2.49	3.76	7.39	4.61	7.93
Income Taxes	-	-	-	-	-	5.85	4.12	2.90	0.47	0.94	1.85	1.06	1.98
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**47.37**	**47.36**	**45.74**	**17.85**	**20.86**	**29.04**	**22.74**	**31.77**
Quality Differential	-	-	-	-	-	7.43	7.87	6.59	6.36	7.43	8.32	7.37	7.32
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**54.80**	**55.23**	**52.33**	**24.22**	**28.29**	**37.35**	**30.11**	**39.09**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	29.09	26.60	21.42	17.10	18.82	17.80	17.91	19.51
Exploration Expense	-	-	-	-	-	0.21	0.15	2.46	0.78	0.23	0.72	0.59	0.85
G&A/Other	-	-	-	-	-	3.13	1.45	1.22	1.28	1.34	1.16	1.25	1.27
F&D Costs (1-Year)	-	-	-	-	-	22.40	23.13	26.92	4.36	4.62	11.65	6.86	13.20
Return on Capital	-	-	-	-	-	42.22	19.61	20.96	3.89	4.92	11.93	6.84	12.17
Income Taxes	-	-	-	-	-	14.07	6.54	4.91	0.74	1.23	2.98	1.57	3.04
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**111.12**	**77.48**	**77.90**	**28.16**	**31.16**	**46.24**	**35.02**	**50.04**
Quality Differential	-	-	-	-	-	17.66	13.76	11.22	10.03	11.95	12.88	11.62	11.97
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**128.78**	**91.24**	**89.12**	**38.19**	**43.11**	**59.11**	**46.64**	**62.00**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	29.09	26.60	21.42	17.10	18.82	17.80	17.91	19.51
Exploration Expense	-	-	-	-	-	0.21	0.15	2.46	0.78	0.23	0.72	0.59	0.85
G&A/Other	-	-	-	-	-	3.13	1.45	1.22	1.28	1.34	1.16	1.25	1.27
F&D Costs (1-Year)	-	-	-	-	-	38.61	50.49	61.07	17.58	19.41	22.67	20.43	34.24
Return on Capital	-	-	-	-	-	74.70	42.79	47.52	15.69	20.86	23.19	20.35	31.61
Income Taxes	-	-	-	-	-	24.90	14.26	11.13	2.99	5.22	5.80	4.67	7.90
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**170.64**	**135.74**	**144.83**	**55.43**	**65.88**	**71.34**	**65.20**	**95.39**
Quality Differential	-	-	-	-	-	17.66	13.76	11.22	10.03	11.95	12.88	11.62	11.97
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**188.30**	**149.51**	**156.05**	**65.46**	**77.83**	**84.21**	**76.82**	**107.35**

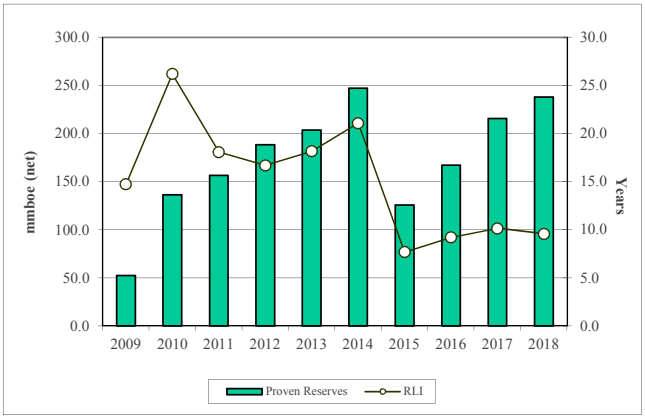
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

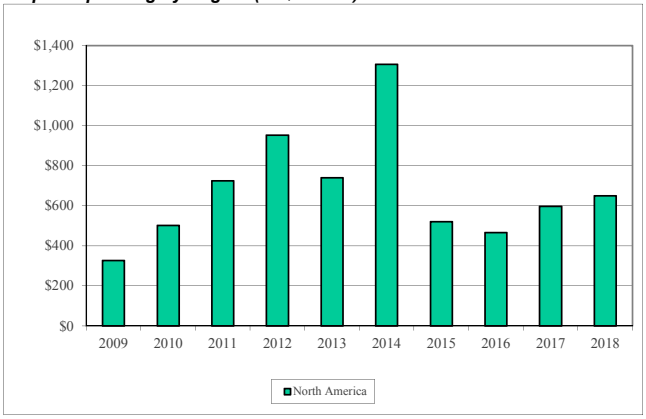
Laredo Petroleum (LPI - NYSE) US$, net

- Laredo generated results of operations of $12.81/boe in 2018 compared to $11.90/boe in 2017.
- One-year F&D costs came in at $13.60/boe, while the costs excluding revisions were recorded at $14.25/boe. On a realized oil:gas price ratio basis, F&D costs were $26.69/boe, while the costs for PD reserves were $22.95/boe.
- Laredo's 2018 results imply a required Brent breakeven oil price of $89.04/boe on total proved reserves, and $82.41/boe on PD reserve costs.
- The company reported ROCE of 20.3% in 2018 compared to a normalized 2017 ROCE of 21.5%.

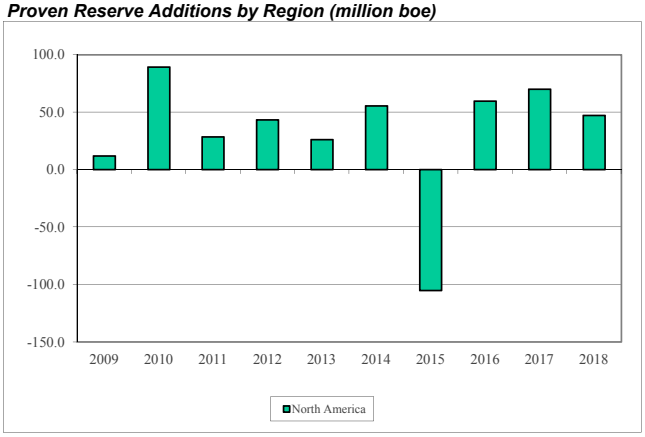
Proven Reserves vs RLI



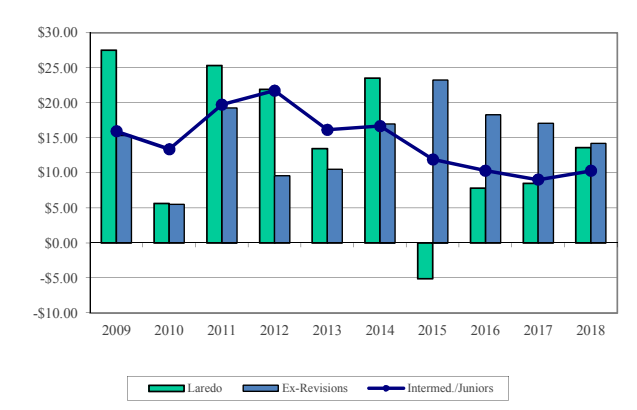
Capital Spending by Region (US$million)



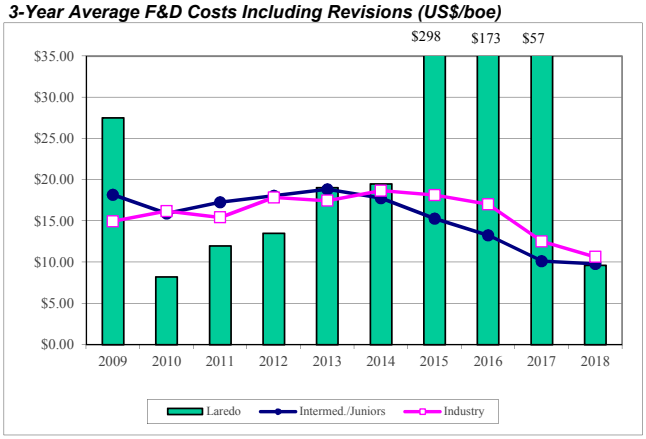
Proven Reserve Additions by Region (million boe)



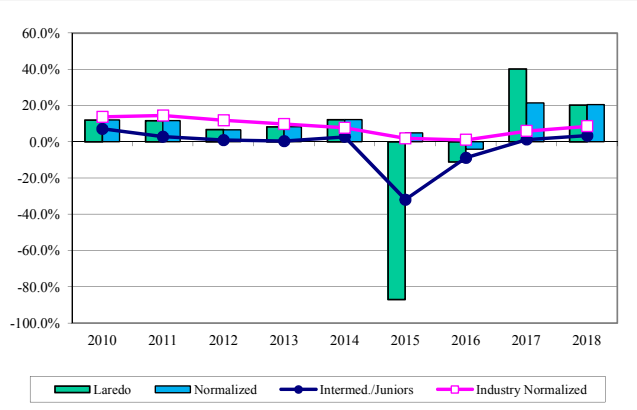
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

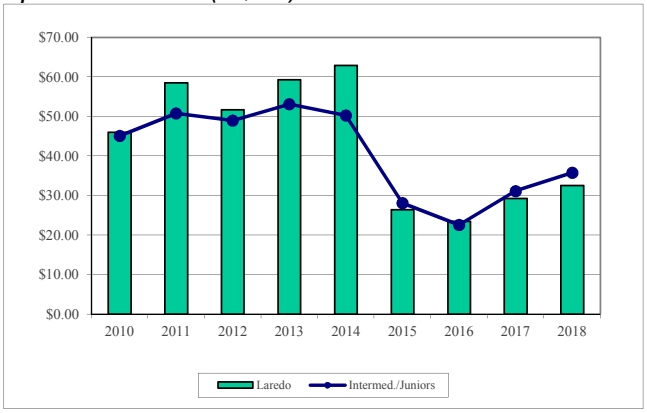
See pages F1 to F4 for analyst coverage.

Laredo Petroleum (LPI - NYSE)

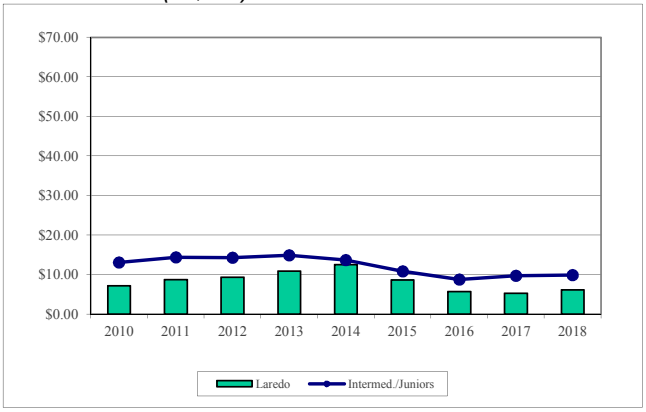
US$/boe, net

North America

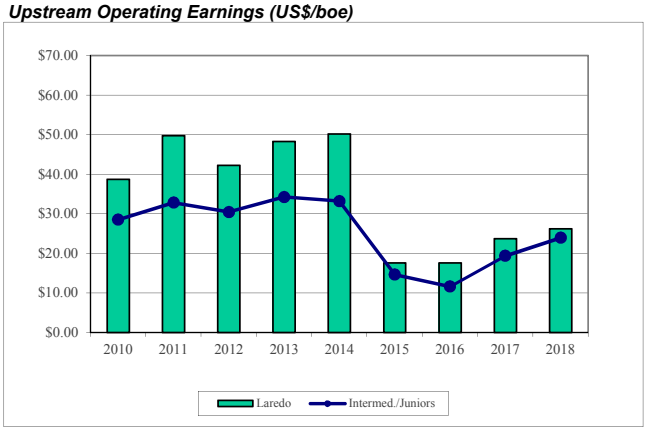
Upstream Net Revenue (US$/boe)



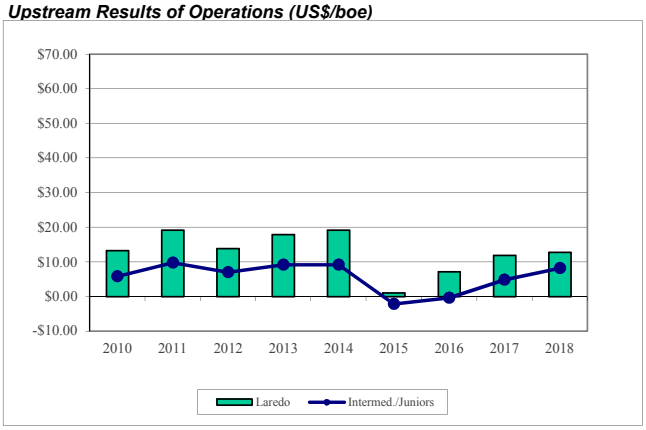
Production Costs (US$/boe)



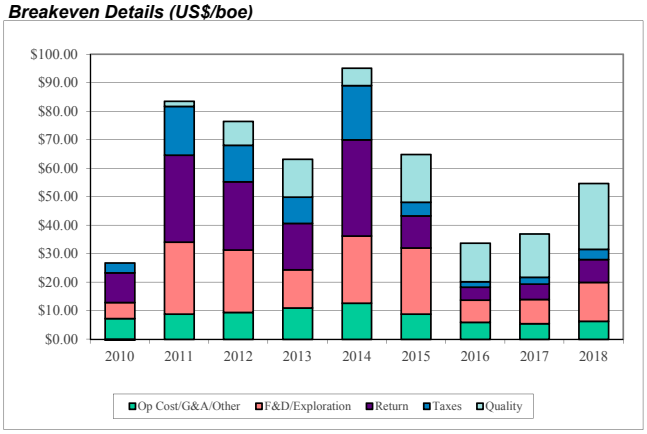
Upstream Operating Earnings (US$/boe)



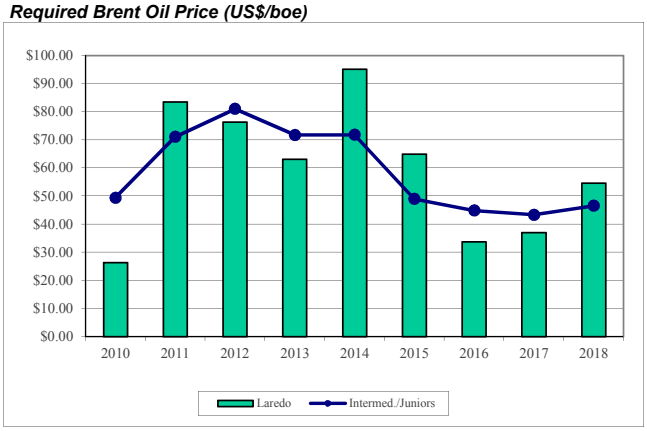
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Laredo Petroleum (LPI - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	-	94	240	506	584	665	737	432	426	622	809
Midstream / Downstream Revenue	-	2	2	4	5	0	57	175	171	201	9
Other	-	-	-	-	-	-	-	-	-	-	288
Total Revenue and Other Income	-	97	242	510	588	665	794	607	597	822	1,106
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	-	-	-	54	174	170	196	289
Production and Transportation Expenses	-	19	37	75	105	122	147	141	104	113	152
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	3
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	23	31	51	62	90	106	90	92	96	96
Depreciation, Depletion and Amortization	-	58	97	176	244	234	246	278	148	158	213
Interest, net	-	7	18	50	86	100	121	103	93	89	58
Other	-	244	(6)	(13)	(8)	(77)	(320)	2,205	248	(381)	(34)
Earnings Before Income Tax	-	(255)	63	170	99	195	438	(2,387)	(261)	551	329
Income Taxes:											
Current Income Taxes	-	-	-	-	-	-	-	-	-	2	(1)
Future Income Taxes		(74)	(26)	59	33	75	164	(177)	-	-	5
Total Income Taxes	-	(74)	(26)	59	33	75	164	(177)	-	2	4
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	(181)	89	110	66	121	274	(2,210)	(261)	549	325
Discontinued Operations/Extraordinary Items	-	-	-	-	-	1	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(181)	89	110	66	122	274	(2,210)	(261)	549	325
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	(181)	89	110	66	122	274	(2,210)	(261)	549	325

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	-	(181)	89	110	66	122	274	(2,210)	(261)	549	325
Charges and Credits Not Impacting Cash	-	231	72	236	277	310	415	2,476	310	158	218
Other	-	42	7	(9)	27	(51)	(205)	92	296	(329)	(5)
Cash Flow From Operations	-	92	168	337	370	381	483	358	346	379	537
Change in Working Capital / Other	-	24	(11)	7	12	(12)	15	(42)	10	6	0
Net Cash From Operating Activities	-	116	157	344	381	369	498	316	356	385	538
Total Capital Expenditures	-	(364)	(461)	(707)	(912)	(727)	(1,312)	(623)	(366)	(559)	(688)
Acquisitions, net	-	-	-	-	(20)	416	(12)	65	(124)	-	(3)
Other	-	2	0	0	(9)	(20)	(83)	(109)	(74)	854	-
Net Cash From Investing Activities	-	(361)	(461)	(707)	(941)	(330)	(1,407)	(668)	(564)	295	(691)
Financing Activities:											
Net Change in Debt	-	96	235	122	580	(165)	750	(391)	(65)	(593)	188
Net Change in Common Stock	-	154	84	319		296	(4)	751	274	(8)	(101)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-		0	0
Net Cash From Financing Activities	-	250	320	359	569	130	740	353	210	(600)	86
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	5	16	(3)	10	169	(169)	2	2	79	(67)
Cash and Equivalents, Beginning of Year	-	14	15	31	28	38	207	29	31	33	112
Cash and Equivalents, End of Year	-	19	31	28	38	207	38	31	33	112	45

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Laredo Petroleum (LPI - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	100	123	137	308	365	332	155	235	193
Net Property, Plant and Equipment	-	-	810	1,379	2,114	2,204	3,354	1,200	1,367	1,768	2,030
Other Assets	-	-	158	126	87	112	213	281	261	20	198
Total Assets	-	-	1,068	1,628	2,338	2,624	3,933	1,813	1,782	2,023	2,420
Liabilities and Stockholders' Equity											
Total Current Liabilities	-	-	150	214	262	254	425	217	188	277	200
Long-term Debt	-	-	492	637	1,217	1,052	1,801	1,416	1,354	792	984
Deferred Income Taxes	-	-	-	-	-	16	106	-	-	-	-
Other Liabilities and Deferred Credits	-	-	15	16	28	30	37	49	60	188	62
Total Liabilities	-	-	657	868	1,507	1,352	2,369	1,682	1,602	1,258	1,246
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Common Shares	-	-	-	1	1	1	1	2	2	2	2
Contributed Surplus (Paid-in Capital)	-	-	-	951	961	1,284	1,309	2,087	2,396	2,432	2,375
Preferred Stock	-	-	709	-	-	-	-	-	-	-	-
Retained Earnings	-	-	(298)	(193)	(131)	(13)	253	(1,957)	(2,218)	(1,669)	(1,203)
Other / Comprehensive Income (Loss)	-	-	-	-	(0)	-	-	-	-	-	-
Total Shareholders' Equity	-	-	411	760	832	1,272	1,563	131	181	766	1,174
Total Liabilities and Shareholders' Equity	-	-	1,068	1,628	2,338	2,624	3,933	1,813	1,782	2,023	2,420
Return on Capital Employed (ROCE)	-	-	**12.1%**	**11.7%**	**6.7%**	**8.3%**	**12.3%**	**-87.1%**	**-11.2%**	**40.2%**	**20.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	$46.01	$58.51	$51.64	$59.30	$62.86	$26.41	$23.50	$29.22	$32.50	$28.87	$32.75
Production Costs	-	-	$7.17	$8.70	$9.29	$10.84	$12.52	$8.64	$5.73	$5.31	$6.13	$5.74	$7.12
Exploration	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	$18.00	$19.82	$20.99	$20.34	$20.21	$16.13	$7.39	$6.75	$7.90	$7.37	$10.55
G&A/Other	-	-	$0.09	$0.07	$0.11	$0.13	$0.15	$0.14	$0.18	$0.17	$0.17	$0.17	$0.16
Pre-tax Earnings	-	-	$20.74	$29.91	$21.26	$27.99	$29.98	$1.50	$10.20	$17.00	$18.30	$15.58	$14.92
Income Taxes	-	-	$7.53	$10.77	$7.41	$10.08	$10.79	$0.45	$3.06	$5.10	$5.49	$4.68	$4.70
Results of Operations	-	-	$13.22	$19.14	$13.86	$17.92	$19.19	$1.05	$7.14	$11.90	$12.81	$10.91	$10.22

Source: BMO Capital Markets, Company Reports

Laredo Petroleum (LPI - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	50.1	58.6	86.9	107.3	94.1	79.4	73.5	80.9	98.6	122.4	100.6	90.9
Liquids Production (b/d)	-	1,405	4,515	9,227	13,082	15,033	18,907	32,540	36,236	41,849	47,764	41,950	35,459
Total Production (boe/d)	-	9,763	14,278	23,707	30,958	30,717	32,133	44,784	49,722	58,275	68,166	58,721	50,616
% Gas Production	-	86%	68%	61%	58%	51%	41%	27%	27%	28%	30%	29%	30%
% Oil Production	-	14%	32%	39%	42%	49%	59%	73%	73%	72%	70%	71%	70%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	279.5	550.3	601.1	542.9	552.7	642.8	222.0	316.9	414.6	537.8	423.1	426.8
Closing Oil Reserves (mmbbls)	-	5.9	44.8	56.3	98.1	111.5	140.2	88.7	114.3	146.8	148.5	136.5	127.7
Closing Total Proven Reserves (mmboe)	-	52.5	136.6	156.5	188.6	203.6	247.3	125.7	167.1	215.9	238.2	207.0	198.8
% Gas Reserves	-	89%	67%	64%	48%	45%	43%	29%	32%	32%	38%	34%	36%
% Oil Reserves	-	11%	33%	36%	52%	55%	57%	71%	68%	68%	62%	66%	64%
Proven Reserve Life Index	-	14.7	26.2	18.1	16.7	18.2	21.1	7.7	9.2	10.1	9.6	9.6	11.5
Proven Reserve Additions:													
Gas Additions (bcf)	-	53.8	292.1	82.5	-19.0	44.1	119.1	-394.0	124.4	133.7	167.8	426.0	151.0
Oil Additions (mmbbls)	-	2.9	40.6	14.8	46.6	18.8	35.6	-39.6	38.8	47.8	19.2	105.8	101.8
Total Additions (mmboe)	-	11.9	89.3	28.5	43.5	26.2	55.4	-105.3	59.6	70.1	47.2	176.8	126.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	21.3	91.4	37.6	96.1	69.9	76.5	22.4	24.9	34.9	44.1	103.9	202.9
Net Acquisitions	-	-	0.0	0.0	3.2	-28.4	0.3	-3.5	0.5	-0.2	0.9	1.2	(2.0)
Revisions of Estimates	-	(9.4)	(2.1)	(9.0)	(55.8)	(15.3)	(21.4)	(124.2)	34.1	35.4	2.2	71.6	(73.9)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	179.2%	102.4%	131.6%	221.1%	266.8%	138.1%	-21.3%	41.9%	49.8%	93.4%	58.8%	159.8%
Net Acquisitions	-	0.0%	0.0%	0.0%	7.3%	-108.3%	0.5%	3.3%	0.9%	-0.3%	2.0%	0.7%	-1.6%
Revisions of Estimates	-	-79.2%	-2.4%	-31.6%	-128.4%	-58.6%	-38.5%	118.0%	57.2%	50.5%	4.6%	40.5%	-58.3%
Additions as % of Production:													
Gas	-	294.0%	1366.2%	260.3%	-48.6%	128.4%	411.0%	-1469.4%	421.3%	371.7%	375.7%	386.6%	91.0%
Oil	-	571.7%	2461.6%	439.1%	976.9%	343.4%	515.8%	-333.5%	293.4%	312.7%	110.1%	230.3%	157.2%
Total	-	333.9%	1712.6%	329.9%	384.8%	233.6%	472.7%	-644.0%	328.1%	329.3%	189.6%	274.9%	137.4%
Additions as % of Reserves:													
Gas	-	19.2%	53.1%	13.7%	-3.5%	8.0%	18.5%	-177.5%	39.3%	32.3%	31.2%	100.7%	35.4%
Oil	-	49.5%	90.5%	26.3%	47.5%	16.9%	25.4%	-44.6%	34.0%	32.5%	12.9%	77.5%	79.7%
Total	-	22.7%	65.4%	18.2%	23.0%	12.9%	22.4%	-83.8%	35.6%	32.4%	19.8%	85.4%	63.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	$53.7	$87.6	$62.9	$93.3	$48.8	$242.3	$20.7	$41.3	$36.3	$23.9	$101.5	$364.5
Development	-	$273.9	$414.9	$660.9	$839.1	$654.5	$1,049.3	$500.6	$298.9	$560.9	$607.8	$1,467.7	$3,017.5
Net Acquisitions	-	$0.0	$0.0	$0.0	$20.6	$36.7	$13.8	$0.0	$125.8	$0.0	$17.9	$143.7	$157.5
Total Expenditures	-	$327.6	$502.4	$723.8	$953.0	$740.0	$1,305.4	$521.3	$466.1	$597.2	$649.5	$1,712.8	$3,539.5
Expenditures as % of Total:													
Exploration	-	16.4%	17.4%	8.7%	9.8%	6.6%	18.6%	4.0%	8.9%	6.1%	3.7%	5.9%	10.3%
Development	-	83.6%	82.6%	91.3%	88.0%	88.4%	80.4%	96.0%	64.1%	93.9%	93.6%	85.7%	85.3%
Net Acquisitions	-	0.0%	0.0%	0.0%	2.2%	5.0%	1.1%	0.0%	27.0%	0.0%	2.7%	8.4%	4.4%
Cashflow (US$million)	-	$69.1	$162.7	$337.2	$393.7	$428.9	$462.1	$280.9	$263.7	$396.6	$515.2	$1,175.6	$1,918.6
Cashflow (US$/boe)	-	$19.39	$31.22	$38.97	$34.84	$38.25	$39.40	$17.18	$14.53	$18.65	$20.71	$18.28	$20.77
Recycle Ratio	-	0.7x	5.5x	1.5x	1.6x	2.8x	1.7x	-3.4x	1.9x	2.2x	1.5x	1.9x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	$27.53	$5.63	$25.36	$23.14	$12.89	$23.41	-$5.12	$5.77	$8.50	$13.66	$8.94	$26.23
Net Acquisition Costs	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	-	$27.53	$5.63	$25.36	$21.92	$13.46	$23.55	-$5.12	$7.83	$8.50	$13.60	$9.69	$27.89
Exploration & Development (excl. revisions)	-	$15.36	$5.50	$19.27	$9.70	$10.06	$16.88	$23.28	$13.64	$17.10	$14.33	$15.10	$16.67
Net Acquisition Costs	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	-	$15.36	$5.50	$19.27	$9.60	$10.53	$17.00	$23.28	$18.30	$17.10	$14.25	$16.29	$17.62

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Laredo Petroleum (LPI - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	7.17	8.70	9.29	10.84	12.52	8.64	5.73	5.31	6.13	5.74	7.12
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	0.09	0.07	0.11	0.13	0.15	0.14	0.18	0.17	0.17	0.17	0.16
F&D Costs (1-Year)	-	-	5.63	25.36	21.92	13.46	23.55	23.28	18.30	17.10	13.60	16.33	19.17
Return on Capital	-	-	10.40	30.45	23.97	16.25	33.77	11.20	10.45	10.85	8.13	9.82	13.98
Income Taxes	-	-	3.47	17.13	12.81	9.14	19.00	4.80	4.48	4.65	3.49	4.21	6.34
Breakeven Oil Price	**-**	**-**	**26.76**	**81.70**	**68.10**	**49.82**	**88.98**	**48.06**	**39.13**	**38.08**	**31.51**	**36.27**	**46.77**
Quality Differential	-	-	(0.44)	1.86	8.30	13.34	6.15	16.81	13.54	15.24	23.13	17.30	14.97
Required Brent Price	**-**	**-**	**26.32**	**83.56**	**76.40**	**63.16**	**95.14**	**64.88**	**52.67**	**53.32**	**54.64**	**53.57**	**61.74**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	12.00	13.53	15.63	16.48	16.49	10.47	6.92	6.49	8.16	7.23	8.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	0.15	0.11	0.18	0.20	0.19	0.17	0.22	0.21	0.23	0.22	0.20
F&D Costs (1-Year)	-	-	8.29	35.30	20.85	23.45	29.79	28.10	22.44	20.99	26.69	23.37	25.60
Return on Capital	-	-	15.56	42.04	25.81	30.47	41.85	13.30	12.38	12.92	14.59	13.80	18.35
Income Taxes	-	-	5.19	23.65	13.79	17.14	23.54	5.70	5.31	5.54	6.25	5.91	8.32
Breakeven Oil Price	**-**	**-**	**41.19**	**114.64**	**76.25**	**87.74**	**111.87**	**57.72**	**47.26**	**46.14**	**55.93**	**50.53**	**61.43**
Quality Differential	-	-	(4.33)	(0.88)	10.26	18.97	44.95	36.25	10.53	18.67	33.12	20.78	28.70
Required Brent Price	**-**	**-**	**36.86**	**113.76**	**86.51**	**106.71**	**156.81**	**93.97**	**57.80**	**64.81**	**89.04**	**71.31**	**90.13**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	12.00	13.53	15.63	16.48	16.49	10.47	6.92	6.49	8.16	7.23	8.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	0.15	0.11	0.18	0.20	0.19	0.17	0.22	0.21	0.23	0.22	0.20
F&D Costs (1-Year)	-	-	30.10	38.81	47.00	42.26	38.28	24.11	17.99	16.55	22.95	19.17	23.98
Return on Capital	-	-	57.29	45.08	57.86	53.98	51.73	11.42	10.00	10.19	12.57	10.99	16.89
Income Taxes	-	-	19.10	25.36	30.92	30.36	29.10	4.90	4.29	4.37	5.39	4.71	7.66
Breakeven Oil Price	**-**	**-**	**118.64**	**122.88**	**151.59**	**143.28**	**135.80**	**51.06**	**39.41**	**37.82**	**49.29**	**42.31**	**57.68**
Quality Differential	-	-	(4.33)	(0.88)	10.26	18.97	44.95	36.25	10.53	18.67	33.12	20.78	28.70
Required Brent Price	**-**	**-**	**114.31**	**122.00**	**161.85**	**162.25**	**180.74**	**87.31**	**49.95**	**56.49**	**82.41**	**63.09**	**86.38**

Source: BMO Capital Markets, Company Reports

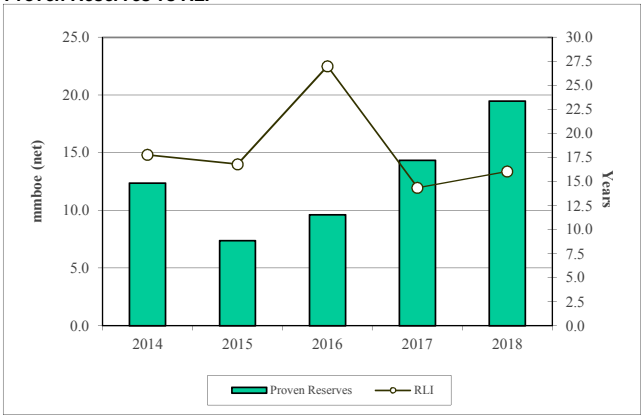
See pages F1 to F4 for analyst coverage.

Leucrotta (LXE - TSX) US$, net

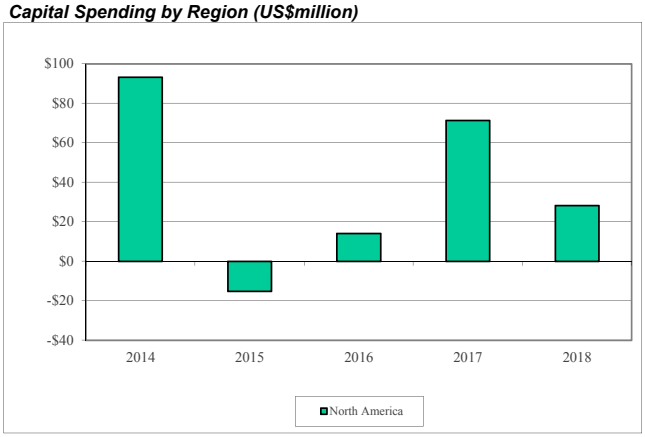
- Leucrotta reported results from operations of $0.91/boe in 2018 versus a loss of $4.18/boe last year.
- One-year F&D costs decreased to $4.27/boe from $12.73/boe in 2017. On a realized oil:gas price ratio basis, the F&D costs came in lower at $10.50/boe compared to $29.10/boe last year while the costs for PD reserves dropped to $54.37/boe from $68.75/boe the previous year.
- Leucrotta's 2018 operations imply a required Brent breakeven oil price of $86.29/boe, while its PD costs suggest a breakeven oil price of $186.68/boe.
- The company reported ROCE of 0.0% in 2018 compared to last year's loss on capital employed of 3.6%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

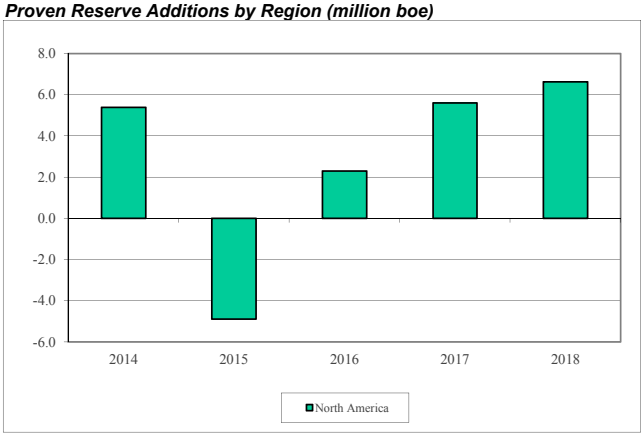
Proven Reserves vs RLI



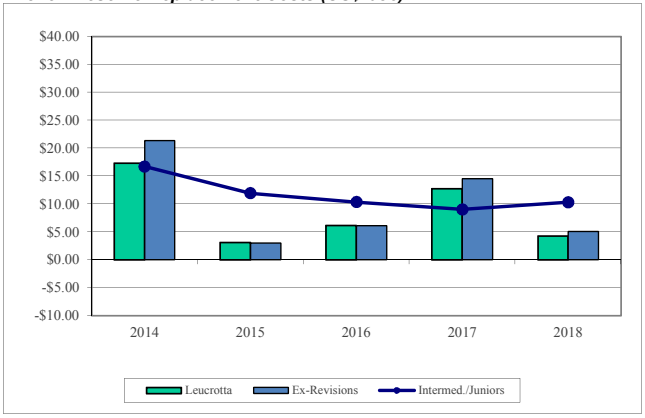
Capital Spending by Region (US$million)



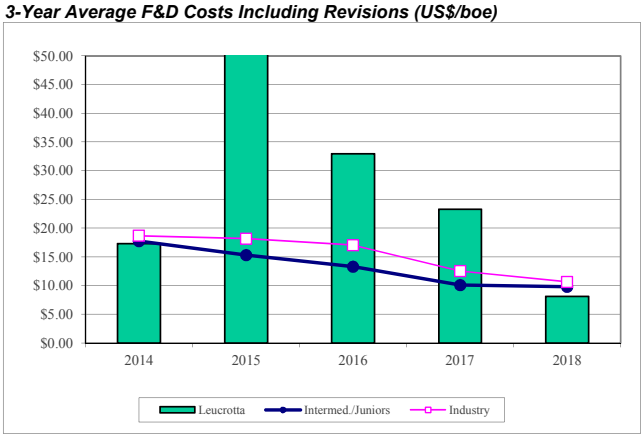
Proven Reserve Additions by Region (million boe)



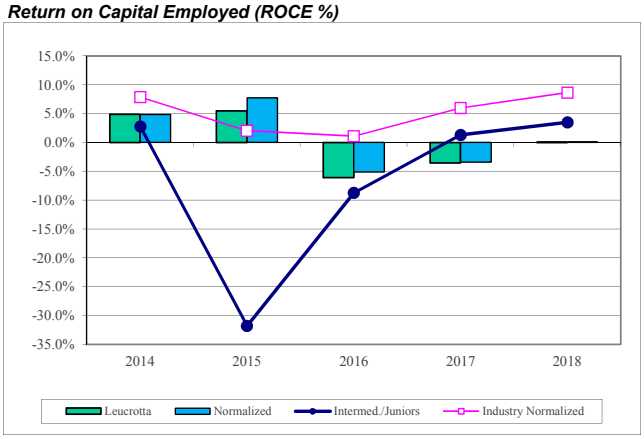
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

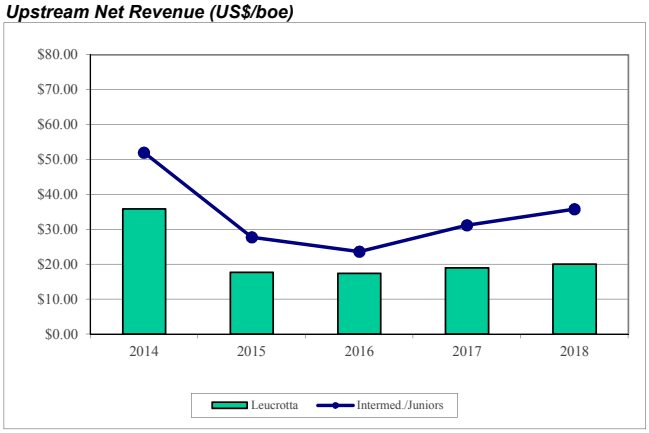
See pages F1 to F4 for analyst coverage.

Leucrotta (LXE - TSX)

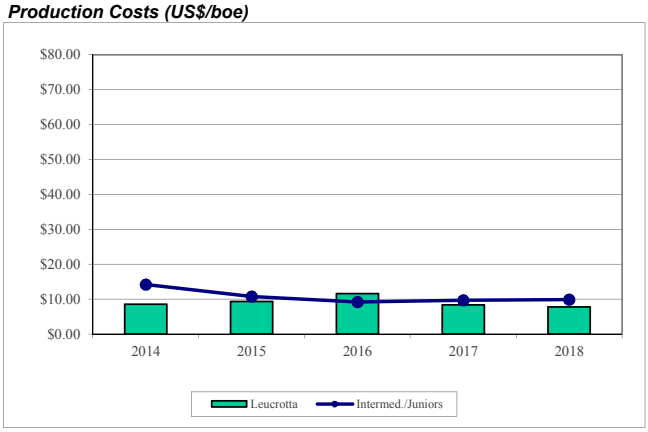
US$, net

North America

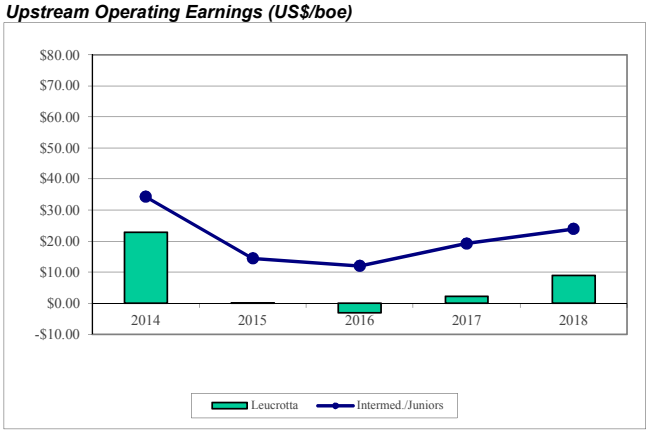
Upstream Net Revenue (US$/boe)



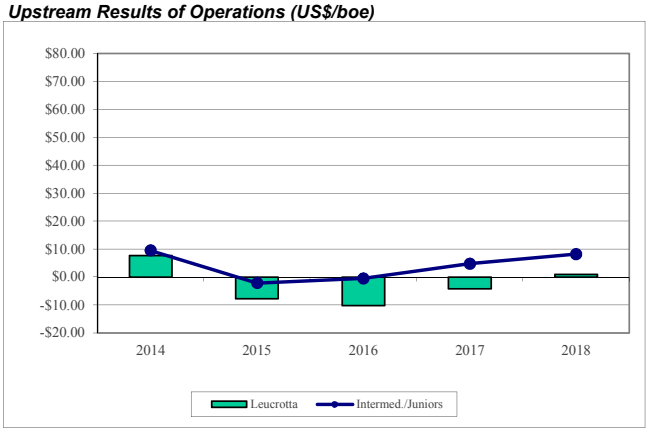
Production Costs (US$/boe)



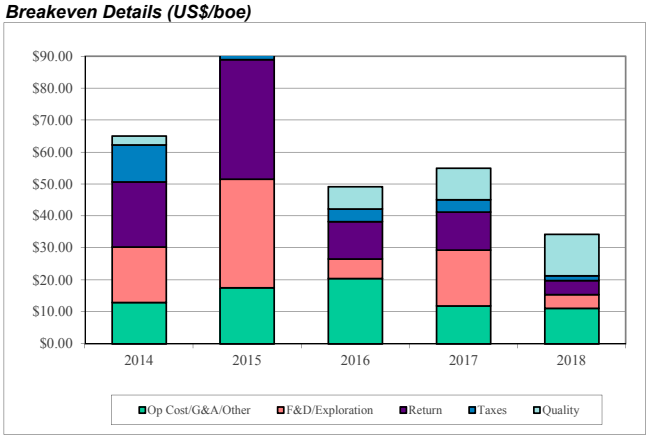
Upstream Operating Earnings (US$/boe)



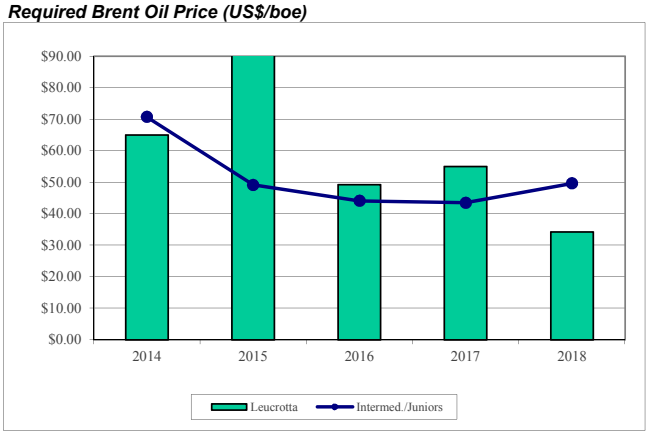
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Leucrotta (LXE - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	-	25	8	6	19	24
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	1
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	-	-	-	-	-	25	8	6	19	26
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	-	-	-	6	4	4	8	9
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	5	-
General and Administrative	-	-	-	-	-	-	3	4	3	3	4
Depreciation, Depletion and Amortization	-	-	-	-	-	-	7	7	4	8	9
Interest, net	-	-	-	-	-	-	2	(0)	0	(0)	0
Other	-	-	-	-	-	-	2	(24)	4	2	3
Earnings Before Income Tax	-	-	-	-	-	-	4	18	(9)	(7)	(0)
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	-	-	-	-	-	-	2	9	-	(1)	-
Total Income Taxes	-	-	-	-	-	-	2	9	-	(1)	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	-	3	9	(9)	(6)	(0)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	-	3	9	(9)	(6)	(0)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	-	3	9	(9)	(6)	(0)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	-	3	9	(9)	(6)	(0)
Charges and Credits Not Impacting Cash	-	-	-	-	-	-	9	23	4	7	9
Other	-	-	-	-	-	-	2	(31)	5	6	3
Cash Flow From Operations	-	-	-	-	-	-	14	0	(1)	7	12
Change in Working Capital / Other	-	-	-	-	-	-	0	(1)	1	(1)	0
Net Cash From Operating Activities	-	-	-	-	-	-	14	(0)	(0)	6	13
Total Capital Expenditures	-	-	-	-	-	-	(77)	(46)	(14)	(45)	(28)
Acquisitions, net	-	-	-	-	-	-	(7)	62	(0)	(27)	-
Other	-	-	-	-	-	-	13	(6)	(1)	(1)	(2)
Net Cash From Investing Activities	-	-	-	-	-	-	(70)	10	(15)	(72)	(31)
Net Change in Debt	-	-	-	-	-	-	(14)	-	-	-	2
Net Issuance of Trust Units	-	-	-	-	-	-	84	-	-	58	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Distributions Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	23	-	-	0	0
Net Cash From Financing Activities	-	-	-	-	-	-	94	-	-	58	2
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	-	37	10	(16)	(7)	(16)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	-	-	32	41	25	18
Cash and Equivalents, End of Year	-	-	-	-	-	-	37	42	25	18	2

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Leucrotta (LXE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	-	41	46	27	23	9
Net Property, Plant and Equipment	-	-	-	-	-	-	169	152	156	219	236
Other Assets	-	-	-	-	-	-	10	-	-	-	0
Total Assets	-	-	-	-	-	-	220	198	183	241	245
Total Current Liabilities	-	-	-	-	-	-	18	10	7	8	7
Long-term Debt	-	-	-	-	-	-	-	-	-	-	-
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Other Liabilities and Deferred Credits	-	-	-	-	-	-	7	5	5	7	7
Total Liabilities	-	-	-	-	-	-	25	15	12	15	14
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Unitholders' Capital	-	-	-	-	-	-	257	222	162	223	223
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	2	7	9	11	15
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	-	-	-	-	-	-	(0)	9	(1)	(7)	(7)
Accumulated Cash Distributions / Other	-	-	-	-	-	-	(63)	(55)	-	-	-
Total Shareholders' Equity	-	-	-	-	-	-	195	183	170	227	230
Total Liabilities and Shareholders' Equity	-	-	-	-	-	-	220	198	183	241	245
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**4.9%**	**5.5%**	**-6.1%**	**-3.6%**	**0.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue							$35.85	$17.64	$17.42	$18.96	$20.06	$19.27	$22.19
Production Costs							$8.60	$9.35	$11.56	$8.36	$7.78	$8.53	$8.64
Exploration							$0.00	$0.00	$0.00	$4.81	$0.00	$1.87	$1.30
DD&A							$10.71	$15.34	$10.50	$7.88	$7.73	$8.17	$9.50
G&A / Other							$4.39	$8.21	$8.92	$3.49	$3.34	$4.17	$4.69
Pre-tax Results of Operations							$12.15	-$15.27	-$13.57	-$5.58	$1.22	-$3.48	-$1.94
Income Taxes							$4.42	-$7.59	-$3.39	-$1.39	$0.30	-$0.87	-$0.62
Results of Operations							$7.73	-$7.68	-$10.18	-$4.18	$0.91	-$2.61	-$1.31

Source: BMO Capital Markets, Company Reports

Leucrotta (LXE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)							9.4	5.5	4.1	11.7	14.5	10.1	11.3
Liquids Production (b/d)							336	284	299	796	912	669	657
Total Production (boe/d)							1,907	1,204	976	2,738	3,324	2,346	2,537
% Gas Production							82%	76%	69%	71%	73%	71%	74%
% Oil Production							18%	24%	31%	29%	27%	29%	26%
Proven Reserves:													
Closing Gas Reserves (bcf)							63.0	36.1	46.4	67.3	88.5	67.4	75.3
Closing Oil Reserves (mmbbls)							1.9	1.4	1.9	3.1	4.7	3.3	3.2
Closing Total Proven Reserves (mmboe)							12.4	7.4	9.6	14.4	19.5	14.5	15.8
% Gas Reserves							85%	81%	80%	78%	76%	78%	79%
% Oil Reserves							15%	19%	20%	22%	24%	22%	21%
Proven Reserve Life Index							17.8	16.8	27.0	14.4	16.1	19.2	23.0
Proven Reserve Additions:													
Gas Additions (bcf)							25.9	-26.8	10.4	24.6	27.9	62.9	61.9
Oil Additions (mmbbls)							1.1	-0.4	0.6	1.5	2.0	4.0	4.7
Total Additions (mmboe)							5.4	-4.9	2.3	5.6	6.6	14.5	15.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions							3.8	1.0	2.3	4.9	5.6	12.8	17.6
Net Acquisitions							0.6	(6.1)	-	-	-	-	(5.5)
Revisions of Estimates							1.0	0.2	0.0	0.7	1.0	1.7	2.9
Components as % of Total Additions:													
Extensions, Discoveries and Additions							70.7%	-20.8%	100.2%	87.6%	84.6%	88.2%	117.4%
Net Acquisitions							10.3%	124.0%	0.0%	0.0%	0.0%	0.0%	-36.7%
Revisions of Estimates							19.0%	-3.2%	-0.2%	12.4%	15.4%	11.8%	19.3%
Additions as % of Production:													
Gas							751.9%	-1331.1%	700.9%	578.3%	527.9%	570.6%	300.7%
Oil							875.9%	-400.9%	513.8%	515.3%	593.4%	550.6%	391.5%
Total							773.7%	-1111.8%	643.6%	560.0%	545.9%	564.9%	324.2%
Additions as % of Reserves:													
Gas							41.1%	-74.4%	22.4%	36.6%	31.5%	93.3%	82.2%
Oil							57.3%	-30.4%	29.8%	47.7%	41.7%	124.0%	144.4%
Total							43.5%	-66.2%	23.8%	39.0%	34.0%	100.2%	95.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic							$26.7	$5.4	$0.9	$2.1	$2.4	$5.4	$37.5
Exploration & Development							$36.8	$34.4	$13.1	$42.6	$25.9	$81.6	$152.7
Net Acquisitions							$29.7	-$55.0	$0.0	$26.6	$0.0	$26.6	$1.3
Total Expenditures							$93.2	-$15.2	$14.0	$71.3	$28.3	$113.6	$191.5
Expenditures as % of Total:													
Land & Seismic							28.7%	-35.4%	6.7%	2.9%	8.4%	4.7%	19.6%
Exploration & Development							39.5%	-226.2%	93.1%	59.8%	91.6%	71.8%	79.7%
Net Acquisitions							31.9%	361.6%	0.2%	37.3%	0.0%	23.4%	0.7%
Cashflow (US$million)							13.8	0.4	-0.8	7.2	12.2	18.6	32.8
Cashflow (US$/boe)							$19.79	$0.94	-$2.11	$7.18	$10.03	$7.24	$7.08
Recycle Ratio							1.1x	0.3x	-0.3x	0.6x	2.4x	0.9x	0.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)							$13.14	$33.95	$6.11	$7.99	$4.27	$5.99	$9.27
Net Acquisition Costs							$53.76	$9.08	na	na	na	na	-$0.23
All Sources (incl. revisions)							$17.30	$3.11	$6.12	$12.73	$4.27	$7.82	$12.76
Exploration & Development (excl. revisions)							$16.67	$39.21	$6.10	$9.12	$5.04	$6.79	$10.79
Net Acquisition Costs							$53.76	$9.08	na	na	na	na	-$0.23
All Sources (excl. revisions)							nm	$3.02	$6.11	$14.54	$5.04	$8.87	$15.80

Note: Reserve estimates reported before royalties, presented net based on average annual royalty rates.
Source: BMO Capital Markets, Company Reports

Leucrotta (LXE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	8.60	9.35	11.56	8.36	7.78	8.53	8.64
Exploration Expense	-	-	-	-	-	-	-	-	-	4.81	-	1.87	1.30
G&A/Other	-	-	-	-	-	-	4.39	8.21	8.92	3.49	3.34	4.17	4.69
F&D Costs (1-Year)	-	-	-	-	-	-	17.30	33.95	6.12	12.73	4.27	8.14	7.71
Return on Capital	-	-	-	-	-	-	20.37	37.44	11.69	11.81	4.46	10.44	9.45
Income Taxes	-	-	-	-	-	-	11.64	37.00	3.90	3.94	1.49	3.48	4.49
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**62.30**	**125.94**	**42.19**	**45.13**	**21.33**	**36.64**	**36.27**
Quality Differential	-	-	-	-	-	-	2.74	7.04	7.02	9.82	12.93	9.92	7.91
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**65.04**	**132.98**	**49.21**	**54.95**	**34.26**	**46.56**	**44.19**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	18.25	19.22	22.29	18.36	20.15	19.77	19.40
Exploration Expense	-	-	-	-	-	-	-	-	-	10.57	-	4.34	2.92
G&A/Other	-	-	-	-	-	-	9.33	16.89	17.20	7.66	8.63	9.66	10.53
F&D Costs (1-Year)	-	-	-	-	-	-	35.60	53.83	12.87	29.10	10.50	19.36	17.49
Return on Capital	-	-	-	-	-	-	40.28	54.56	20.41	23.39	10.17	21.44	19.15
Income Taxes	-	-	-	-	-	-	23.02	53.91	6.80	7.80	3.39	7.15	9.10
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**126.49**	**198.41**	**79.58**	**96.86**	**52.83**	**81.72**	**78.58**
Quality Differential	-	-	-	-	-	-	5.83	14.48	13.54	21.57	33.46	22.86	17.77
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**132.32**	**212.89**	**93.12**	**118.43**	**86.29**	**104.57**	**96.35**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

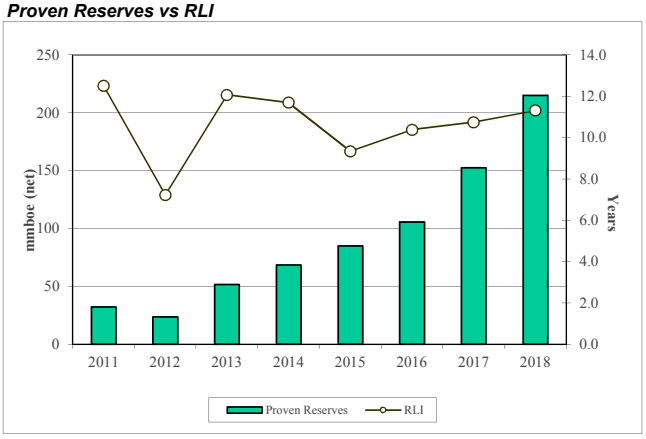
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	18.25	19.22	22.29	18.36	20.15	19.77	19.40
Exploration Expense	-	-	-	-	-	-	-	-	-	10.57	-	4.34	2.92
G&A/Other	-	-	-	-	-	-	9.33	16.89	17.20	7.66	8.63	9.66	10.53
F&D Costs (1-Year)	-	-	-	-	-	-	49.60	44.48	27.36	68.75	54.37	63.99	48.91
Return on Capital	-	-	-	-	-	-	55.86	45.19	41.90	55.16	52.56	70.94	53.42
Income Taxes	-	-	-	-	-	-	31.92	44.65	13.97	18.39	17.52	23.65	25.38
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**164.96**	**170.42**	**122.73**	**178.88**	**153.22**	**192.34**	**160.56**
Quality Differential	-	-	-	-	-	-	5.83	14.48	13.54	21.57	33.46	22.86	17.77
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**170.79**	**184.90**	**136.27**	**200.45**	**186.68**	**215.20**	**178.33**

Source: BMO Capital Markets, Company Reports

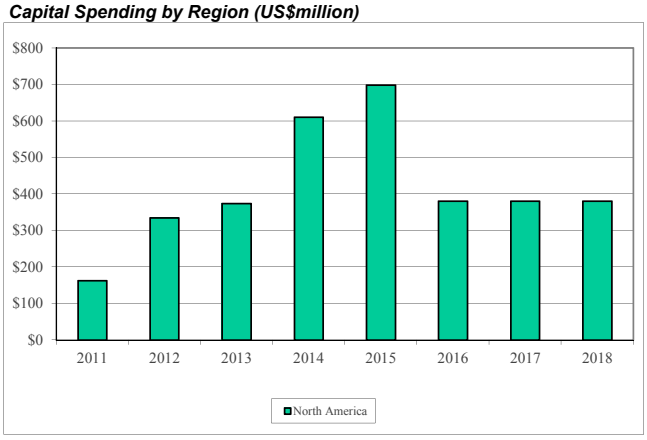
Matador Resources (MTDR - NYSE) US$, net

- Matador reported results of operations of $12.77/boe in 2018 compared to results of $9.15/boe in 2017.
- One-year F&D costs came in at $16.37/boe compared with $12.30/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $22.19/boe compared to $15.59/boe last year, while the costs for PD reserves increased to $40.81/boe from $25.21/boe the previous year.
- Matador's 2018 results imply a required Brent breakeven oil price of $68.89/boe on total proved reserves, while its PD costs suggest a breakeven oil price of $102.87/boe.
- The company reported ROCE of 12.7% in 2018.

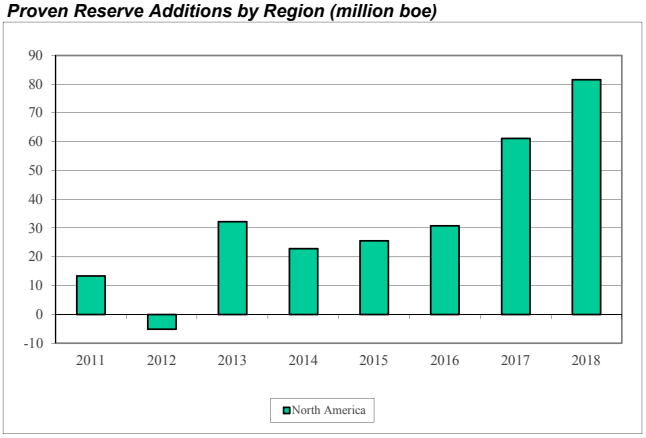
Proven Reserves vs RLI



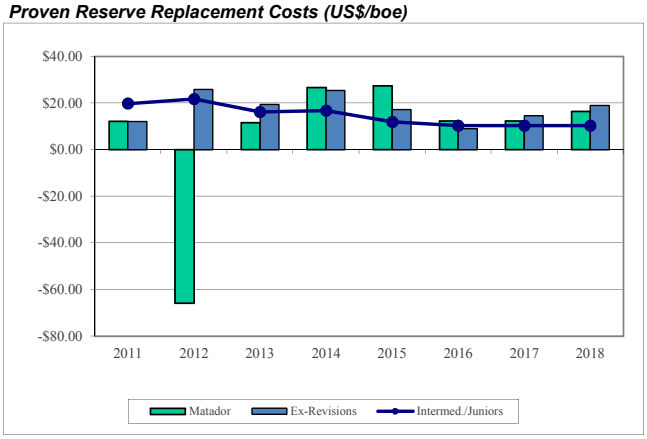
Capital Spending by Region (US$million)



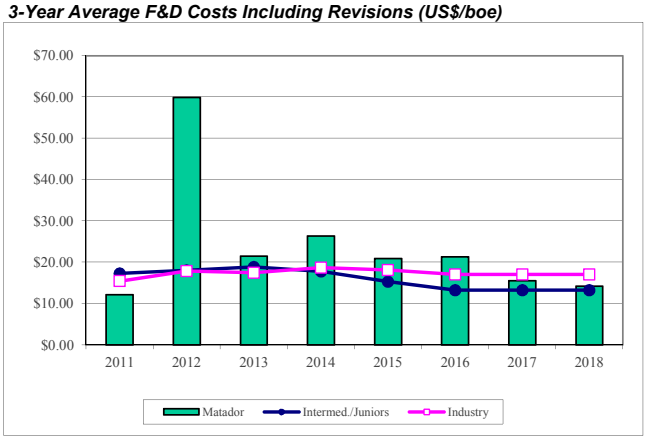
Proven Reserve Additions by Region (million boe)



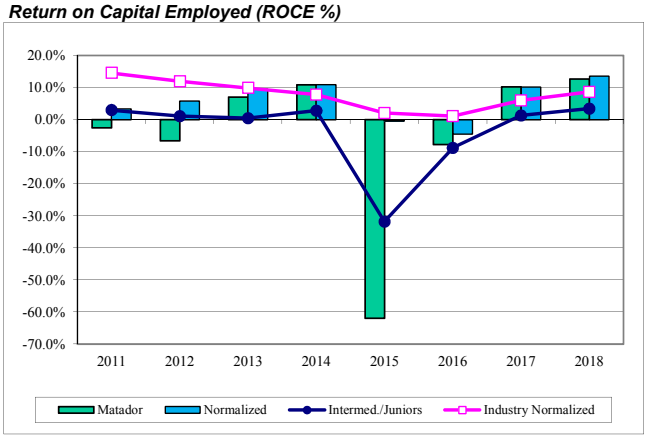
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

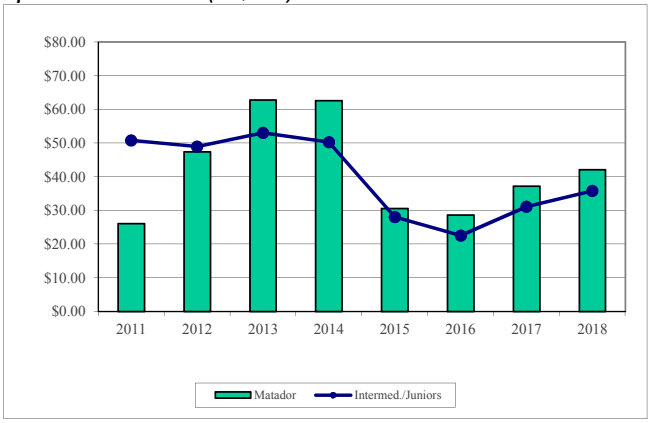
See pages F1 to F4 for analyst coverage.

Matador Resources (MTDR - NYSE)

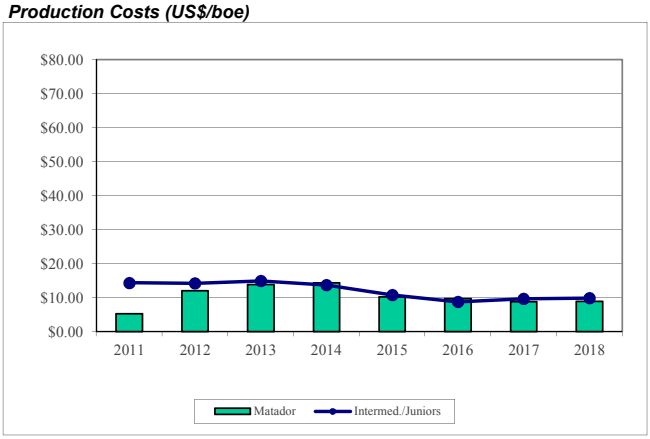
US$/boe, net

North America

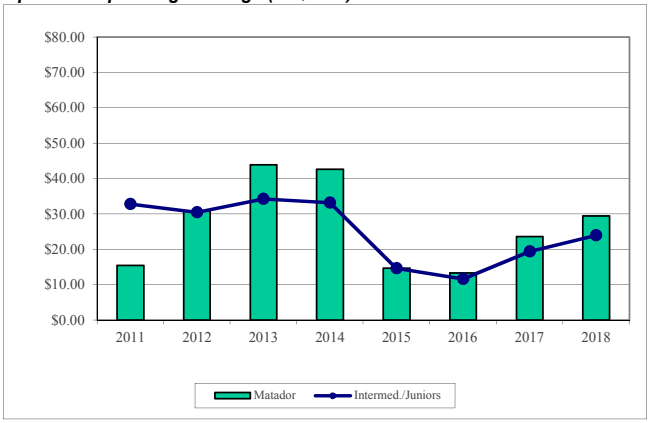
Upstream Net Revenue (US$/boe)



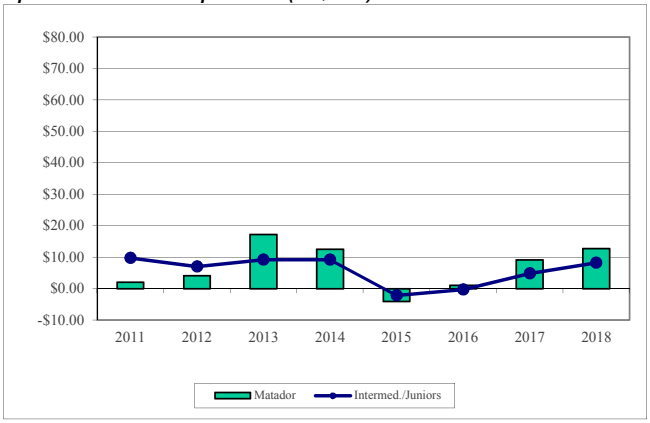
Production Costs (US$/boe)



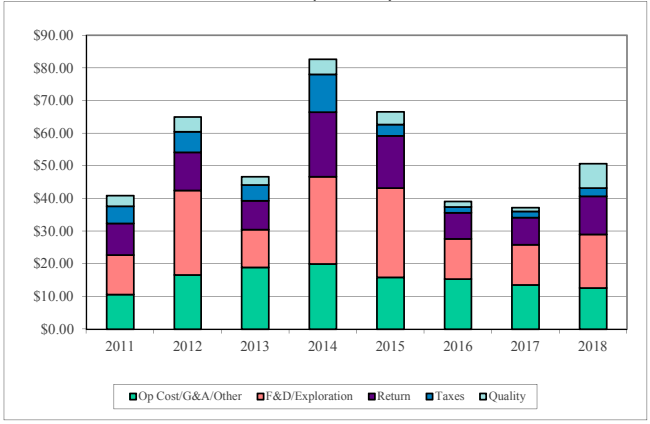
Upstream Operating Earnings (US$/boe)



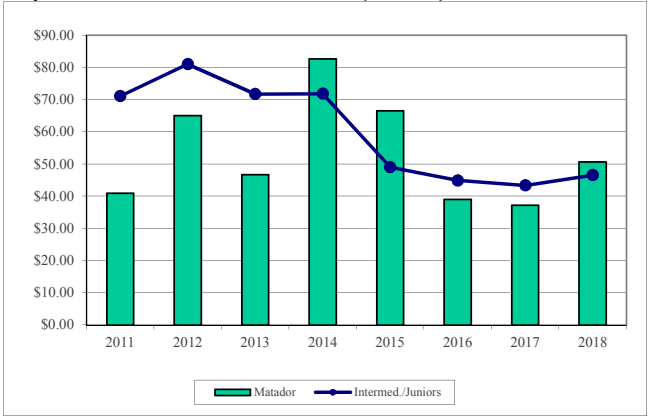
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Matador Resources (MTDR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	67	156	269	368	278	291	529	801
Midstream / Downstream Revenue	-	-	-	-		-	-	-	5		22
Other	-	-	-	12	9	(8)	63	38	(32)	5	77
Total Revenue and Other Income	-	-	-	79	165	261	431	316	264	534	900
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-		7
Production and Transportation Expenses	-	-	-	14	40	60	85	94	99	67	169
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	-	13	15	21	32	50	55	66	69
Depreciation, Depletion and Amortization	-	-	-	32	80	98	135	179	122	178	265
Interest, net	-	-	-	0	1	5	4	19	28	35	41
Other	-	-	-	36	64	21	-	800	57	58	54
Earnings Before Income Tax	-	-	-	(16)	(35)	55	175	(827)	(98)	130	292
Current Income Taxes	-	-	-	(0)	-	0	0	3	(1)	(8)	(0)
Future Income Taxes	-	-	-	(5)	(1)	9	64	(150)	-	-	(7)
Total Income Taxes	-	-	-	(6)	(1)	10	64	(147)	(1)	(8)	(8)
Minority Interest	-	-	-	-	-	-	0	(0)	(0)	(12)	(26)
Earnings From Continuing Operations	-	-	-	(10)	(33)	45	111	(680)	(97)	126	274
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	(10)	(33)	45	111	(680)	(97)	126	274
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	
Net Earnings to Common Shareholders	-	-	-	(10)	(33)	45	111	(680)	(97)	126	274

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	(10)	(33)	45	111	(680)	(97)	126	274
Charges and Credits Not Impacting Cash	-	-	-	62	142	129	199	830	281	178	258
Other	-	-	-	(2)	6	12	(52)	50	(51)	21	12
Cash Flow From Operations	-	-	-	49	115	186	257	200	132	324	544
Change in Working Capital / Other	-	-	-	13	9	(6)	(6)	9	2	(25)	64
Net Cash From Operating Activities	-	-	-	62	124	179	251	209	134	299	609
Total Capital Expenditures	-	-	-	(161)	(308)	(367)	(570)	(497)	(454)	(820)	(1,524)
Acquisitions, net	-	-	-	-	-	-	0	116	5	1	8
Other	-	-	-	1	1	0	(1)	(44)	43	(5)	-
Net Cash From Investing Activities	-	-	-	(160)	(307)	(367)	(571)	(425)	(406)	(824)	(1,515)
Net Change in Debt	-	-	-	88	37	50	140	48	185	-	689
Net Change in Common Stock	-	-	-	1	147	149	182	189	289	208	226
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	(0)	-	-	-	-	-	-	-
Other	-	-	-	(1)	(9)	(7)	(1)	(12)	(5)	200	(27)
Net Cash From Financing Activities	-	-	-	87	174	192	321	225	468	408	888
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	(11)	(8)	4	2	8	196	(116)	(18)
Cash and Equivalents, Beginning of Year	-	-	-	21	10	2	6	8	17	213	102
Cash and Equivalents, End of Year	-	-	-	10	2	6	8	17	213	97	84

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Matador Resources (MTDR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	36	38	42	113	127	279	257	325
Net Property, Plant and Equipment	-	-	-	400	591	846	1,322	1,012	1,185	1,881	3,123
Other Assets	-	-	-	3	3	2	1	1	1	7	8
Total Assets	-	-	-	439	632	890	1,436	1,141	1,465	2,146	3,456
Total Current Liabilities	-	-	-	75	96	100	162	137	170	283	330
Long-term Debt	-	-	-	88	150	200	340	391	574	574	1,298
Deferred Income Taxes	-	-	-			11	54	-	-	-	13
Other Liabilities and Deferred Credits	-	-	-	5	6	10	14	124	30	31	35
Total Liabilities	-	-	-	168	253	321	570	652	773	888	1,676
Minority Interests	-	-	-				0	1	1	101	91
Common Shares	-	-	-	0	1	1	1	1	1	1	1
Contributed Surplus (Paid-in Capital)	-	-	-	264	404	549	725	1,026	1,325	1,666	1,924
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	18	(15)	30	141	(539)	(636)	(510)	(236)
Other / Comprehensive Income (Loss)	-	-	-	(11)	(11)	(11)	-	-	-	(0)	(0)
Total Shareholders' Equity	-	-	-	272	379	569	866	488	690	1,157	1,689
Total Liabilities and Shareholders' Equity	-	-	-	439	632	890	1,436	1,141	1,465	2,146	3,456
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**-2.5%**	**-6.6%**	**7.0%**	**10.9%**	**-61.9%**	**-7.7%**	**10.2%**	**12.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	$26.04	$47.36	$62.78	$62.64	$30.56	$28.60	$37.20	$42.08	$37.32	$38.81
Production Costs	-	-	-	$5.26	$12.10	$13.93	$14.40	$10.29	$9.75	$8.84	$8.89	$9.07	$9.80
Exploration	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	-	$12.34	$24.43	$23.04	$22.95	$19.63	$11.99	$12.49	$13.94	$13.01	$15.04
G&A/Other	-	-	-	$5.29	$4.49	$4.93	$5.56	$5.58	$5.53	$4.74	$3.72	$4.48	$4.76
Pre-tax Results of Operations	-	-	-	$3.16	$6.34	$20.88	$19.72	-$4.95	$1.33	$11.14	$15.54	$10.77	$9.22
Income Taxes	-	-	-	$1.10	$2.21	$3.69	$7.25	-$0.88	$0.24	$1.99	$2.77	$1.92	$2.02
Results of Operations	-	-	-	$2.06	$4.13	$17.18	$12.47	-$4.07	$1.10	$9.15	$12.77	$8.85	$7.20

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Matador Resources (MTDR - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	39.8	34.2	35.4	41.9	75.9	83.6	104.6	129.6	105.9	87.1
Liquids Production (b/d)	-	-	-	422	3,326	5,844	9,096	12,307	13,962	21,510	30,523	21,998	17,479
Total Production (boe/d)	-	-	-	7,048	9,024	11,741	16,084	24,956	27,889	38,936	52,126	39,650	31,998
% Gas Production	-	-	-	94%	63%	50%	43%	51%	50%	45%	41%	45%	45%
% Oil Production	-	-	-	6%	37%	50%	57%	49%	50%	55%	59%	55%	55%
Proven Reserves:													
Gas Reserves (bcf)	-	-	-	170.4	80.0	212.2	267.1	236.9	292.6	396.2	551.5	413.4	348.8
Oil Reserves (mmbbls)	-	-	-	3.8	10.5	16.4	24.2	45.6	57.0	86.7	123.4	89.0	67.4
Total Proven Reserves (mmboe)	-	-	-	32.2	23.8	51.7	68.7	85.1	105.8	152.8	215.3	157.9	125.5
% Gas Reserves	-	-	-	88%	56%	68%	65%	46%	46%	43%	43%	44%	46%
% Oil Reserves	-	-	-	12%	44%	32%	35%	54%	54%	57%	57%	56%	54%
Proven Reserve Life Index	-	-	-	12.5	7.2	12.1	11.7	9.3	10.4	10.7	11.3	10.8	10.7
Proven Reserve Additions:	-	-	-										
Gas Additions (bcf)	-	-	-	57.5	-77.9	145.1	70.2	-2.5	86.2	141.7	202.6	430.5	498.3
Oil Additions (mmbbls)	-	-	-	3.8	7.9	8.0	11.1	26.0	16.4	37.6	47.8	101.8	138.9
Total Additions (mmboe)	-	-	-	13.4	-5.1	32.2	22.8	25.5	30.8	61.2	81.6	173.6	222.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	13.4	12.9	19.2	23.9	39.1	42.0	45.2	69.6	156.8	219.9
Acquisitions	-	-	-	0.0	0.0	0.0	0.1	1.6	0.0	6.5	0.6	7.1	8.7
Dispositions	-	-	-	-	-	-	-	-	-	-	-	-	-
Revisions of Estimates	-	-	-	-0.1	-18.0	12.9	-1.2	-15.2	-11.2	9.6	11.3	9.7	(6.6)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	100.4%	-254.3%	59.7%	104.8%	153.2%	136.3%	73.8%	85.4%	90.3%	99.0%
Acquisitions	-	-	-	0.0%	0.0%	0.1%	0.4%	6.2%	0.0%	10.6%	0.7%	4.1%	3.9%
Dispositions	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	-	-	-	-0.4%	354.3%	40.2%	-5.1%	-59.4%	-36.3%	15.6%	13.9%	5.6%	-3.0%
Additions as % of Production:													
Gas	-	-	-	396.3%	-624.5%	1123.5%	458.5%	-8.9%	282.8%	371.2%	428.3%	371.2%	313.4%
Oil	-	-	-	2464.9%	651.2%	375.5%	335.6%	577.7%	322.4%	479.1%	429.0%	422.8%	435.5%
Total	-	-	-	520.2%	-154.3%	751.2%	389.0%	280.4%	302.6%	430.8%	428.7%	399.8%	380.1%
Additions as % of Reserves:													
Gas	-	-	-	33.8%	-97.4%	68.4%	26.3%	-1.0%	29.5%	35.8%	36.7%	104.1%	142.8%
Oil	-	-	-	100.1%	75.4%	49.0%	46.1%	56.9%	28.8%	43.4%	38.7%	114.4%	206.2%
Total	-	-	-	41.6%	-21.3%	62.2%	33.2%	30.0%	29.1%	40.1%	37.9%	109.9%	176.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	-	$108.7	$115.1	$99.1	$156.2	$122.5	$113.6	$167.2	$230.0	$510.7	$789.4
Development	-	-	-	$12.5	$190.9	$210.0	$373.0	$305.5	$158.1	$326.0	$467.4	$951.6	$1,630.0
Acquisitions	-	-	-	$41.5	$28.7	$64.5	$81.2	$270.4	$108.2	$259.9	$638.3	$1,006.4	$1,358.1
Dispositions	-	-	-	na	na	na	na	na	na	na	na	na	na
Total Expenditures	-	-	-	$162.7	$334.6	$373.5	$610.4	$698.4	$379.9	$753.2	$1,335.7	$2,468.7	$3,777.5
Expenditures as % of Total:													
Exploration	-	-	-	66.8%	34.4%	26.5%	25.6%	17.5%	29.9%	22.2%	17.2%	20.7%	20.9%
Development	-	-	-	7.7%	57.0%	56.2%	61.1%	43.7%	41.6%	43.3%	35.0%	38.5%	43.2%
Acquisitions	-	-	-	25.5%	8.6%	17.3%	13.3%	38.7%	28.5%	34.5%	47.8%	40.8%	36.0%
Cashflow (US$million)	-	-	-	$49.3	$114.9	$185.7	$257.5	$199.6	$132.3	$324.2	$544.1	$1,000.6	$1,457.6
Cashflow (US$/boe)	-	-	-	$19.15	$34.89	$43.33	$43.86	$21.91	$12.99	$22.81	$28.60	$23.05	$24.96
Recycle Ratio	-	-	-	1.6x	1.3x	2.2x	1.6x	0.8x	1.1x	1.9x	1.7x	1.6x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-	-	-	$9.05	-$60.19	$9.61	$23.26	$17.87	$8.82	$9.01	$8.61	$8.78	$11.35
Acquisition Costs	-	-	-	na	na	$2,275.80	$988.38	$170.11	na	$40.10	$1,070.96	$142.20	$155.22
All Sources (incl. revisions)	-	-	-	$12.16	-$65.83	$11.60	$26.73	$27.34	$12.33	$12.30	$16.37	$14.22	$17.02
Exploration & Development (excl. revisions)	-	-	-	$9.02	$23.67	$16.07	$22.12	$10.94	$6.47	$10.92	$10.01	$9.33	$11.00
Acquisition Costs	-	-	-	na	na	$2,275.80	$988.38	$170.11	na	$40.10	$1,070.96	$142.20	$155.22
All Sources (excl. revisions)	-	-	-	$12.10	$25.89	$19.40	$25.43	$17.15	$9.05	$14.58	$19.01	$15.06	$16.52

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Matador Resources (MTDR - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	5.26	12.10	13.93	14.40	10.29	9.75	8.84	8.89	9.07	9.80
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	5.29	4.49	4.93	5.56	5.58	5.53	4.74	3.72	4.48	4.76
F&D Costs (1-Year)	-	-	-	12.16	25.89	11.60	26.73	27.34	12.33	12.30	16.37	14.22	17.02
Return on Capital	-	-	-	9.68	11.72	8.88	19.80	16.02	8.06	8.33	11.70	9.69	11.46
Income Taxes	-	-	-	5.21	6.31	4.78	11.51	3.47	1.75	1.81	2.54	2.10	3.16
Breakeven Oil Price	**-**	**-**	**-**	**37.60**	**60.51**	**44.13**	**78.00**	**62.71**	**37.42**	**36.01**	**43.22**	**39.57**	**46.20**
Quality Differential	-	-	-	3.31	4.52	2.59	4.68	3.85	1.64	1.18	7.43	3.42	3.76
Required Brent Price	**-**	**-**	**-**	**40.90**	**65.04**	**46.72**	**82.69**	**66.56**	**39.06**	**37.19**	**50.65**	**42.98**	**49.95**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	18.94	26.03	22.14	20.08	15.24	14.05	11.70	12.05	12.38	13.56
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	19.05	9.66	7.84	7.76	8.27	7.96	6.27	5.05	6.11	6.59
F&D Costs (1-Year)	-	-	-	27.04	56.50	26.06	40.10	27.07	17.27	15.59	22.19	18.92	22.02
Return on Capital	-	-	-	25.30	29.86	15.38	23.70	16.52	11.67	10.67	16.06	13.01	14.32
Income Taxes	-	-	-	13.62	16.08	8.28	13.77	3.58	2.53	2.31	3.48	2.82	3.95
Breakeven Oil Price	**-**	**-**	**-**	**103.96**	**138.12**	**79.70**	**105.41**	**70.68**	**53.48**	**46.55**	**58.82**	**53.23**	**60.43**
Quality Differential	-	-	-	11.91	9.73	4.11	6.53	5.70	2.36	1.56	10.07	4.66	5.24
Required Brent Price	**-**	**-**	**-**	**115.87**	**147.86**	**83.81**	**111.94**	**76.38**	**55.84**	**48.11**	**68.89**	**57.90**	**65.68**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

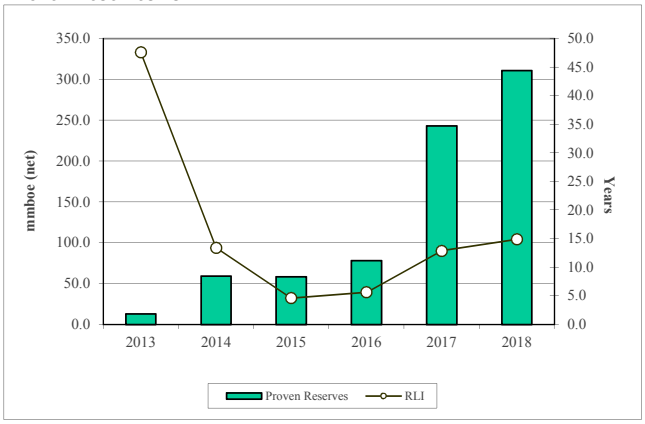
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	18.94	26.03	22.14	20.08	15.24	14.05	11.70	12.05	12.38	13.56
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	19.05	9.66	7.84	7.76	8.27	7.96	6.27	5.05	6.11	6.59
F&D Costs (1-Year)	-	-	-	37.70	69.54	60.59	47.41	76.37	26.80	25.21	40.81	32.15	43.32
Return on Capital	-	-	-	35.36	35.55	36.11	27.93	46.57	18.13	17.27	28.68	22.14	28.19
Income Taxes	-	-	-	19.04	19.14	19.44	16.24	10.10	3.93	3.75	6.22	4.80	7.77
Breakeven Oil Price	**-**	**-**	**-**	**130.08**	**159.92**	**146.12**	**119.42**	**156.54**	**70.87**	**64.20**	**92.80**	**77.58**	**99.43**
Quality Differential	-	-	-	11.91	9.73	4.11	6.53	5.70	2.36	1.56	10.07	4.66	5.24
Required Brent Price	**-**	**-**	**-**	**141.99**	**169.65**	**150.24**	**125.95**	**162.24**	**73.23**	**65.76**	**102.87**	**82.24**	**104.68**

Source: BMO Capital Markets, Company Reports

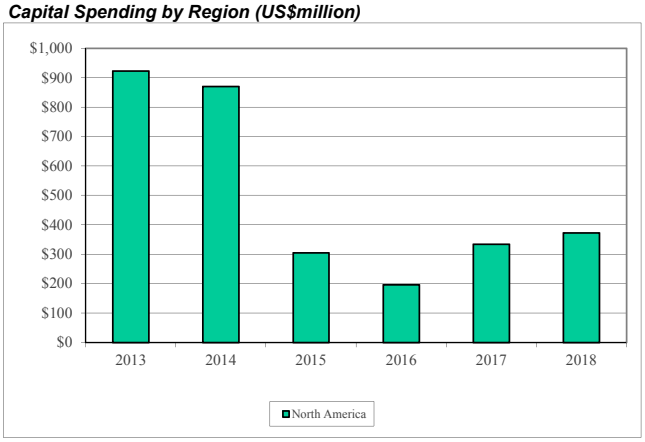
Montage Resources (MR - NYSE) US$, net

- Eclipse Resources changed its name to Montage Resources in February 2019.
- Montage reported results of operations of $2.94/boe in 2018 compared to results of $0.45/boe in 2017.
- One-year F&D costs came in at $4.20/boe, up from $4.91/boe (excluding revisions) last year. On a realized oil:gas price ratio basis, F&D costs were flat at $7.25/boe compared to $7.31/boe last year, while the costs for PD reserves improved to $9.62/boe from $11.30/boe the previous year.
- Montage's 2018 results imply a required Brent breakeven oil price of $48.76/boe on total proved reserves, while its PD costs suggest a breakeven oil price of $54.06/boe.
- The company reported ROCE of 4.5% in 2018.

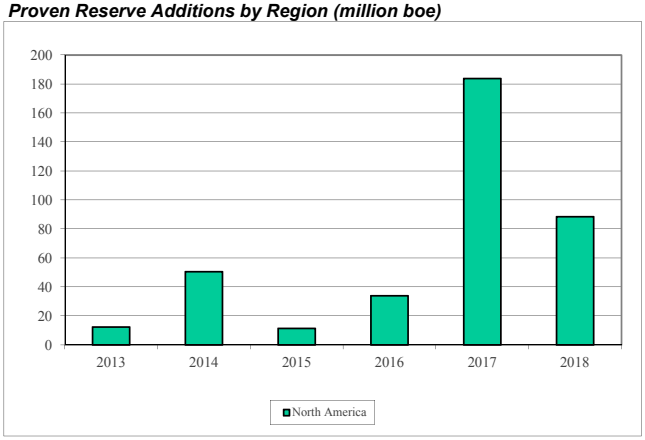
Proven Reserves vs RLI



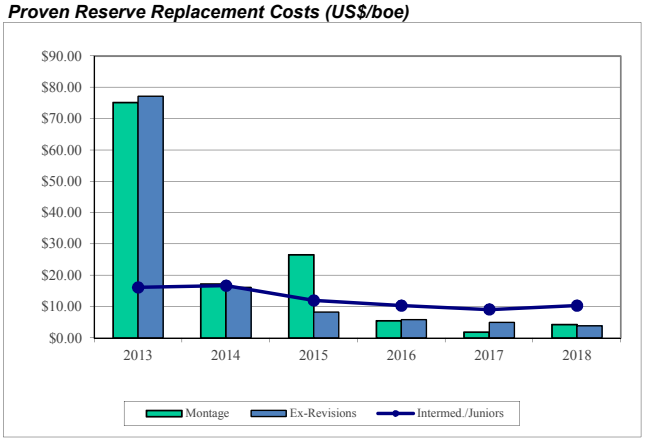
Capital Spending by Region (US$million)



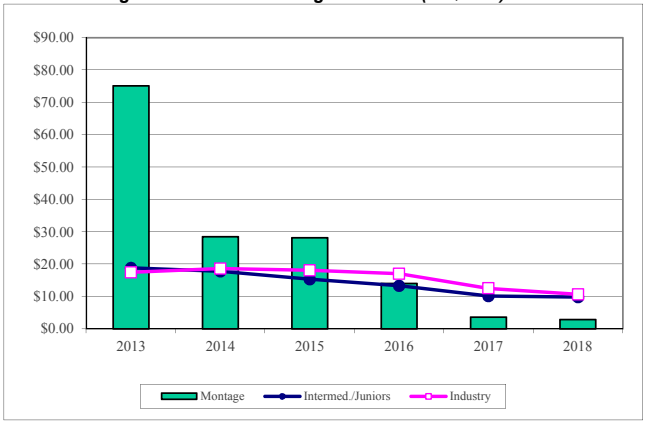
Proven Reserve Additions by Region (million boe)



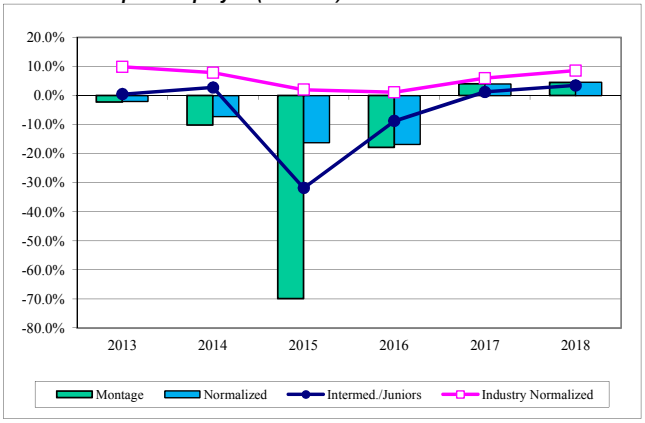
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

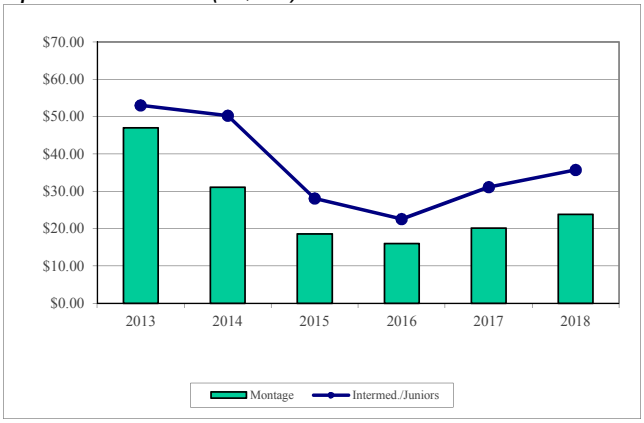
See pages F1 to F4 for analyst coverage.

Montage Resources (MR - NYSE)

US$/boe, net

North America

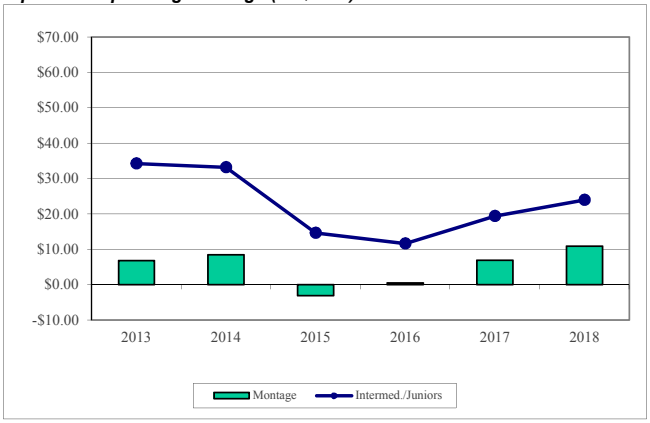
Upstream Net Revenue (US$/boe)



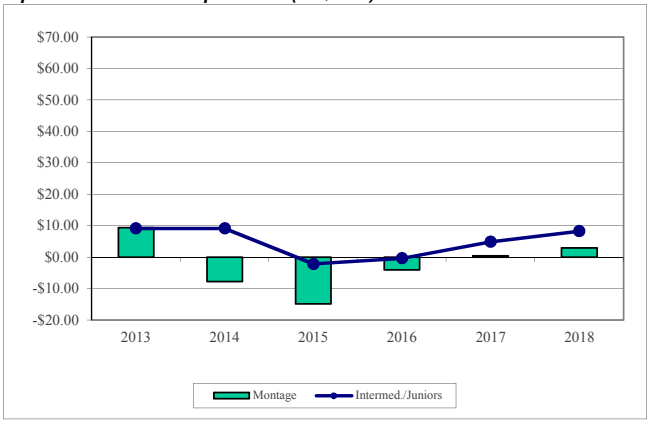
Production Costs (US$/boe)



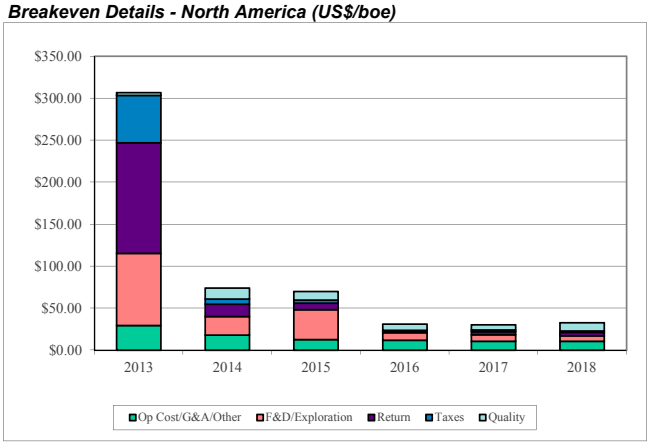
Upstream Operating Earnings (US$/boe)



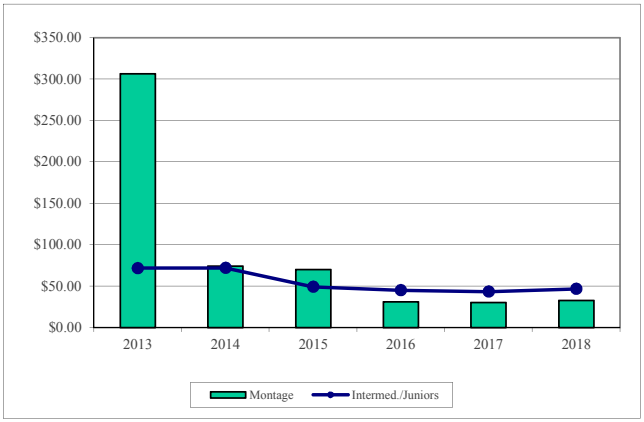
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Montage Resources (MR - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	13	138	235	223	380	499
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-		
Other	-	-	-	-	-	-	-	21	12	3	17
Total Revenue and Other Income	-	-	-	-	-	13	138	255	235	384	515
Crude Oil and Product Purchases	-	-	-	-							
Production and Transportation Expenses	-	-	-	-	-	3	34	111	123	154	177
Marketing Expenses	-	-	-	-	-	-	-	26	12	3	17
Exploration / Dry Hole Costs	-	-	-	-	-	3	21	116	53	50	50
General and Administrative	-	-	-	-	-	21	45	46	39	45	44
Depreciation, Depletion and Amortization	-	-	-	-	-	6	89	245	93	119	134
Interest, net	-	-	-	-	-	21	48	53	51	49	54
Other	-	-	-	-	-	2	11	699	66	(46)	19
Earnings Before Income Tax	-	-	-	-	-	(44)	(111)	(1,044)	(203)	9	19
Current Income Taxes	-	-	-	-	-	-	0	0	0	-	-
Future Income Taxes	-	-	-	-	-		72	(73)	1	-	-
Total Income Taxes	-	-	-	-	-	-	72	(72)	1	-	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	-	-	(44)	(183)	(971)	(204)	9	19
Discontinued Operations/Extraordinary Items	-	-	-	-						-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	(44)	(183)	(971)	(204)	9	19
Preferred Stock Dividends	-	-	-	-	-		-	-	-	-	
Net Earnings to Common Shareholders	-	-	-	-	-	(44)	(183)	(971)	(204)	9	19

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	(44)	(183)	(971)	(204)	9	19
Charges and Credits Not Impacting Cash	-	-	-	-	-	11	217	980	164	169	184
Other	-	-	-	-	-	23	(3)	27	71	(53)	(17)
Cash Flow From Operations	-	-	-	-	-	(9)	30	35	32	124	186
Change in Working Capital / Other	-	-	-	-	-	24	(7)	46	(25)	(12)	39
Net Cash From Operating Activities	-	-	-	-	-	15	23	80	6	113	225
Total Capital Expenditures	-	-	-	-	-	(254)	(749)	(477)	(169)	(294)	(277)
Acquisitions, net	-	-	-	-	-	(643)	16	40	79	1	10
Other	-	-	-	-	-	-	-	-	-	-	-
Net Cash From Investing Activities	-	-	-	-	-	(897)	(733)	(437)	(89)	(292)	(266)
Net Change in Debt	-	-	-	-	-	388	(1)	40	(24)	(0)	31
Net Change in Common Stock	-	-	-	-	-	-	550	440	124	(0)	(2)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-			
Cash Dividends Paid	-	-	-	-	-	-	-	-		-	-
Other	-	-	-	-	-	576	119	(6)	(1)	(4)	-
Net Cash From Financing Activities	-	-	-	-	-	964	668	474	100	(4)	30
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	82	(42)	117	17	(184)	(11)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	27	110	68	184	201	17
Cash and Equivalents, End of Year	-	-	-	-	-	110	68	184	201	17	6

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Montage Resources (MR - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	119	154	269	250	107	134
Net Property, Plant and Equipment	-	-	-	-	-	1,018	1,723	994	948	1,114	1,296
Other Assets						7	8	3	1	2	3
Total Assets	-	-	-	-	-	1,144	1,885	1,266	1,198	1,224	1,434
Total Current Liabilities	-	-	-	-	-	76	233	114	141	150	208
Long-term Debt	-	-	-	-	-	389	414	527	492	495	530
Deferred Income Taxes	-	-	-	-	-	-	67	-	-	-	-
Other Liabilities and Deferred Credits	-	-	-	-	-	11	19	5	18	7	8
Total Liabilities	-	-	-	-	-	476	732	646	651	651	746
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	-	-	1	2	2	3	3	3
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	722	1,391	1,829	1,959	1,968	2,065
Preferred Stock	-	-	-	-	-	-	-	-	(0)	-	-
Retained Earnings	-	-	-	-	-	(56)	(239)	(1,211)	(1,415)	(1,396)	(1,377)
Other / Comprehensive Income (Loss)	-	-	-	-	-	1	(1)	-	-	(2)	(3)
Total Shareholders' Equity	-	-	-	-	-	668	1,153	621	547	572	687
Total Liabilities and Shareholders' Equity	-	-	-	-	-	1,144	1,885	1,266	1,198	1,224	1,434
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**-2.2%**	**-10.1%**	**-69.9%**	**-17.8%**	**4.0%**	**4.5%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	-	-	$47.04	$31.15	$18.55	$16.00	$20.11	$23.88	$20.51	$20.82
Production Costs	-	-	-	-	-	$9.89	$7.62	$8.81	$8.84	$8.14	$8.49	$8.46	$8.47
Exploration	-	-	-	-	-	$10.99	$4.79	$9.19	$3.79	$2.66	$2.37	$2.84	$4.10
DD&A	-	-	-	-	-	$22.41	$20.17	$19.35	$6.67	$6.29	$6.43	$6.44	$9.61
G&A/Other	-	-	-	-	-	$19.34	$10.26	$3.67	$2.83	$2.36	$2.13	$2.39	$3.11
Pre-tax Results of Operations	-	-	-	-	-	-$15.60	-$11.68	-$22.47	-$6.13	$0.67	$4.46	$0.38	-$4.45
Income Taxes	-	-	-	-	-	-$25.03	-$3.97	-$7.64	-$2.08	$0.23	$1.52	$0.13	-$1.51
Results of Operations	-	-	-	-	-	$9.44	-$7.71	-$14.83	-$4.04	$0.45	$2.94	$0.25	-$2.94

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Montage Resources (MR - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	3.1	54.1	135.6	166.8	239.5	246.6	217.6	168.5
Liquids Production (b/d)	-	-	-	-	-	242	3,098	12,057	10,384	11,879	16,112	12,792	10,706
Total Production (boe/d)	-	-	-	-	-	753	12,121	34,649	38,192	51,788	57,208	49,063	38,792
% Gas Production	-	-	-	-	-	68%	74%	65%	73%	77%	72%	74%	72%
% Oil Production	-	-	-	-	-	32%	26%	35%	27%	23%	28%	26%	28%
Proven Reserves:													
Gas Reserves (bcf)	-	-	-	-	-	52.3	256.3	274.1	386.4	1,090.1	1,531.2	1,002.5	707.6
Oil Reserves (mmbbls)	-	-	-	-	-	4.4	16.6	12.5	13.8	61.4	55.6	43.6	32.0
Total Proven Reserves (mmboe)	-	-	-	-	-	13.1	59.3	58.1	78.2	243.1	310.8	210.7	149.9
% Gas Reserves	-	-	-	-	-	67%	72%	79%	82%	75%	82%	79%	79%
% Oil Reserves	-	-	-	-	-	33%	28%	21%	18%	25%	18%	21%	21%
Proven Reserve Life Index	-	-	-	-	-	47.6	13.4	4.6	5.6	12.9	14.9	11.1	10.3
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	-	50.5	223.7	67.2	173.2	791.1	531.1	1,495.4	1,786.4
Oil Additions (mmbbls)	-	-	-	-	-	3.9	13.4	0.3	5.2	51.9	0.1	57.1	70.8
Total Additions (mmboe)	-	-	-	-	-	12.3	50.6	11.5	34.0	183.8	88.6	306.4	368.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	-	9.9	53.9	37.0	32.7	67.5	93.0	193.2	284.1
Acquisitions	-	-	-	-	-	2.1	-	-	0.7	0.3	2.7	3.7	3.7
Dispositions	-	-	-	-	-	-	-	-	(1.8)	-	(0.0)	(1.8)	(1.8)
Revisions of Estimates	-	-	-	-	-	0.3	(3.2)	(25.5)	2.5	115.9	(7.1)	111.2	82.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	-	-	80.5%	106.4%	321.9%	96.0%	36.7%	105.0%	63.1%	77.1%
Acquisitions	-	-	-	-	-	16.8%	0.0%	0.0%	2.0%	0.2%	3.1%	1.2%	1.0%
Dispositions	-	-	-	-	-	0.0%	0.0%	0.0%	-5.2%	0.0%	0.0%	-0.6%	-0.5%
Revisions of Estimates	-	-	-	-	-	2.7%	-6.4%	-221.9%	7.2%	63.1%	-8.1%	36.3%	22.4%
Additions as % of Production:													
Gas	-	-	-	-	-	4514.4%	1132.2%	135.9%	284.4%	905.1%	590.1%	627.5%	580.9%
Oil	-	-	-	-	-	4385.6%	1180.6%	6.3%	136.4%	1197.3%	0.9%	407.9%	362.2%
Total	-	-	-	-	-	4473.0%	1144.6%	90.8%	244.2%	972.2%	424.2%	570.3%	520.5%
Additions as % of Reserves:													
Gas	-	-	-	-	-	96.5%	87.3%	24.5%	44.8%	72.6%	34.7%	149.2%	252.5%
Oil	-	-	-	-	-	89.1%	80.5%	2.2%	37.4%	84.5%	0.1%	131.0%	221.3%
Total	-	-	-	-	-	94.0%	85.4%	19.8%	43.5%	75.6%	28.5%	145.4%	245.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	-	-	-	$3.0	$21.2	$20.5	$20.1	$18.8	$21.0	$59.9	$101.6
Development	-	-	-	-	-	$258.8	$714.8	$259.7	$150.8	$257.1	$239.5	$647.4	$1,621.8
Acquisitions	-	-	-	-	-	$662.0	$134.2	$24.7	$24.8	$57.5	$111.9	$194.2	$353.1
Dispositions	-	-	-	-	-	na	na	na	na	na	na	na	na
Total Expenditures	-	-	-	-	-	$923.8	$870.1	$304.9	$195.7	$333.4	$372.4	$901.4	$2,076.5
Expenditures as % of Total:													
Exploration	-	-	-	-	-	0.00	0.02	0.07	0.10	0.06	0.06	0.07	0.05
Development	-	-	-	-	-	28.0%	82.1%	85.2%	77.1%	77.1%	64.3%	71.8%	78.1%
Acquisitions	-	-	-	-	-	71.7%	15.4%	8.1%	12.7%	17.2%	30.1%	21.5%	17.0%
Cashflow (US$million)	-	-	-	-	-	-$9.0	$30.5	$34.7	$31.6	$124.3	$185.9	$341.8	$407.0
Cashflow (US$/boe)	-	-	-	-	-	-$32.78	$6.89	$2.74	$2.27	$6.57	$8.90	$6.36	$5.75
Recycle Ratio	-	-	-	-	-	-0.4x	0.4x	0.1x	0.4x	3.6x	2.1x	2.2x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-	-	-	-	-	$25.59	$14.53	$24.40	$4.86	$1.50	$3.03	$2.32	$4.70
Acquisition Costs	-	-	-	-	-	$320.36	na	na	$36.78	$182.49	$41.11	$52.33	$95.13
All Sources (incl. revisions)	-	-	-	-	-	$75.11	$17.18	$26.56	$5.46	$1.81	$4.20	$2.93	$5.61
Exploration & Development (excl. revisions)	-	-	-	-	-	$26.44	$13.67	$7.58	$5.23	$4.09	$2.80	$3.66	$6.07
Acquisition Costs	-	-	-	-	-	$320.36	na	na	$36.78	$182.49	$41.11	$52.33	$95.13
All Sources (excl. revisions)	-	-	-	-	-	$77.18	$16.16	$8.25	$5.86	$4.91	$3.89	$4.58	$7.22

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Montage Resources (MR - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	9.89	7.62	8.81	8.84	8.14	8.49	8.46	8.47
Exploration Expense	-	-	-	-	-	10.99	4.79	9.19	3.79	2.66	2.37	2.84	4.10
G&A/Other	-	-	-	-	-	19.34	10.26	3.67	2.83	2.36	2.13	2.39	3.11
F&D Costs (1-Year)	-	-	-	-	-	75.11	17.18	26.56	5.46	4.91	4.20	4.86	11.66
Return on Capital	-	-	-	-	-	131.69	14.63	7.88	1.93	4.03	4.05	3.41	6.94
Income Taxes	-	-	-	-	-	56.44	6.27	3.38	0.83	1.73	1.73	1.46	2.97
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**303.47**	**60.75**	**59.48**	**23.68**	**23.82**	**22.97**	**23.42**	**37.25**
Quality Differential	-	-	-	-	-	3.14	13.30	10.37	7.43	6.42	9.50	7.78	$9.40
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**306.61**	**74.04**	**69.84**	**31.11**	**30.25**	**32.47**	**31.20**	**46.65**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	20.49	14.80	11.33	12.89	12.96	12.16	12.62	12.46
Exploration Expense	-	-	-	-	-	22.77	9.30	11.82	5.52	4.23	3.40	4.24	6.03
G&A/Other	-	-	-	-	-	40.08	19.93	4.72	4.12	3.75	3.05	3.57	4.58
F&D Costs (1-Year)	-	-	-	-	-	157.17	33.03	39.83	8.53	7.31	7.25	7.70	19.19
Return on Capital	-	-	-	-	-	290.41	29.06	11.26	2.87	6.15	6.50	5.23	11.34
Income Taxes	-	-	-	-	-	124.46	12.45	4.83	1.23	2.64	2.79	2.24	4.86
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**655.38**	**118.58**	**83.79**	**35.17**	**37.03**	**35.14**	**35.58**	**58.44**
Quality Differential	-	-	-	-	-	6.50	25.83	13.34	10.83	10.23	13.61	11.56	14.77
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**661.89**	**144.40**	**97.13**	**46.00**	**47.26**	**48.76**	**47.14**	**73.21**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	20.49	14.80	11.33	12.89	12.96	12.16	12.62	12.46
Exploration Expense	-	-	-	-	-	22.77	9.30	11.82	5.52	4.23	3.40	4.24	6.03
G&A/Other	-	-	-	-	-	40.08	19.93	4.72	4.12	3.75	3.05	3.57	4.58
F&D Costs (1-Year)	-	-	-	-	-	231.00	53.53	15.98	15.10	11.30	9.62	10.35	21.11
Return on Capital	-	-	-	-	-	403.49	47.39	4.48	5.08	9.45	8.56	7.03	12.10
Income Taxes	-	-	-	-	-	172.92	20.31	1.92	2.18	4.05	3.67	3.01	5.19
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**890.75**	**165.26**	**50.24**	**44.90**	**45.75**	**40.45**	**40.81**	**61.46**
Quality Differential	-	-	-	-	-	6.50	25.83	13.34	10.83	10.23	13.61	11.56	14.77
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**897.25**	**191.09**	**63.58**	**55.73**	**55.97**	**54.06**	**52.37**	**76.22**

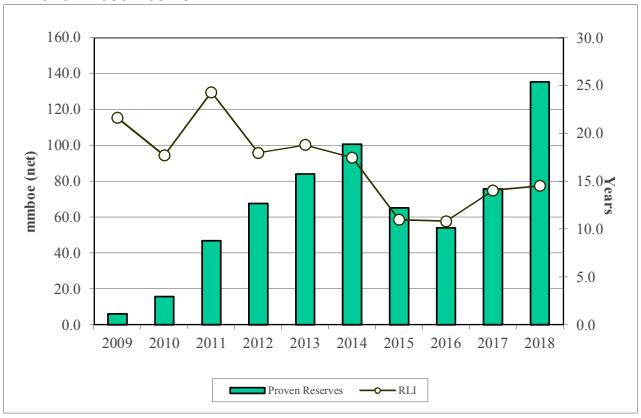
Source: BMO Capital Markets, Company Reports

Northern Oil & Gas (NOG - AMEX)

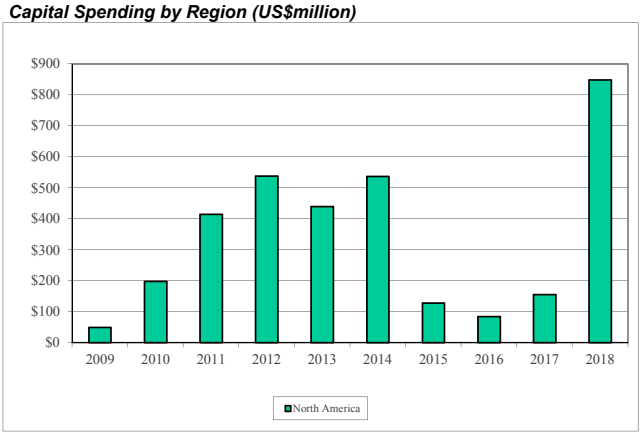
US$, net

- Northern reported strong results of operations of $22.67/boe in 2018 versus results of $11.88/boe in 2017.
- One-year F&D costs came in at $12.30/boe. On a realized oil:gas price ratio basis, F&D costs were reported at $13.39/boe, while the costs for PD reserves were $23.98/boe.
- Northern's 2018 results imply a required Brent breakeven oil price of $53.55/boe on total proved reserves, and $75.76/boe on PD reserves.
- The company reported ROCE of 26.7% in 2018.

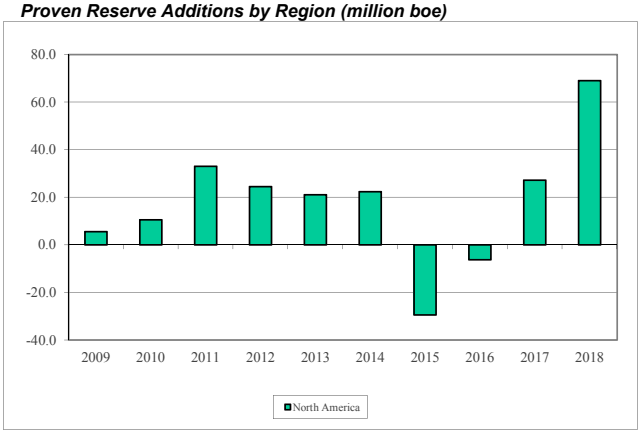
Proven Reserves vs RLI



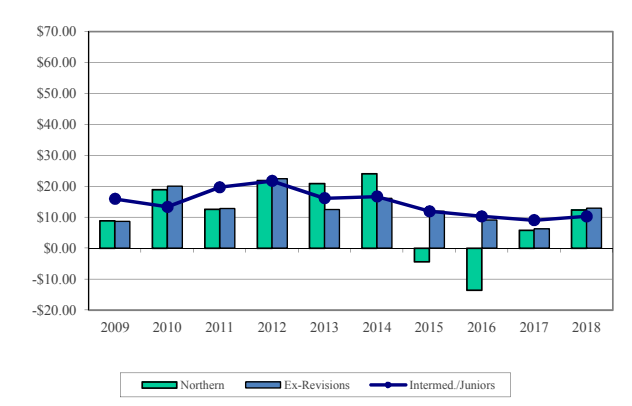
Capital Spending by Region (US$million)



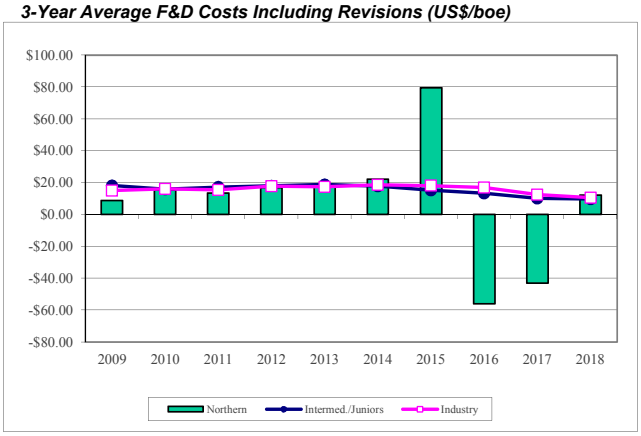
Proven Reserve Additions by Region (million boe)



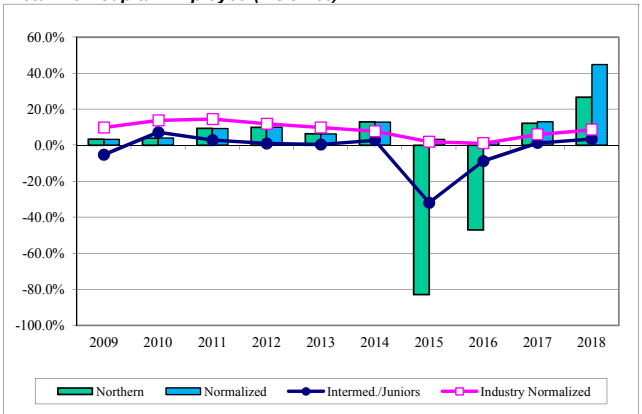
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



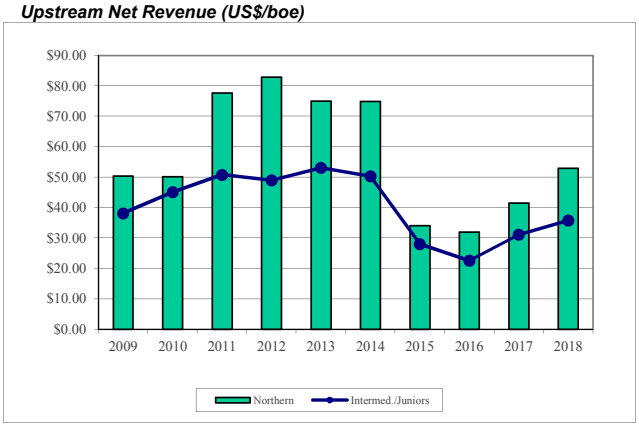
Source: BMO Capital Markets, Company Reports

Northern Oil & Gas (NOG - AMEX)

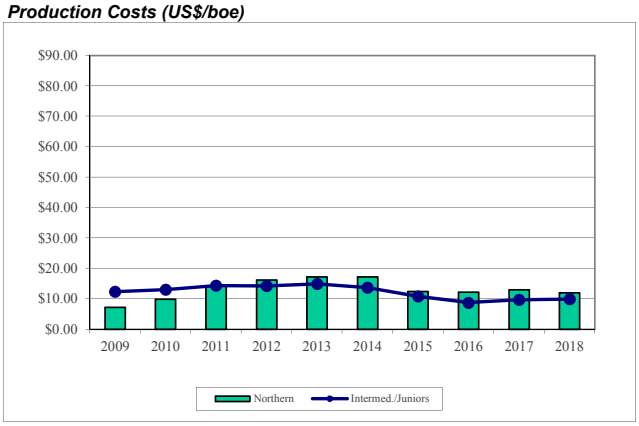
US$/boe, net

North America

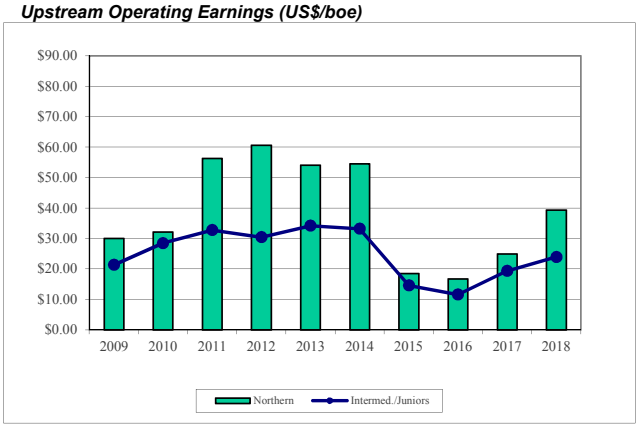
Upstream Net Revenue (US$/boe)



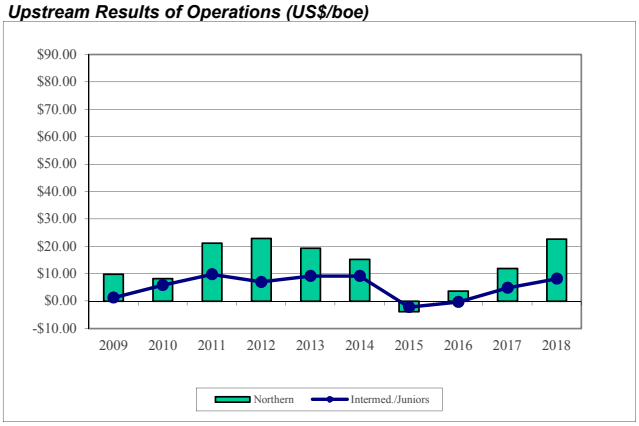
Production Costs (US$/boe)



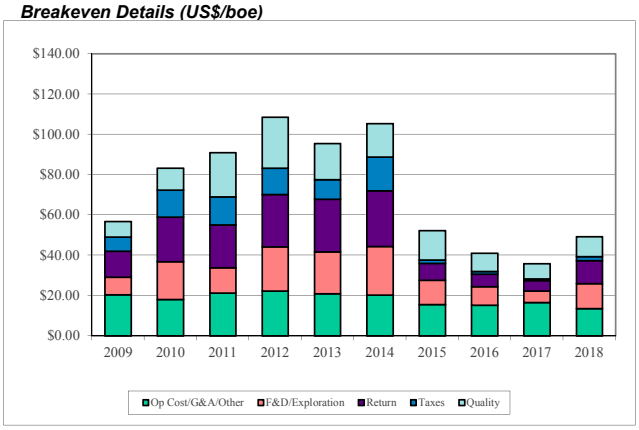
Upstream Operating Earnings (US$/boe)



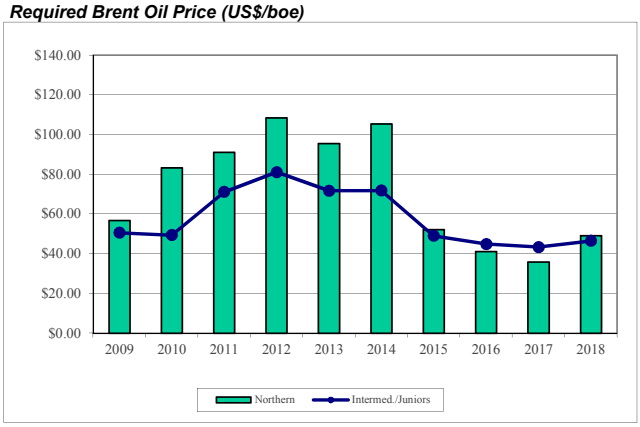
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Northern Oil & Gas (NOG - AMEX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	4	15	59	159	297	369	432	203	160	224	494
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-		
Other	1	(1)	(15)	(10)	15	(33)	163	72	(15)	(15)	185
Total Revenue and Other Income	4	14	45	149	312	336	595	275	145	209	679
Costs and Expenses:											
Crude Oil and Product Purchases											
Production and Transportation Expenses	0	2	9	27	61	77	99	74	61	70	112
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	2	4	7	14	23	17	18	19	15	19	15
Depreciation, Depletion and Amortization	1	4	17	41	99	124	173	138	61	60	120
Interest, net	-	0	0	0	14	33	42	58	64	70	86
Other	(0)	(0)	0	(0)	(0)	0	(1)	1,164	238	1	203
Earnings Before Income Tax	2	4	11	67	115	85	263	(1,178)	(295)	(11)	144
Income Taxes:											
Current Income Taxes	-	-	-	-	0	(0)	3	(0)	(1)	(115)	(104)
Future Income Taxes	(1)	1	4	27	43	32	96	(202)	-	114	104
Total Income Taxes	(1)	1	4	27	43	32	99	(202)	(1)	(2)	(0)
Minority Interest	-	-	-							-	-
Earnings From Continuing Operations	2	3	7	41	72	53	164	(975)	(293)	(9)	144
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	2	3	7	41	72	53	164	(975)	(293)	(9)	144
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	2	3	7	41	72	53	164	(975)	(293)	(9)	144

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2,017	2,018
Operating Activities:											
Net Earnings	2	3	7	41	72	53	164	(975)	(293)	(9)	144
Charges and Credits Not Impacting Cash	(0)	6	21	68	142	156	269	1,099	298	59	120
Other	0	2	19	3	(1)	28	(167)	99	86	30	6
Cash Flow From Operations	2	11	47	112	213	237	265	223	90	80	270
Change in Working Capital / Other	0	(1)	26	(27)	(14)	(15)	9	24	11	(7)	(26)
Net Cash From Operating Activities	3	10	73	85	199	223	274	247	102	73	244
Total Capital Expenditures	(38)	(49)	(192)	(346)	(532)	(360)	(477)	(289)	(93)	(119)	(217)
Acquisitions, net	-	-	-	-	(0)	2	(0)	0	2	0	(258)
Other	(3)	(23)	(16)	45						(0)	-
Net Cash From Investing Activities	(40)	(72)	(208)	(301)	(532)	(359)	(477)	(289)	(91)	(119)	(475)
Financing Activities:											
Net Change in Debt	2	(2)	(2)	69	354	162	223	42	(6)	143	13
Net Change in Common Stock	27	69	282	0	(2)	(26)	(16)	(0)	(1)	(1)	119
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	(2)
Net Cash From Financing Activities	29	67	280	70	341	128	206	36	(8)	142	130
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(9)	5	146	(146)	7	(8)	4	(6)	3	96	(100)
Cash and Equivalents, Beginning of Year	10	1	6	152	6	13	6	9	3	6	102
Cash and Equivalents, End of Year	1	6	152	6	13	6	9	3	6	102	2

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Northern Oil & Gas (NOG - AMEX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2,017	2,018
Total Current Assets	-	42	233	81	94	104	226	129	47	153	228
Net Property, Plant and Equipment	-	92	275	644	1,083	1,397	1,762	589	376	473	1,203
Other Assets	-	1	1	1	13	18	39	16	8	6	72
Total Assets	-	136	510	726	1,191	1,520	2,027	734	432	632	1,504
Liabilities and Stockholders' Equity											
Total Current Liabilities	-	9	60	120	100	194	286	78	77	124	232
Long-term Debt	-	1	-	70	424	585	806	848	833	979	830
Deferred Income Taxes	-	1	9	36	76	117	158	-	-	-	-
Other Liabilities and Deferred Credits	-	2	6	4	4	4	6	6	9	20.195	12.051
Total Liabilities	-	12	74	229	605	900	1,256	932	919	1,123	1,074
Minority Interests	-	-	-							-	-
Stockholders' Equity											
Common Shares	-	0	0	0	0	0	0	0	0	0	0
Contributed Surplus (Paid-in Capital)	-	125	428	448	465	446	433	440	444	450	1,226
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	1	8	48	121	174	337	(638)	(931)	(941)	(797)
Other / Comprehensive Income (Loss)	-	(2)	(1)	(0)	-	-	-	-	-	-	-
Total Shareholders' Equity	-	124	435	497	586	620	771	(198)	(487)	(491)	430
Total Liabilities and Shareholders' Equity	-	136	510	726	1,191	1,520	2,027	734	432	632	1,504
Return on Capital Employed (ROCE)	-	**3.3%**	**4.0%**	**9.4%**	**10.0%**	**6.4%**	**13.0%**	**-82.9%**	**-47.0%**	**12.2%**	**26.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

											Weighted Average	
	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America												
Net Revenue	$50.36	$50.13	$77.59	$82.86	$75.03	$74.87	$34.09	$31.96	$41.46	$52.95	$44.49	$48.09
Production Costs	$7.28	$9.86	$14.20	$16.19	$17.16	$17.24	$12.39	$12.25	$13.02	$12.00	$12.34	$13.25
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$15.05	$18.99	$21.20	$26.31	$27.79	$29.99	$23.18	$12.26	$11.01	$12.84	$12.19	$17.53
G&A/Other	$13.05	$8.10	$7.08	$6.02	$3.70	$3.05	$3.20	$2.95	$3.52	$1.56	$2.45	$2.70
Pre-tax Earnings	$14.97	$13.17	$35.11	$34.34	$26.37	$24.59	-$4.69	$4.50	$13.91	$26.55	$17.50	$14.61
Income Taxes	$5.19	$4.97	$13.94	$11.44	$7.10	$9.29	-$0.81	$0.77	$2.03	$3.87	$2.58	$3.17
Results of Operations	$9.78	$8.19	$21.17	$22.91	$19.27	$15.30	-$3.88	$3.73	$11.88	$22.67	$14.92	$11.43

Source: BMO Capital Markets, Company Reports

Northern Oil & Gas (NOG - AMEX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	0.1	0.6	2.2	4.8	7.0	10.1	12.7	11.0	14.2	25.3	16.8	14.7
Liquids Production (b/d)	-	752	2,328	4,910	9,494	11,087	14,112	14,161	11,852	12,431	21,343	15,209	14,780
Total Production (boe/d)	-	774	2,435	5,275	10,302	12,261	15,794	16,285	13,691	14,800	25,555	18,015	17,225
% Gas Production	-	3%	4%	7%	8%	10%	11%	13%	13%	16%	16%	16%	14%
% Oil Production	-	97%	96%	93%	92%	90%	89%	87%	87%	84%	84%	84%	86%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	1.8	10.4	29.7	41.3	50.2	70.9	50.9	46.8	78.1	135.1	86.7	76.4
Closing Oil Reserves (mmbbls)	-	5.8	14.0	41.9	60.7	75.8	88.9	56.8	46.3	62.8	113.0	74.0	73.6
Closing Total Proven Reserves (mmboe)	-	6.1	15.7	46.8	67.6	84.2	100.7	65.3	54.1	75.8	135.5	88.5	86.3
% Gas Reserves	-	5%	11%	11%	10%	10%	12%	13%	14%	17%	17%	16%	15%
% Oil Reserves	-	95%	89%	89%	90%	90%	88%	87%	86%	83%	83%	84%	85%
Proven Reserve Life Index	-	21.6	17.7	24.3	18.0	18.8	17.5	11.0	10.8	14.0	14.5	13.1	13.6
Proven Reserve Additions:													
Gas Additions (bcf)	-	1.6	8.9	20.0	13.4	11.5	24.4	-15.4	0.0	36.5	66.2	102.6	111.7
Oil Additions (mmbbls)	-	5.4	9.0	29.7	22.3	19.1	18.3	-26.9	-6.2	21.1	58.0	72.8	64.1
Total Additions (mmboe)	-	5.6	10.5	33.0	24.5	21.0	22.3	-29.5	-6.2	27.2	69.0	89.9	82.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	5.7	9.9	32.2	24.0	35.2	33.3	10.7	8.4	24.8	33.2	66.5	110.5
Net Acquisitions	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.8	0.0	32.2	33.0	33.0
Revisions of Estimates	-	(0.1)	0.6	0.8	0.6	(14.2)	(11.0)	(40.2)	(15.4)	2.4	3.5	(9.5)	(60.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	101.7%	94.1%	97.7%	97.6%	167.4%	149.2%	-36.3%	-135.4%	91.3%	48.2%	73.9%	133.5%
Net Acquisitions	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-12.9%	0.0%	46.7%	36.7%	39.9%
Revisions of Estimates	-	-1.7%	5.9%	2.3%	2.4%	-67.4%	-49.2%	136.3%	248.3%	8.7%	5.1%	-10.6%	-73.4%
Additions as % of Production:													
Gas	-	3364.9%	3806.8%	2501.8%	756.3%	445.6%	663.9%	-330.7%	-1.0%	703.1%	717.3%	556.4%	417.1%
Oil	-	1953.3%	1062.3%	1656.0%	643.6%	472.8%	354.6%	-521.0%	-143.6%	464.5%	743.9%	437.2%	237.8%
Total	-	1992.7%	1182.9%	1714.6%	652.4%	470.2%	387.5%	-496.2%	-124.5%	502.7%	739.5%	455.8%	263.3%
Additions as % of Reserves:													
Gas	-	90.4%	85.4%	67.5%	32.4%	22.8%	34.5%	-30.2%	-0.1%	46.7%	49.0%	118.4%	146.2%
Oil	-	92.2%	64.5%	70.9%	36.7%	25.2%	20.5%	-47.4%	-13.4%	33.6%	51.3%	98.4%	87.2%
Total	-	92.1%	66.8%	70.5%	36.3%	25.0%	22.2%	-45.2%	-11.5%	35.8%	50.9%	101.6%	95.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Development	-	$18.7	$123.9	$302.6	$485.4	$389.5	$479.5	$116.3	$63.6	$139.5	$260.9	$464.1	$1,059.8
Net Acquisitions	-	$30.8	$74.5	$111.4	$52.1	$49.6	$57.4	$12.4	$20.8	$16.4	$587.6	$624.9	$694.7
Total Expenditures	-	$49.5	$198.5	$414.0	$537.5	$439.1	$536.9	$128.7	$84.5	$156.0	$848.5	$1,089.0	$1,754.5
Expenditures as % of Total:													
Exploration	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Development	-	37.8%	62.4%	73.1%	90.3%	88.7%	89.3%	90.4%	75.3%	89.5%	30.8%	42.6%	60.4%
Net Acquisitions	-	62.2%	37.6%	26.9%	9.7%	11.3%	10.7%	9.6%	24.7%	10.5%	69.2%	57.4%	39.6%
Cashflow (US$million)	-	$7.0	$24.2	$81.6	$185.1	$210.6	$261.1	$114.7	$79.9	$123.7	$331.3	$534.8	$910.6
Cashflow (US$/boe)	-	$24.84	$27.19	$42.37	$49.22	$47.06	$45.29	$19.30	$15.98	$22.90	$35.52	$27.11	$28.97
Recycle Ratio	-	2.8x	1.4x	3.4x	2.2x	2.3x	1.9x	-4.4x	-1.2x	4.0x	2.9x	2.2x	1.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	$3.33	$11.79	$9.17	$19.79	$18.51	$21.46	-$3.94	-$9.06	$5.14	$7.09	$8.15	$21.30
Net Acquisition Costs	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	-	$8.80	$18.88	$12.54	$21.91	$20.87	$24.03	-$4.36	-$13.58	$5.74	$12.30	$12.11	$21.20
Exploration & Development (excl. revisions)	-	$3.27	$12.52	$9.38	$20.26	$11.06	$14.39	$10.86	$7.55	$5.63	$7.85	$6.98	$9.59
Net Acquisition Costs	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	-	$8.65	$20.06	$12.84	$22.44	$12.46	$16.11	$12.02	$9.15	$6.29	$12.97	$10.95	$12.23

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Northern Oil & Gas (NOG - AMEX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	7.28	9.86	14.20	16.19	17.16	17.24	12.39	12.25	13.02	12.00	12.34	13.25
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	13.05	8.10	7.08	6.02	3.70	3.05	3.20	2.95	3.52	1.56	2.45	2.70
F&D Costs (1-Year)	-	8.80	18.88	12.54	21.91	20.87	24.03	12.02	9.15	5.74	12.30	9.07	12.65
Return on Capital	-	12.96	22.08	21.24	26.03	26.11	27.61	8.32	6.23	5.18	11.52	7.61	10.99
Income Taxes	-	6.88	13.39	13.98	13.00	9.62	16.76	1.73	1.29	0.88	1.97	1.32	3.05
Breakeven Oil Price	**-**	**48.97**	**72.32**	**69.04**	**83.15**	**77.47**	**88.69**	**37.66**	**31.88**	**28.34**	**39.35**	**32.79**	**42.65**
Quality Differential	-	7.72	10.95	21.98	25.33	17.96	16.65	14.54	9.16	7.46	9.81	8.81	11.53
Required Brent Price	**-**	**56.69**	**83.27**	**91.02**	**108.48**	**95.43**	**105.35**	**52.20**	**41.04**	**35.81**	**49.16**	**41.60**	**54.17**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	7.41	10.06	14.75	17.08	18.29	18.24	13.73	13.50	14.16	13.10	13.49	14.43
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	13.28	8.27	7.35	6.35	3.95	3.23	3.55	3.25	3.82	1.70	2.68	2.94
F&D Costs (1-Year)	-	9.07	20.16	13.26	23.32	22.16	26.53	13.27	10.26	6.47	13.39	10.04	13.99
Return on Capital	-	13.15	22.90	21.91	27.18	27.61	30.92	9.19	6.91	5.79	12.52	8.43	12.09
Income Taxes	-	6.98	13.89	14.42	13.57	10.17	18.76	1.91	1.43	0.99	2.14	1.46	3.35
Breakeven Oil Price	**-**	**49.89**	**75.28**	**71.70**	**87.50**	**82.18**	**97.68**	**41.65**	**35.36**	**31.23**	**42.85**	**36.09**	**46.81**
Quality Differential	-	10.11	11.71	30.06	26.83	22.04	17.62	16.10	10.10	8.11	10.71	9.64	12.53
Required Brent Price	**-**	**59.99**	**86.99**	**101.76**	**114.33**	**104.22**	**115.31**	**57.76**	**45.46**	**39.35**	**53.55**	**45.73**	**59.34**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	7.41	10.06	14.75	17.08	18.29	18.24	13.73	13.50	14.16	13.10	13.49	14.43
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	13.28	8.27	7.35	6.35	3.95	3.23	3.55	3.25	3.82	1.70	2.68	2.94
F&D Costs (1-Year)	-	19.27	42.05	38.57	31.49	48.29	27.55	28.62	30.92	12.53	23.98	22.48	24.72
Return on Capital	-	26.66	47.45	62.65	36.84	60.50	31.60	19.82	20.92	11.21	22.44	18.75	21.39
Income Taxes	-	14.15	28.78	41.24	18.39	22.29	19.18	4.11	4.34	1.91	3.83	3.25	5.93
Breakeven Oil Price	**-**	**80.77**	**136.61**	**164.56**	**110.14**	**153.31**	**99.80**	**69.83**	**72.93**	**43.63**	**65.05**	**60.64**	**69.42**
Quality Differential	-	10.11	11.71	30.06	26.83	22.04	17.62	16.10	10.10	8.11	10.71	9.64	12.53
Required Brent Price	**-**	**90.87**	**148.32**	**194.63**	**136.97**	**175.35**	**117.42**	**85.93**	**83.03**	**51.75**	**75.76**	**70.28**	**81.95**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

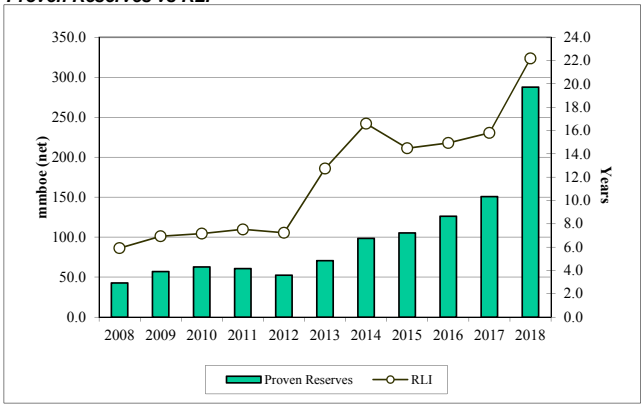
NuVista Energy Ltd. (NVA - TSX)

US$, net

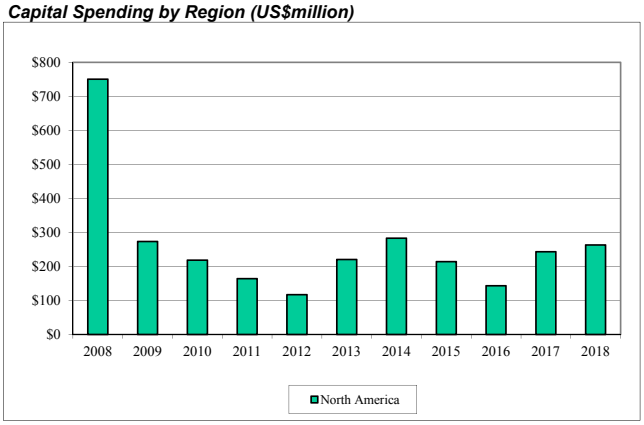
- NuVista reported results of operations of $6.20/boe in 2018 versus results of $4.60/boe in 2017.
- One-year F&D costs improved to $4.02/boe from $5.81/boe last year. On a realized oil:gas price ratio basis, F&D costs came in lower at $8.98/boe compared to $10.00/boe while costs for PD reserves were $11.17/boe in 2018, down from $19.33/boe the previous year.
- NuVista's 2018 operations imply a required Brent breakeven oil price of $58.73/boe, while PD costs suggest a breakeven oil price of $64.20/boe.
- The company reported a return on capital of 10.8% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

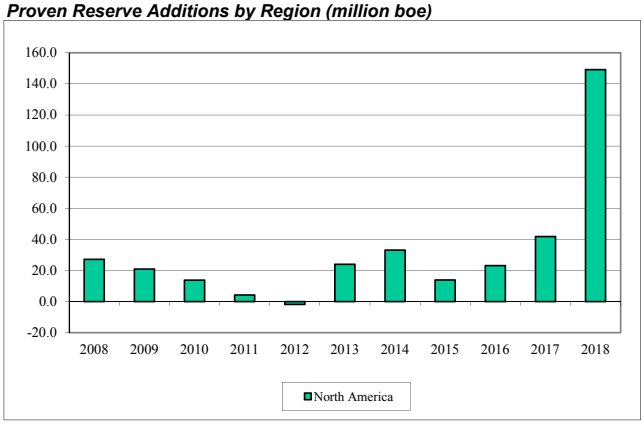
Proven Reserves vs RLI



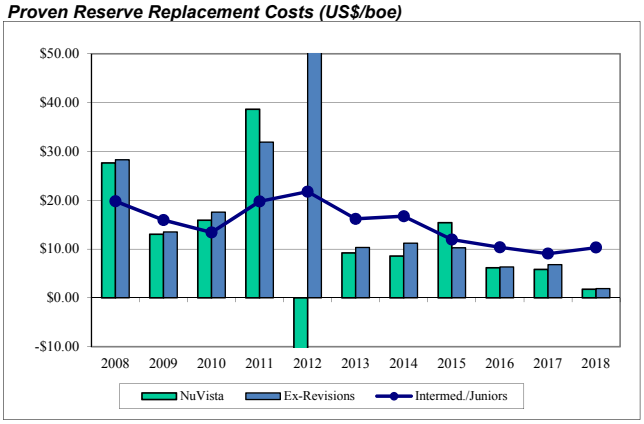
Capital Spending by Region (US$million)



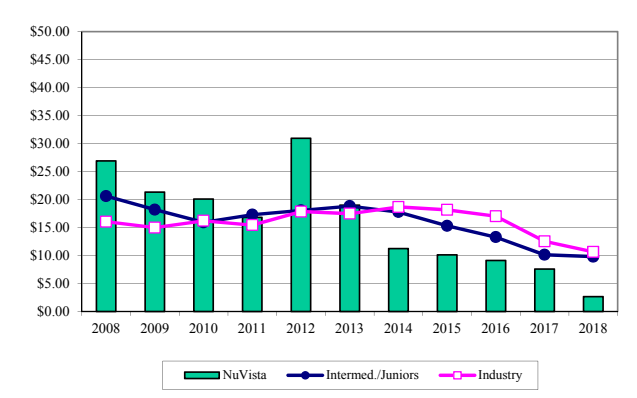
Proven Reserve Additions by Region (million boe)



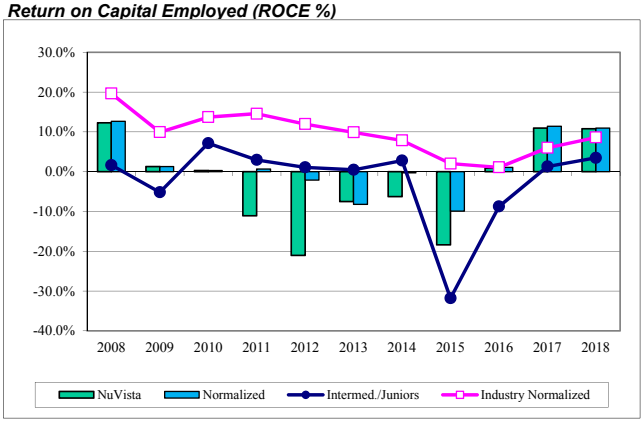
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

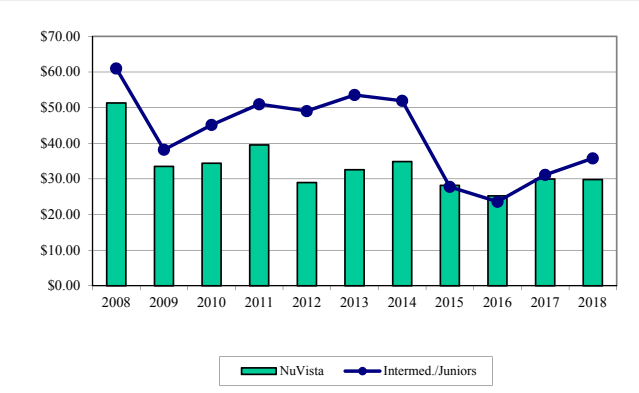
See pages F1 to F4 for analyst coverage.

NuVista Energy Ltd. (NVA - TSX)

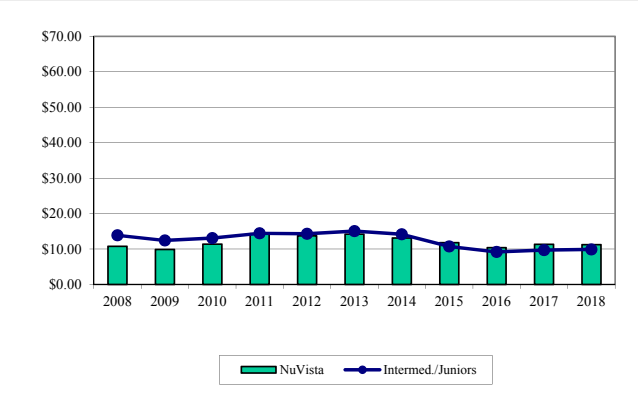
US$/boe, net

North America

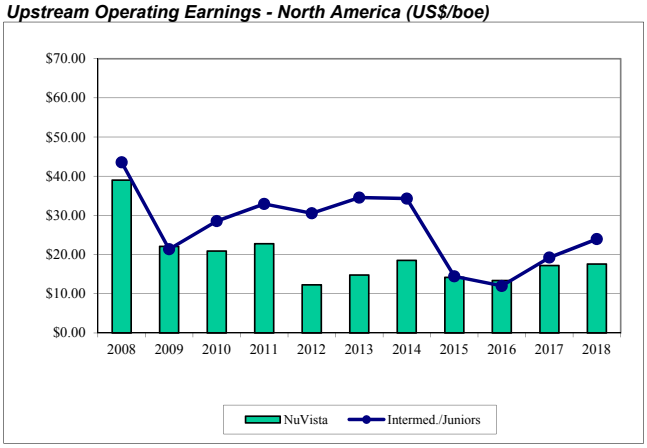
Upstream Net Revenue - North America (US$/boe)



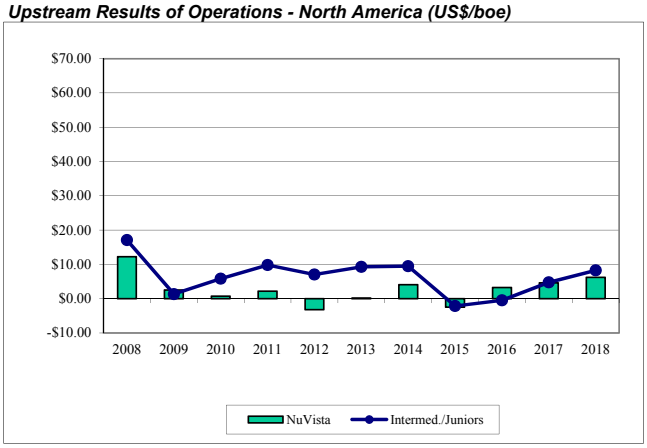
Production Costs - North America (US$/boe)



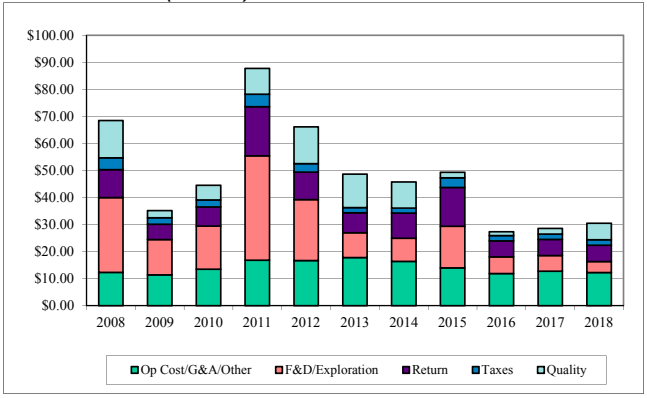
Upstream Operating Earnings - North America (US$/boe)



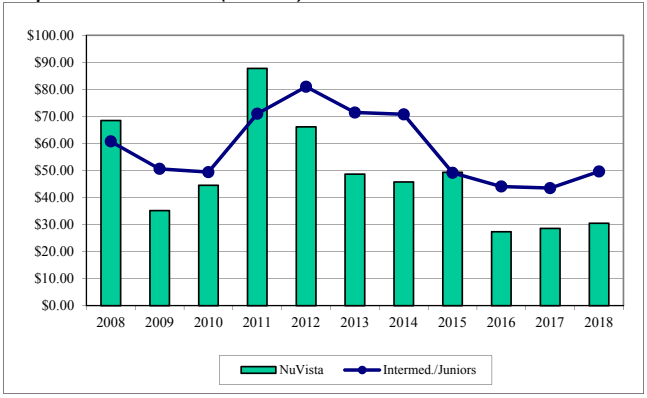
Upstream Results of Operations - North America (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

NuVista Energy Ltd. (NVA - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	376	266	307	330	214	187	215	171	193	282	416
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	11	(8)	(8)	(21)	11	(12)	41	17	(5)	28	42
Total Revenue and Other Income	387	258	299	309	225	175	256	188	188	310	459
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	77	81	100	115	100	79	78	86	88	108	146
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	11	13	19	20	21	20	19	16	13	13	14
Depreciation, Depletion and Amortization	155	152	175	161	119	81	81	126	76	106	120
Interest, net	15	12	17	17	12	8	8	7	9	10	23
Other	10	7	7	177	227	62	134	84	5	13	8
Earnings Before Income Tax	119	(6)	(19)	(182)	(255)	(74)	(64)	(130)	(2)	59	148
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	35	(9)	(5)	(37)	(60)	(15)	(11)	5	(1)	(13)	43
Total Income Taxes	35	(9)	(5)	(37)	(60)	(15)	(11)	5	(1)	(13)	43
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	83	2	(14)	(145)	(195)	(59)	(53)	(135)	(1)	73	105
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	83	2	(14)	(145)	(195)	(59)	(53)	(135)	(1)	73	105
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	83	2	(14)	(145)	(195)	(59)	(53)	(135)	(1)	73	105

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	83	2	(14)	(145)	(195)	(59)	(53)	(135)	(1)	73	105
Charges and Credits Not Impacting Cash	190	143	170	300	279	59	123	195	77	92	163
Other	(9)	22	9	11	(21)	64	22	20	21	(16)	(75)
Cash Flow From Operations	265	167	165	166	62	65	92	80	96	149	194
Change in Working Capital / Other	(46)	1	(2)	(4)	(3)	16	(14)	8	(0)	25	0
Net Cash From Operating Activities	219	169	163	162	59	81	78	87	96	173	194
Total Capital Expenditures	(189)	(273)	(201)	(159)	(116)	(218)	(283)	(214)	(143)	(243)	(263)
Acquisitions, net	-	-	(18)	38	237	27	33	16	55	2	(478)
Other	5	(6)	13	13	(3)	22	(21)	5	(0)	(37)	26
Net Cash From Investing Activities	(184)	(279)	(206)	(108)	118	(169)	(271)	(193)	(88)	(279)	(715)
Net Change in Debt	(120)	26	52	(151)	(270)	(19)	156	19	(98)	97	215
Net Change in Common Stock	85	85	2	100	93	110	35	86	94	-	305
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	(11)	(4)	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	4	-
Net Cash From Financing Activities	(35)	111	43	(54)	(177)	90	191	106	(4)	101	521
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	0	(0)	-	(0)	0	2	(2)	0	4	(4)	0
Cash and Equivalents, Beginning of Year	0	0	(0)	(0)	(0)	(0)	2	(0)	(0)	4	(0)
Cash and Equivalents, End of Year	0	(0)	(0)	(0)	(0)	2	(0)	(0)	4	(0)	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

NuVista Energy Ltd. (NVA - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	77	62	54	51	32	31	64	43	28	37	72
Net Property, Plant and Equipment	1,172	1,234	1,415	1,330	843	840	837	725	697	842	1,552
Other Assets	79	74	81	9	3	8	27	-	1	36	59
Total Assets	1,327	1,370	1,551	1,390	879	880	928	769	726	915	1,683
Total Current Liabilities	52	48	60	78	42	80	46	49	53	54	79
Long-term Debt	335	339	426	293	20	-	156	154	51	149	365
Deferred Income Taxes	130	118	125	71	11	-	-	-	-	-	84
Other Liabilities and Deferred Credits	44	54	65	183	150	113	103	72	51	46	71
Total Liabilities	562	560	676	625	222	192	305	276	155	249	599
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	564	620	696	800	883	963	932	893	956	984	939
Contributed Surplus (Paid-in Capital)	-	-	-	33	35	38	37	35	35	38	41
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	201	190	179	(68)	(262)	(314)	(346)	(435)	(421)	(357)	105
Other / Comprehensive Income (Loss)	-	1	1	-	-	-	-	-	-	-	-
Total Shareholders' Equity	765	811	875	764	656	687	623	493	571	666	1,084
Total Liabilities and Shareholders' Equity	1,327	1,370	1,551	1,390	879	880	928	769	726	915	1,683
Return on Capital Employed (ROCE)	**12.3%**	**1.3%**	**0.3%**	**-11.0%**	**-21.0%**	**-7.5%**	**-6.3%**	**-18.4%**	**0.9%**	**11.0%**	**10.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$51.34	$33.50	$34.41	$39.55	$28.98	$32.56	$34.86	$28.17	$25.23	$29.95	$29.84	$28.62	$29.38
Production Costs	$10.76	$9.87	$11.39	$14.32	$13.75	$14.21	$13.11	$11.82	$10.38	$11.35	$11.23	$11.04	$11.44
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$21.52	$18.49	$19.90	$20.01	$16.48	$14.57	$13.60	$17.32	$9.04	$11.07	$9.29	$9.77	$11.53
G&A / Other	$1.58	$1.53	$2.12	$2.48	$2.95	$3.59	$3.25	$2.16	$1.49	$1.40	$1.04	$1.28	$1.69
Pre-tax Results of Operations	$17.49	$3.62	$1.00	$2.74	-$4.19	$0.19	$4.90	-$3.12	$4.31	$6.13	$8.27	$6.53	$4.72
Income Taxes	$5.23	$1.09	$0.27	$0.55	-$0.98	$0.04	$0.82	-$0.62	$1.08	$1.53	$2.07	$1.63	$1.05
Results of Operations	$12.26	$2.53	$0.73	$2.19	-$3.21	$0.16	$4.08	-$2.50	$3.24	$4.60	$6.20	$4.90	$3.67

Source: BMO Capital Markets, Company Reports

NuVista Energy Ltd. (NVA - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	85.0	98.6	106.7	92.4	86.2	65.9	70.7	88.6	97.0	99.2	133.6	109.9	97.8
Liquids Production (b/d)	5,549	6,041	6,242	6,696	5,488	4,176	4,460	5,170	6,953	9,613	13,247	9,938	7,889
Total Production (boe/d)	19,722	22,478	24,024	22,094	19,856	15,160	16,240	19,933	23,112	26,141	35,518	28,257	24,189
% Gas Production	72%	73%	74%	70%	72%	72%	73%	74%	70%	63%	63%	65%	67%
% Oil Production	28%	27%	26%	30%	28%	28%	27%	26%	30%	37%	37%	35%	33%
Proven Reserves:													
Closing Gas Reserves (bcf)	184.9	258.5	275.1	265.1	231.8	304.3	428.4	462.1	546.0	622.6	1,176.4	781.7	647.1
Closing Oil Reserves (mmbbls)	11.8	13.8	16.9	16.5	13.7	19.8	27.0	28.3	35.0	47.0	91.6	57.9	45.8
Closing Total Proven Reserves (mmboe)	42.6	56.8	62.8	60.7	52.4	70.5	98.3	105.3	126.0	150.8	287.7	188.1	153.6
% Gas Reserves	72%	76%	73%	73%	74%	72%	73%	73%	72%	69%	68%	69%	70%
% Oil Reserves	28%	24%	27%	27%	26%	28%	27%	27%	28%	31%	32%	31%	30%
Proven Reserve Life Index	5.9	6.9	7.2	7.5	7.2	12.8	16.6	14.5	14.9	15.7	22.0	17.5	16.7
Proven Reserve Additions:													
Gas Additions (bcf)	113.6	99.7	50.7	14.6	-7.4	94.3	145.8	62.7	90.8	157.3	598.2	846.3	1,054.9
Oil Additions (mmbbls)	8.2	4.3	33.8	33.0	27.5	39.6	53.9	56.6	70.0	94.0	183.2	347.2	457.7
Total Additions (mmboe)	27.1	20.9	42.2	35.4	26.2	55.3	78.2	67.0	85.1	120.3	282.9	488.3	633.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	5.8	4.8	11.4	6.0	13.8	26.6	37.0	23.8	32.4	38.1	54.4	125.0	185.8
Net Acquisitions	20.8	15.4	1.0	-0.8	-13.7	-5.3	-11.8	-2.9	-9.9	-2.4	83.8	71.5	56.9
Revisions of Estimates	0.6	0.7	1.3	-0.9	-1.9	2.6	7.8	-7.0	0.6	6.1	11.0	17.7	18.5
Components as % of Total Additions:													
Extensions, Discoveries and Additions	21.2%	23.0%	27.1%	16.9%	52.8%	48.1%	47.3%	35.4%	38.1%	31.7%	19.2%	25.6%	29.3%
Net Acquisitions	76.6%	73.5%	2.4%	-2.4%	-52.4%	-9.6%	-15.0%	-4.3%	-11.6%	-2.0%	29.6%	14.6%	9.0%
Revisions of Estimates	2.2%	3.5%	3.1%	-2.5%	-7.4%	4.7%	10.0%	-10.5%	0.7%	5.0%	3.9%	3.6%	2.9%
Additions as % of Production:													
Gas	365.9%	277.0%	130.1%	43.4%	-23.5%	392.1%	565.4%	194.0%	256.6%	434.6%	1226.4%	703.2%	591.0%
Oil	405.7%	196.1%	1483.8%	1348.4%	1371.2%	2596.9%	3311.4%	2999.0%	2758.8%	2679.9%	3788.4%	3190.8%	3179.3%
Total	377.1%	255.2%	481.8%	438.9%	361.9%	999.5%	1319.5%	921.5%	1009.4%	1260.3%	2181.9%	1578.0%	1435.1%
Additions as % of Reserves:													
Gas	61.4%	38.6%	18.4%	5.5%	-3.2%	31.0%	34.0%	13.6%	16.6%	25.3%	50.8%	108.3%	163.0%
Oil	69.9%	31.4%	200.0%	200.0%	200.0%	200.0%	200.0%	200.0%	200.0%	200.0%	200.0%	600.0%	1000.0%
Total	63.8%	36.8%	67.3%	58.4%	50.1%	78.4%	79.5%	63.7%	67.6%	79.8%	98.3%	259.5%	412.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$46.0	$14.6	$30.0	$10.3	$4.8	$11.8	$8.9	$8.5	$4.6	$4.4	$6.3	$15.3	$32.8
Exploration & Development	$115.8	$59.1	$170.7	$148.8	$110.9	$206.1	$273.8	$205.5	$138.2	$238.7	$256.7	$633.6	$1,113.0
Net Acquisitions	$588.8	$199.3	$17.8	$4.6	$1.0	$2.1	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$750.5	$273.0	$218.5	$163.7	$116.7	$220.0	$282.8	$214.0	$142.8	$243.1	$263.0	$649.0	$1,145.7
Expenditures as % of Total:													
Land & Seismic	6.1%	5.3%	13.7%	6.3%	4.1%	5.4%	3.2%	4.0%	3.2%	1.8%	2.4%	2.4%	2.9%
Exploration & Development	15.4%	21.6%	78.1%	90.9%	95.0%	93.7%	96.8%	96.0%	96.8%	98.2%	97.6%	97.6%	97.1%
Net Acquisitions	78.4%	73.0%	8.2%	2.8%	0.9%	1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$265.1	$167.5	$165.0	$165.9	$75.7	$73.1	$99.1	$86.5	$104.4	$106.6	$106.7	$317.6	$503.2
Cashflow (US$/boe)	$36.82	$20.41	$18.82	$20.58	$10.45	$13.22	$16.71	$11.89	$12.38	$11.17	$8.23	$10.27	$11.40
Recycle Ratio	1.3x	1.6x	1.2x	0.5x	-0.2x	1.4x	2.0x	0.8x	2.0x	1.9x	4.7x	3.4x	2.6x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$25.42	$13.26	$15.78	$31.35	$9.73	$7.46	$6.31	$12.78	$4.32	$5.50	$4.02	$4.55	$5.61
Net Acquisition Costs	$28.33	$12.96	$17.60	-$5.46	-$0.07	-$0.40	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
All Sources (incl. revisions)	$27.65	$13.04	$15.91	$38.63	-$62.88	$9.19	$8.56	$15.41	$6.17	$5.81	$1.76	$3.03	$4.39
Exploration & Development (excl. revisions)	$28.12	$15.28	$17.56	$26.65	$8.35	$8.18	$7.64	$9.01	$4.40	$6.37	$4.83	$5.19	$6.17
Net Acquisition Costs	$28.33	$12.96	$17.60	-$5.46	-$0.07	-$0.40	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
All Sources (excl. revisions)	$28.29	$13.51	$17.56	$31.90	$1,468.64	$10.31	$11.20	$10.24	$6.34	$6.79	$1.90	$3.30	$4.72

Source: BMO Capital Markets, Company Reports

NuVista Energy Ltd. (NVA - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.76	9.87	11.39	14.32	13.75	14.21	13.11	11.82	10.38	11.35	11.23	11.04	11.44
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	1.58	1.53	2.12	2.48	2.95	3.59	3.25	2.16	1.49	1.40	1.04	1.28	1.69
F&D Costs (1-Year)	27.65	13.04	15.91	38.63	22.53	9.19	8.56	15.41	6.17	5.81	4.02	5.33	7.99
Return on Capital	10.31	5.65	7.10	18.16	10.18	7.40	9.31	14.32	5.92	5.94	6.07	6.18	8.69
Income Taxes	4.40	2.42	2.59	4.60	3.11	1.85	1.87	3.58	1.97	1.98	2.02	2.06	2.50
Breakeven Oil Price	**54.71**	**32.50**	**39.11**	**78.18**	**52.50**	**36.25**	**36.09**	**47.29**	**25.94**	**26.48**	**24.39**	**25.88**	**32.32**
Quality Differential	13.80	2.67	5.39	9.56	13.62	12.39	9.65	2.01	1.41	2.06	6.10	3.19	4.25
Required Brent Price	**68.50**	**35.17**	**44.50**	**87.74**	**66.13**	**48.63**	**45.74**	**49.30**	**27.35**	**28.54**	**30.49**	**29.08**	**36.57**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.50	14.05	19.45	27.35	31.71	28.73	24.13	18.10	14.70	19.67	20.17	18.28	18.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.13	2.18	3.63	4.74	6.80	7.26	5.99	3.31	2.11	2.43	1.88	2.11	2.79
F&D Costs (1-Year)	36.87	19.26	24.27	63.66	20.82	16.97	15.94	23.81	8.50	10.00	8.98	9.16	13.45
Return on Capital	13.70	8.16	10.97	28.64	9.17	13.83	17.34	22.38	8.10	9.56	12.55	10.06	14.28
Income Taxes	5.84	3.50	4.00	7.25	2.80	3.46	3.48	5.60	2.70	3.19	4.18	3.35	4.11
Breakeven Oil Price	**73.03**	**47.14**	**62.32**	**131.64**	**71.29**	**70.25**	**66.88**	**73.20**	**36.11**	**44.85**	**47.77**	**42.97**	**53.58**
Quality Differential	18.59	3.80	9.20	18.25	31.42	25.05	17.77	3.07	2.00	3.58	10.96	5.51	7.48
Required Brent Price	**91.62**	**50.94**	**71.52**	**149.89**	**102.72**	**95.30**	**84.65**	**76.27**	**38.11**	**48.43**	**58.73**	**48.48**	**61.06**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.50	14.05	19.45	27.35	31.71	28.73	24.13	18.10	14.70	19.67	20.17	18.28	18.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.13	2.18	3.63	4.74	6.80	7.26	5.99	3.31	2.11	2.43	1.88	2.11	2.79
F&D Costs (1-Year)	38.15	21.06	43.76	34.70	51.87	48.20	33.86	43.55	14.13	19.33	11.17	14.88	24.41
Return on Capital	14.16	9.01	19.79	15.55	22.84	39.44	36.83	40.97	13.42	18.48	15.02	16.16	25.92
Income Taxes	6.04	3.86	7.21	3.94	6.97	9.88	7.40	10.24	4.47	6.16	5.01	5.39	7.46
Breakeven Oil Price	**74.97**	**50.16**	**93.85**	**86.28**	**120.19**	**133.52**	**108.21**	**116.17**	**48.83**	**66.07**	**53.24**	**56.82**	**79.54**
Quality Differential	18.59	3.80	9.20	18.25	31.42	25.05	17.77	3.07	2.00	3.58	10.96	5.51	7.48
Required Brent Price	**93.56**	**53.95**	**103.05**	**104.53**	**151.61**	**158.57**	**125.98**	**119.24**	**50.83**	**69.65**	**64.20**	**62.33**	**87.01**

Source: BMO Capital Markets, Company Reports

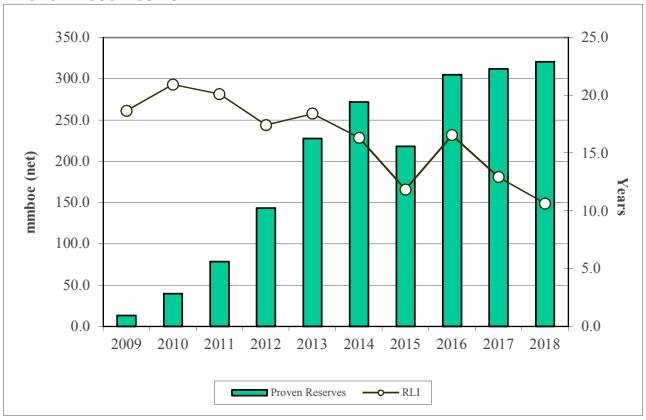
See pages F1 to F4 for analyst coverage.

Oasis Petroleum (OAS - NYSE)

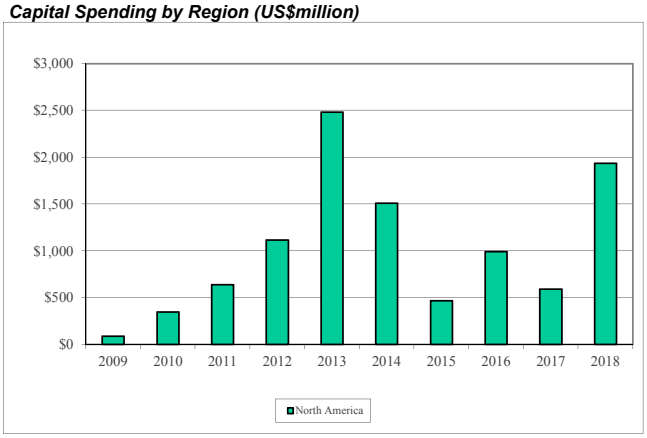
US$, net

- Oasis reported results of operations $16.04/boe in 2018 compared to $4.84/boe in 2017.
- One-year F&D costs rose to $35.56/boe from $18.11/boe last year. On a realized oil:gas price ratio basis, F&D costs jumped to $31.22/boe from $13.48/boe, while the costs for PD reserves increased to $54.03/boe from $22.28/boe.
- Oasis' 2018 operations imply a required Brent breakeven oil price of $86.19/boe on total proved reserves, while its PD costs suggest a Brent breakeven oil price of $128.98/boe.
- The company reported ROCE of 1.1% in 2018.

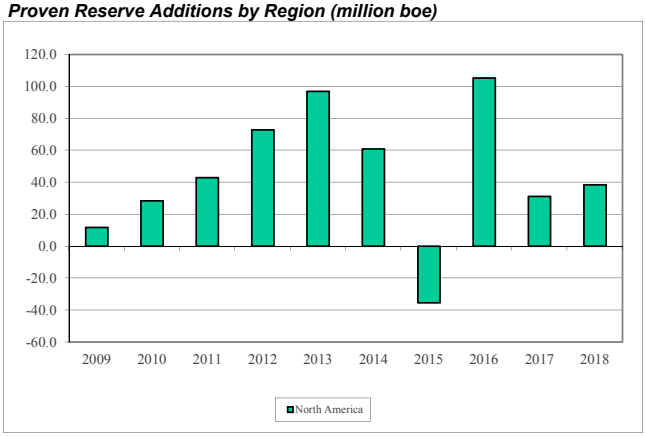
Proven Reserves vs RLI



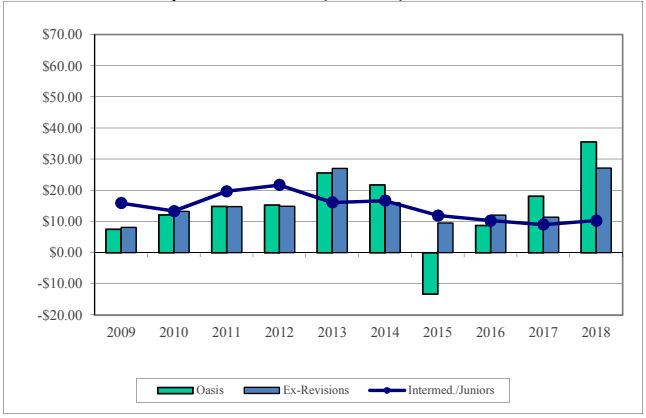
Capital Spending by Region (US$million)



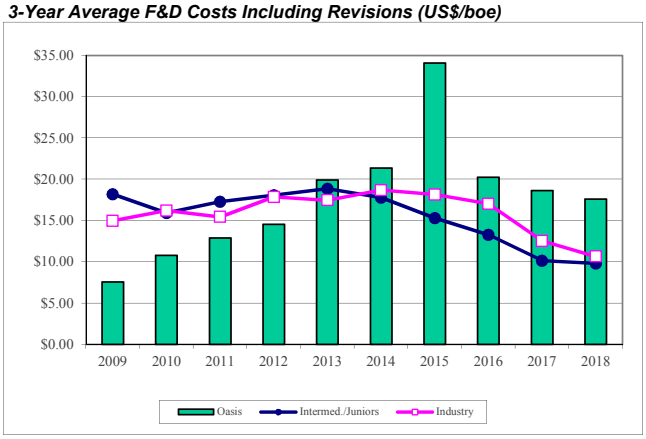
Proven Reserve Additions by Region (million boe)



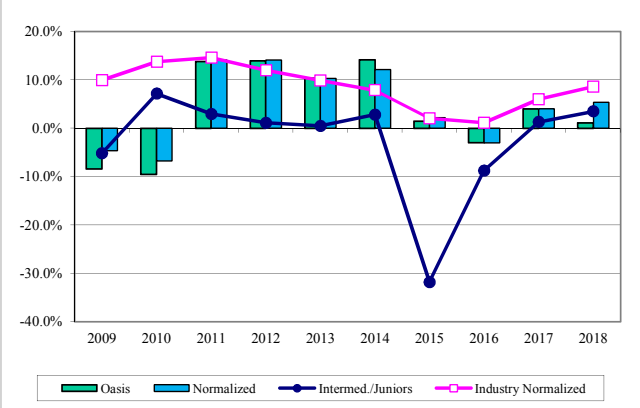
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

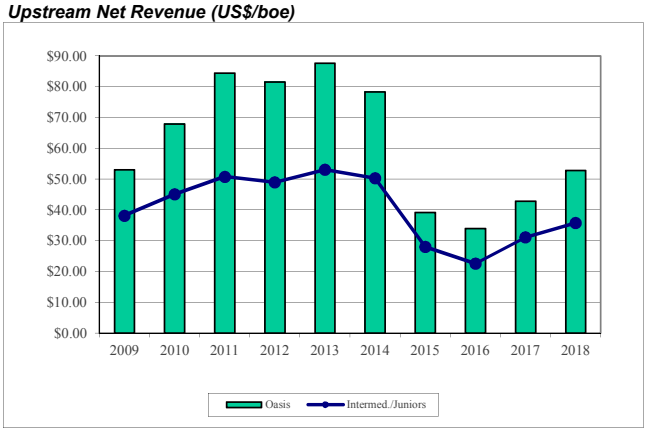
See pages F1 to F4 for analyst coverage.

Oasis Petroleum (OAS - NYSE)

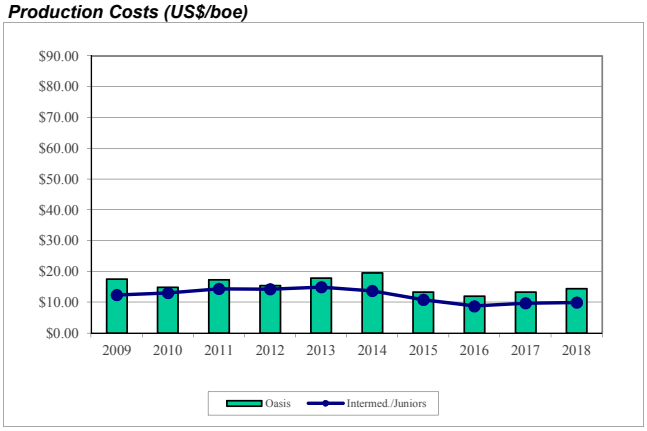
US$/boe, net

North America

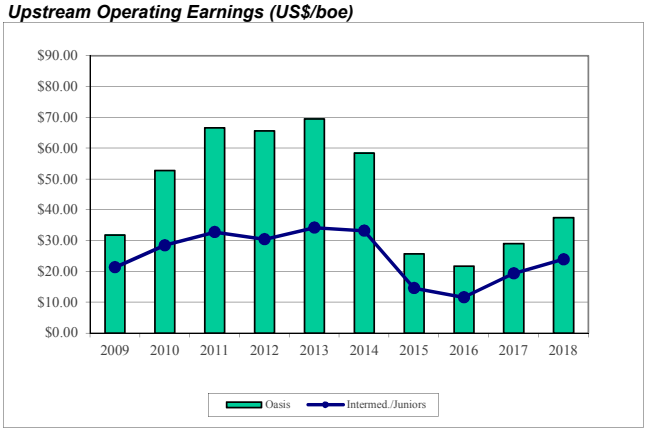
Upstream Net Revenue (US$/boe)



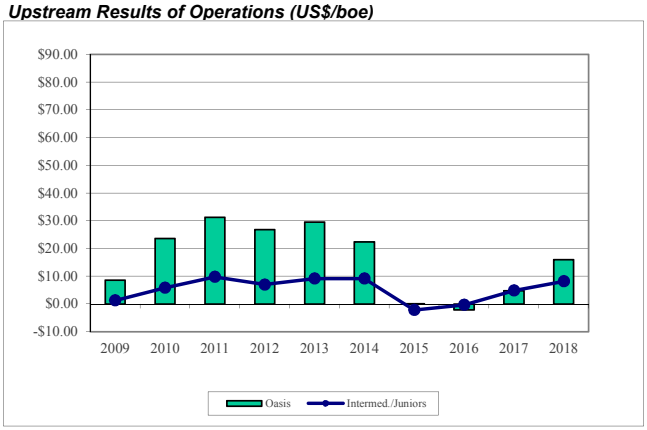
Production Costs (US$/boe)



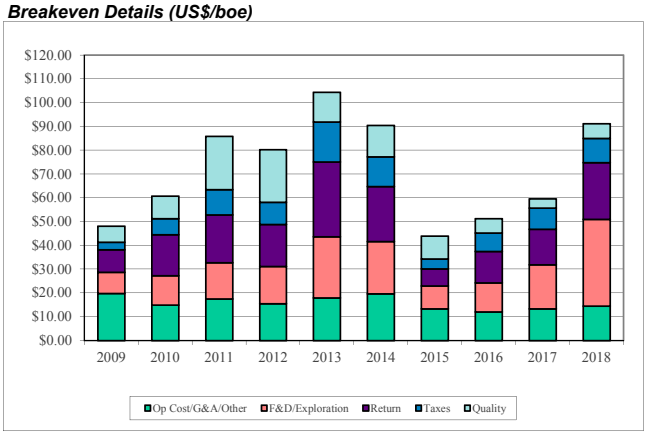
Upstream Operating Earnings (US$/boe)



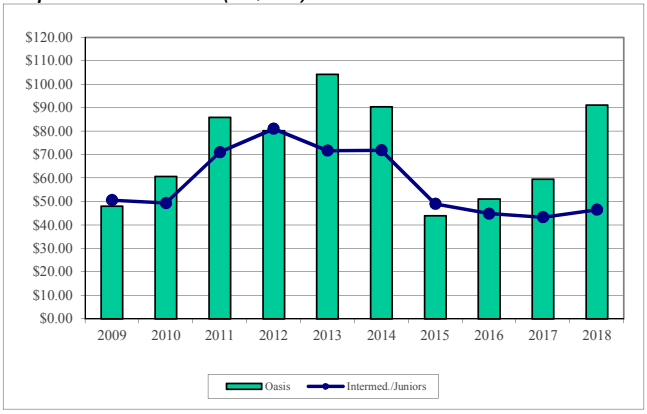
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Oasis Petroleum (OAS - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	38	129	330	670	1,084	1,304	722	636	1,123	1,590
Midstream / Downstream Revenue	-	-	-	-	16	58	86	68	69	126	180
Other	-	-	-	-	-	-	-	-	-	-	552
Total Revenue and Other Income	-	38	129	330	687	1,142	1,390	790	705	1,248	2,322
Crude Oil and Product Purchases										89	554
Production and Transportation Expenses	-	13	28	68	118	195	297	214	192	265	328
Marketing Expenses	-	-	-	-	9	26	29	32	40	56	107
Exploration / Dry Hole Costs	-	1	0	2	3	2	3	2	2	12	27
General and Administrative	-	9	28	29	57	75	92	92	93	92	121
Depreciation, Depletion and Amortization	-	17	38	75	207	307	412	485	476	531	636
Interest, net	-	1	1	30	70	107	158	150	140	147	159
Other	-	13	19	1	(24)	66	(417)	(129)	132	133	414
Earnings Before Income Tax	-	(15)	13	126	246	363	814	(56)	(372)	(76)	(25)
Current Income Taxes	-	-	-	-	0	0	0	(0)	-	(0)	0
Future Income Taxes	-	-	43	47	92	135	307	(16)	(129)	(203)	(6)
Total Income Taxes		-	43	47	92	135	308	(16)	(129)	(203)	(6)
Minority Interest	-	-	-	-	-	-	-	-	-	(4)	(16)
Earnings From Continuing Operations	-	(15)	(30)	79	153	228	507	(40)	(243)	124	(35)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(15)	(30)	79	153	228	507	(40)	(243)	124	(35)
Preferred Stock Dividends										-	-
Net Earnings to Common Shareholders	-	(15)	(30)	79	153	228	507	(40)	(243)	124	(35)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	(15)	(30)	79	153	228	507	(40)	(243)	124	(35)
Charges and Credits Not Impacting Cash	-	23	93	125	303	443	767	515	352	335	1,015
Other	-	3	18	4	(21)	52	(482)	(173)	140	118	31
Cash Flow From Operations	-	11	81	209	435	722	792	302	250	577	1,010
Change in Working Capital / Other	-	(5)	(32)	(33)	(43)	(25)	80	58	(22)	(69)	(14)
Net Cash From Operating Activities	-	6	50	176	392	698	873	360	228	508	996
Total Capital Expenditures	-	(47)	(227)	(613)	(1,053)	(894)	(1,354)	(820)	(426)	(647)	(1,149)
Acquisitions, net	-	(35)	(86)	-	-	(1,560)	279	(28)	(769)	(56)	(251)
Other	-	2	3	(16)	15	9	(2)	368	125	(11)	(213)
Net Cash From Investing Activities	-	(81)	(310)	(629)	(1,039)	(2,445)	(1,077)	(479)	(1,071)	(715)	(1,614)
Net Change in Debt	-	9	(37)	781	400	1,336	164	(362)	89	(218)	601
Net Change in Common Stock	-	105	400	(1)	(3)	313	(5)	460	764	430	38
Net Change in Preferred Stock	-	-	-	-	-	-	-	-			
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	(8)	(23)	(0)	(15)	(9)	(0)	(16)
Net Cash From Financing Activities	-	114	363	781	389	1,626	159	83	844	212	623
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	39	103	327	(257)	(122)	(46)	(36)	1	5	5
Cash and Equivalents, Beginning of Year	-	2	41	144	471	213	92	46	10	11	17
Cash and Equivalents, End of Year	-	41	144	471	213	92	46	10	11	17	22

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Oasis Petroleum (OAS - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	57	206	624	493	448	697	365	239	408	554
Net Property, Plant and Equipment	-	182	484	1,080	2,007	4,080	5,187	5,218	5,920	6,173	7,027
Other Assets	-	1	2	24	30	185	55	66	21	34	45
Total Assets	-	240	692	1,727	2,529	4,712	5,938	5,649	6,179	6,615	7,626
Total Current Liabilities	-	24	82	183	331	466	795	371	381	623	612
Long-term Debt	-	35	-	800	1,200	2,536	2,700	2,303	2,297	2,098	2,735
Deferred Income Taxes	-	-	45	93	178	323	527	608	514	306	300
Other Liabilities and Deferred Credits	-	9	12	18	25	38	44	49	64	75	60
Total Liabilities	-	68	140	1,093	1,734	3,363	4,066	3,330	3,255	3,102	3,707
Minority Interests	-	-	-	-	-	-	-	-	-	138	184
Common Shares	-	-	1	1	(3)	1	1	1	2	3	3
Contributed Surplus (Paid-in Capital)	-	235	644	647	658	985	1,007	1,497	2,345	2,677	3,078
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	(63)	(93)	(13)	140	368	875	835	592	718	683
Other / Comprehensive Income (Loss)	-	-	-	-	-	(5)	(11)	(14)	(16)	(22)	(29)
Total Shareholders' Equity	-	172	552	634	795	1,349	1,872	2,319	2,923	3,376	3,735
Total Liabilities and Shareholders' Equity	-	240	692	1,727	2,529	4,712	5,938	5,649	6,179	6,615	7,626
Return on Capital Employed (ROCE)	-	**-8.4%**	**-9.6%**	**13.8%**	**14.0%**	**10.3%**	**14.1%**	**1.4%**	**-3.0%**	**4.0%**	**1.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	$53.00	$67.84	$84.44	$81.53	$87.63	$78.25	$39.17	$33.91	$42.87	$52.79	$44.71	$48.95
Production Costs	-	$17.55	$14.92	$17.36	$15.46	$17.87	$19.59	$13.33	$12.05	$13.30	$14.43	$13.45	$14.38
Exploration	-	$1.43	$0.16	$0.43	$0.40	$0.18	$0.18	$0.13	$0.10	$0.48	$0.91	$0.56	$0.43
DD&A	-	$23.29	$19.78	$18.94	$24.61	$24.16	$24.01	$25.66	$25.08	$21.36	$20.38	$21.90	$22.87
G&A/Other	-	$2.17	$0.00	$0.05	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Earnings	-	$8.56	$32.99	$47.66	$41.06	$45.42	$34.47	$0.04	-$3.31	$7.73	$17.06	$8.80	$11.27
Income Taxes	-	$0.00	$9.34	$16.36	$14.22	$15.86	$12.04	$0.02	-$1.24	$2.89	$1.02	$1.07	$2.59
Results of Operations	-	$8.56	$23.65	$31.30	$26.84	$29.56	$22.43	$0.03	-$2.07	$4.84	$16.04	$7.73	$8.68

Source: BMO Capital Markets, Company Reports

Oasis Petroleum (OAS - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	0.9	1.8	3.0	11.4	20.4	29.3	38.4	53.6	87.5	116.2	85.8	65.0
Liquids Production (b/d)	-	1,803	4,910	10,225	20,638	30,501	40,775	44,082	41,573	51,556	63,151	52,093	48,227
Total Production (boe/d)	-	1,952	5,207	10,721	22,532	33,903	45,657	50,475	50,510	66,143	82,525	66,393	59,062
% Gas Production	-	8%	6%	5%	8%	10%	11%	13%	18%	22%	23%	22%	18%
% Oil Production	-	92%	94%	95%	92%	90%	89%	87%	82%	78%	77%	78%	82%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	5.3	19.4	57.9	91.5	176.0	220.1	199.8	411.1	523.5	552.7	495.8	381.4
Closing Oil Reserves (mmbbls)	-	12.4	36.6	69.1	128.1	198.6	235.4	184.9	236.6	225.0	228.4	230.0	222.1
Closing Total Proven Reserves (mmboe)	-	13.3	39.8	78.7	143.3	227.9	272.1	218.2	305.1	312.2	320.5	312.6	285.6
% Gas Reserves	-	7%	8%	12%	11%	13%	13%	15%	22%	28%	29%	26%	22%
% Oil Reserves	-	93%	92%	88%	89%	87%	87%	85%	78%	72%	71%	74%	78%
Proven Reserve Life Index	-	18.7	20.9	20.1	17.4	18.4	16.3	11.8	16.5	12.9	10.6	13.4	13.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	4.9	14.8	39.6	37.8	91.9	54.8	-6.3	230.8	144.3	71.7	446.8	495.4
Oil Additions (mmbbls)	-	10.9	25.9	36.2	66.6	81.6	51.7	-34.4	66.8	7.2	26.5	100.5	117.8
Total Additions (mmboe)	-	11.7	28.4	42.8	72.9	96.9	60.8	-35.4	105.3	31.2	38.5	175.0	200.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	9.0	24.5	43.2	73.9	46.1	92.6	46.6	14.9	51.2	38.4	104.4	243.6
Net Acquisitions	-	2.0	1.4	0.0	1.0	45.7	-6.6	2.6	59.3	-0.7	16.9	75.5	71.4
Revisions of Estimates	-	0.8	2.6	(0.3)	(2.0)	5.1	(25.1)	(84.6)	31.1	(19.2)	(16.8)	(4.9)	(114.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	76.5%	86.2%	100.7%	101.4%	47.5%	152.2%	-131.6%	14.1%	163.8%	99.7%	59.6%	121.6%
Net Acquisitions	-	17.0%	4.8%	-0.1%	1.3%	47.2%	-10.9%	-7.2%	56.3%	-2.3%	44.1%	43.2%	35.7%
Revisions of Estimates	-	6.6%	9.0%	-0.7%	-2.7%	5.3%	-41.3%	238.9%	29.6%	-61.5%	-43.8%	-2.8%	-57.2%
Additions as % of Production:													
Gas	-	1510.7%	2267.3%	3643.8%	911.1%	1233.5%	512.9%	-44.9%	1179.4%	451.7%	169.0%	475.6%	417.6%
Oil	-	1654.4%	1446.5%	971.2%	883.6%	733.3%	347.3%	-213.7%	440.5%	38.2%	115.0%	176.2%	133.9%
Total	-	1643.4%	1493.3%	1095.0%	885.9%	783.5%	365.0%	-192.3%	571.2%	129.4%	127.7%	240.7%	185.9%
Additions as % of Reserves:													
Gas	-	93.5%	76.2%	68.4%	41.3%	52.2%	24.9%	-3.1%	56.2%	27.6%	13.0%	90.1%	129.9%
Oil	-	87.6%	70.9%	52.5%	52.0%	41.1%	22.0%	-18.6%	28.3%	3.2%	11.6%	43.7%	53.1%
Total	-	88.0%	71.3%	54.4%	50.8%	42.5%	22.4%	-16.2%	34.5%	10.0%	12.0%	56.0%	70.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	$1.0	$0.3	$1.7	$3.3	$2.3	$3.1	$2.4	$1.8	$11.6	$53.9	$67.3	$72.8
Development	-	$38.5	$243.8	$618.7	$1,074.4	$890.3	$1,437.9	$433.7	$207.8	$511.9	$923.6	$1,643.2	$3,514.9
Net Acquisitions	-	$49.1	$101.9	$18.6	$37.3	$1,589.9	$67.9	$32.0	$782.2	$67.3	$956.3	$1,805.8	$1,905.7
Total Expenditures	-	$88.6	$345.9	$639.0	$1,114.9	$2,482.4	$1,508.9	$468.1	$991.8	$590.8	$1,933.8	$3,516.4	$5,493.4
Expenditures as % of Total:													
Exploration	-	1.2%	0.1%	0.3%	0.3%	0.1%	0.2%	0.5%	0.2%	2.0%	2.8%	1.9%	1.3%
Development	-	43.5%	70.5%	96.8%	96.4%	35.9%	95.3%	92.7%	20.9%	86.6%	47.8%	46.7%	64.0%
Net Acquisitions	-	55.4%	29.5%	2.9%	3.3%	64.0%	4.5%	6.8%	78.9%	11.4%	49.5%	51.4%	34.7%
Cashflow (US$million)	-	$23.7	$82.8	$198.3	$426.4	$667.0	$777.0	$475.7	$425.9	$644.1	$1,124.5	$2,194.5	$3,447.1
Cashflow (US$/boe)	-	$33.28	$43.58	$50.67	$51.85	$53.90	$46.62	$25.82	$23.10	$26.68	$37.33	$30.19	$31.98
Recycle Ratio	-	4.4x	3.6x	3.4x	3.4x	2.1x	2.1x	-2.0x	2.6x	1.5x	1.0x	1.5x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	$4.07	$9.03	$14.47	$14.99	$17.43	$21.35	-$11.48	$4.55	$16.38	$45.44	$17.20	$27.82
Net Acquisition Costs	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	-	$7.56	$12.14	$14.86	$15.30	$25.61	$21.78	-$13.21	$8.78	$18.11	$35.56	$20.09	$27.41
Exploration & Development (excl. revisions)	-	$4.42	$9.97	$14.37	$14.59	$19.36	$15.56	$9.35	$14.09	$10.23	$25.48	$16.39	$14.73
Net Acquisition Costs	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	-	$8.10	$13.33	$14.76	$14.90	$27.03	$15.99	$9.51	$12.12	$11.40	$27.15	$19.54	$17.44

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Oasis Petroleum (OAS - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	17.55	14.92	17.36	15.46	17.87	19.59	13.33	12.05	13.30	14.43	13.45	14.38
Exploration Expense	-	1.43	0.16	0.43	0.40	0.18	0.18	0.13	0.10	0.48	0.91	0.56	0.43
G&A/Other	-	2.17	-	0.05	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	7.56	12.14	14.86	15.30	25.61	21.78	9.51	12.12	18.11	35.56	21.93	19.42
Return on Capital	-	9.42	17.25	20.15	17.62	31.41	23.24	7.09	13.12	14.88	23.82	18.79	17.03
Income Taxes	-	3.14	6.82	10.53	9.33	16.86	12.47	4.24	7.84	8.89	10.21	2.60	5.07
Breakeven Oil Price	**-**	**41.27**	**51.28**	**63.40**	**58.11**	**91.93**	**77.26**	**34.31**	**45.23**	**55.66**	**84.93**	**57.33**	**56.32**
Quality Differential	-	6.76	9.42	22.50	22.21	12.44	13.24	9.60	5.94	3.84	6.26	5.35	7.78
Required Brent Price	**-**	**48.03**	**60.70**	**85.89**	**80.32**	**104.36**	**90.50**	**43.91**	**51.16**	**59.50**	**91.20**	**62.67**	**64.10**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	18.30	15.30	17.72	16.20	18.93	20.71	14.65	13.73	15.05	16.91	15.47	16.19
Exploration Expense	-	1.49	0.16	0.44	0.41	0.19	0.19	0.14	0.11	0.54	1.07	0.65	0.48
G&A/Other	-	2.26	-	0.05	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	7.86	12.61	15.96	16.05	28.09	23.49	10.78	14.71	13.48	31.22	19.81	18.74
Return on Capital	-	9.85	17.71	20.78	18.37	33.91	24.72	7.92	15.30	10.70	20.76	16.12	15.78
Income Taxes	-	3.28	7.00	10.86	9.73	18.20	13.27	4.73	9.15	6.40	8.90	2.23	4.70
Breakeven Oil Price	**-**	**43.05**	**52.78**	**65.82**	**60.76**	**99.32**	**82.37**	**38.22**	**53.00**	**46.18**	**78.85**	**54.27**	**55.88**
Quality Differential	-	7.05	9.66	22.97	23.26	13.18	14.00	10.55	6.76	4.35	7.34	6.15	8.60
Required Brent Price	**-**	**50.10**	**62.44**	**88.78**	**84.03**	**112.50**	**96.37**	**48.77**	**59.76**	**50.52**	**86.19**	**60.42**	**64.48**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	18.30	15.30	17.72	16.20	18.93	20.71	14.65	13.73	15.05	16.91	15.47	16.19
Exploration Expense	-	1.49	0.16	0.44	0.41	0.19	0.19	0.14	0.11	0.54	1.07	0.65	0.48
G&A/Other	-	2.26	-	0.05	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	14.55	26.72	29.64	27.70	41.84	32.88	16.51	20.15	22.28	54.03	31.53	29.17
Return on Capital	-	18.23	36.17	38.24	31.44	50.16	34.55	12.12	20.92	17.69	34.75	25.85	24.71
Income Taxes	-	6.08	14.29	19.99	16.66	26.92	18.54	7.23	12.51	10.57	14.89	3.58	7.36
Breakeven Oil Price	**-**	**60.91**	**92.63**	**106.09**	**92.41**	**138.04**	**106.87**	**50.66**	**67.42**	**66.14**	**121.65**	**77.07**	**77.91**
Quality Differential	-	7.05	9.66	22.97	23.26	13.18	14.00	10.55	6.76	4.35	7.34	6.15	8.60
Required Brent Price	**-**	**67.96**	**102.30**	**129.06**	**115.68**	**151.21**	**120.87**	**61.21**	**74.18**	**70.48**	**128.98**	**83.22**	**86.51**

Source: BMO Capital Markets, Company Reports

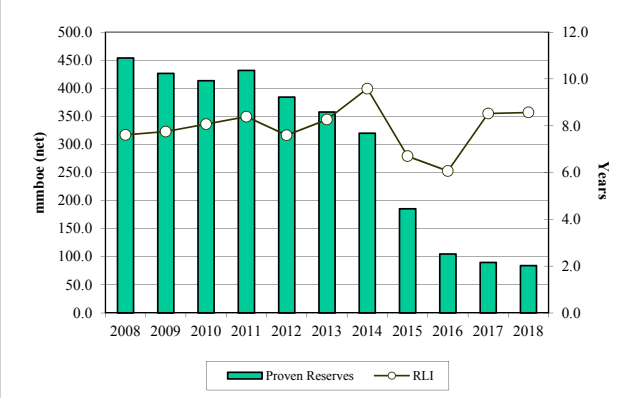
Obsidian Energy (OBE - NYSE)

US$, net

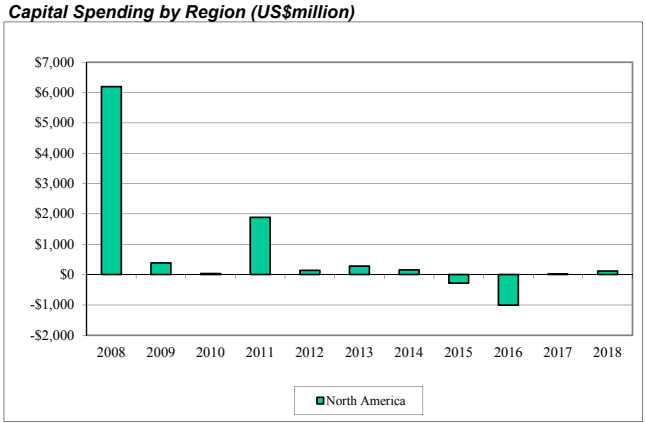
- Penn West Petroleum changed its name to Obsidian Energy in June 2018.
- The company reported a loss from operations of $6.90/boe in 2018 versus a loss of $4.78/boe in 2017.
- One-year F&D costs were $19.25/boe in 2018. On a realized oil:gas ratio basis, adjusted F&D costs were $21.31/boe while the costs for PD reserves were $5.70/boe.
- Obsidian's 2018 operations imply a required Brent breakeven oil price of $93.76/boe, while its PD costs suggest a Brent breakeven of $66.71/boe.
- The company reported a loss on capital of 11.4% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

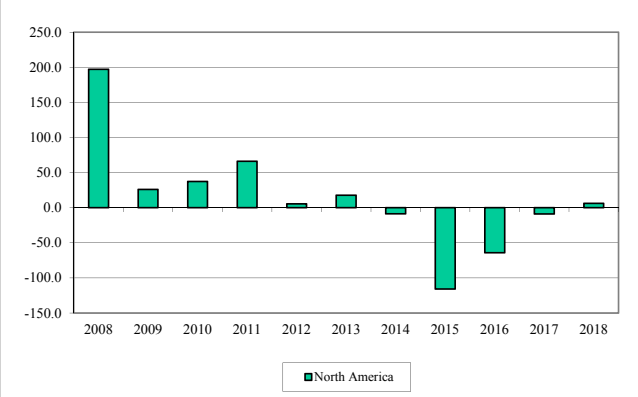
Proven Reserves vs RLI



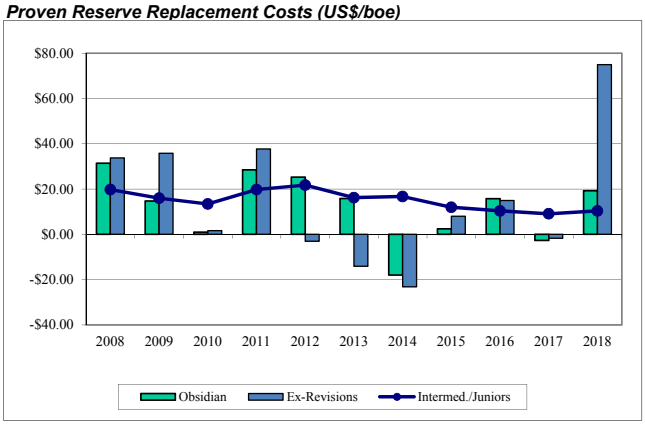
Capital Spending by Region (US$million)



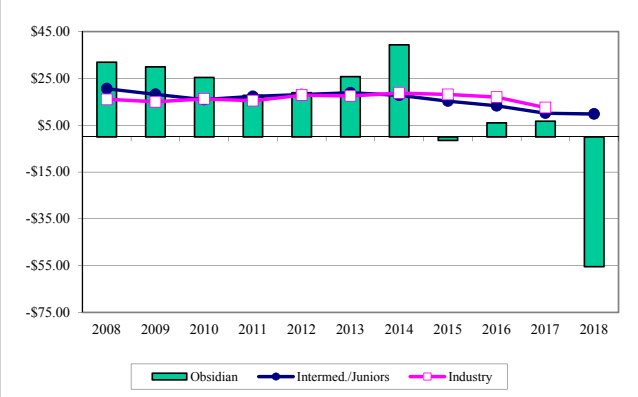
Proven Reserve Additions by Region (million boe)



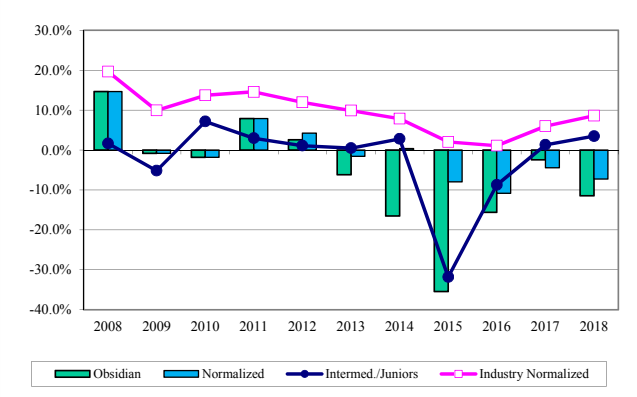
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

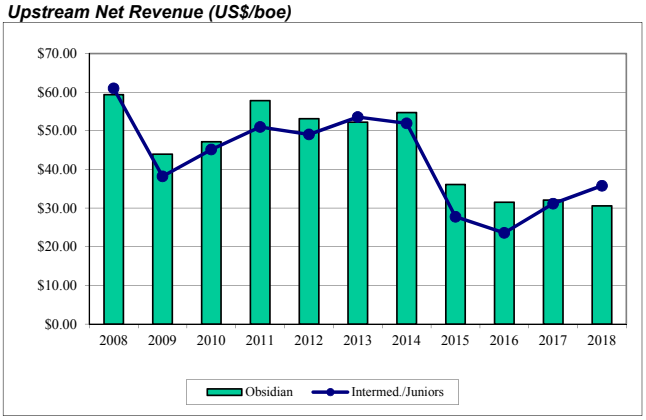
See pages F1 to F4 for analyst coverage.

Obsidian Energy (OBE - NYSE)

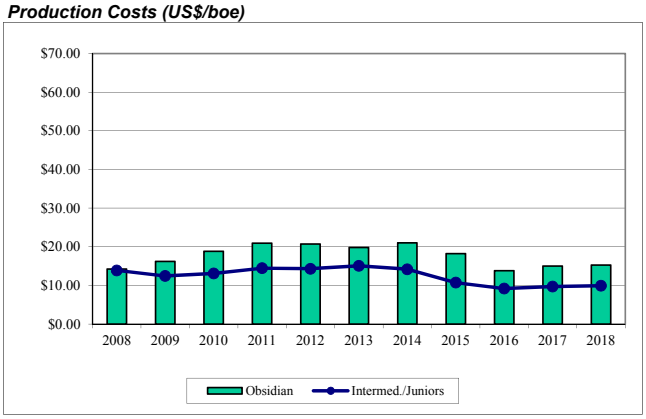
US$/boe, net

North America

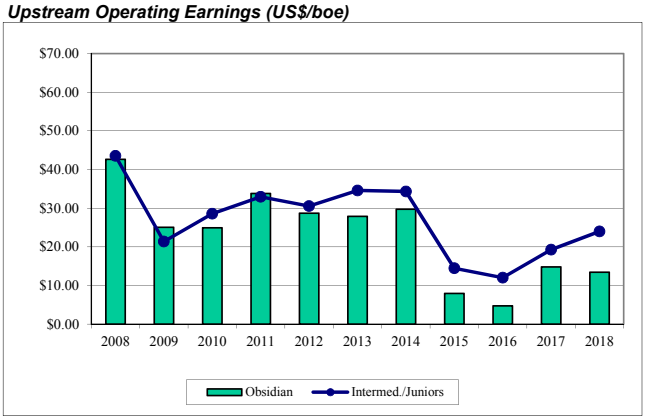
Upstream Net Revenue (US$/boe)



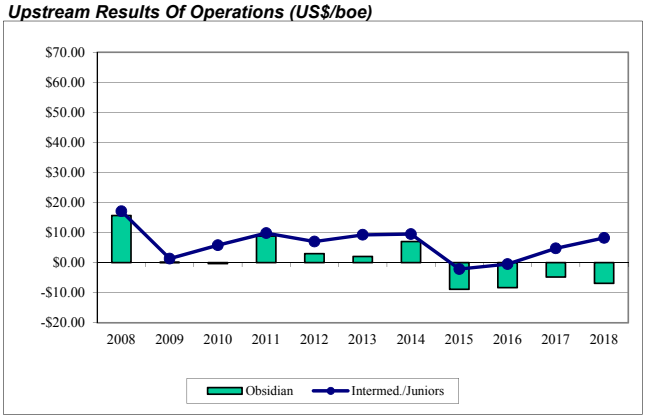
Production Costs (US$/boe)



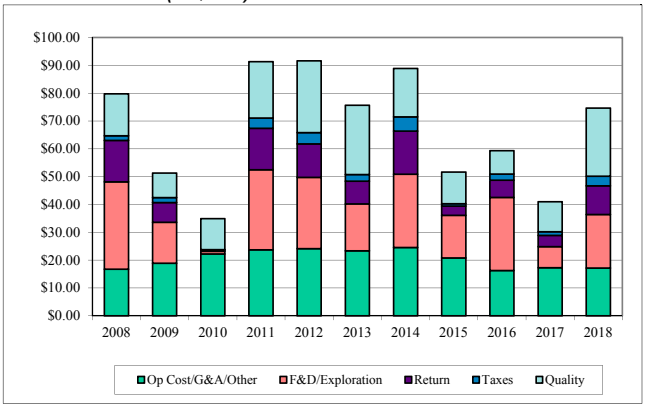
Upstream Operating Earnings (US$/boe)



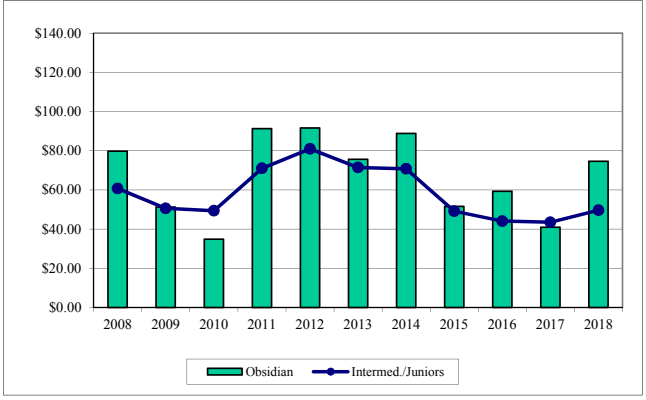
Upstream Results Of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Obsidian Energy (OBE - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	3,819	2,082	2,436	3,041	2,642	2,253	1,865	829	443	314	315
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	343	(185)	3	(56)	204	(84)	8	161	(8)	19	(20)
Total Revenue and Other Income	4,162	1,897	2,439	2,985	2,846	2,170	1,873	991	434	332	295
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	848	892	963	1,077	1,049	857	701	504	239	158	150
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	15	17	43	14	203	183	-	-
General and Administrative	149	148	176	144	172	155	119	72	42	24	19
Depreciation, Depletion and Amortization	1,504	1,371	1,299	1,171	1,249	1,090	679	522	278	223	222
Interest, net	192	142	169	192	199	179	143	127	86	18	16
Other	191	(196)	(78)	(30)	(90)	855	1,860	2,091	304	(15)	123
Earnings Before Income Tax	1,279	(460)	(90)	416	250	(1,050)	(1,676)	(2,557)	(716)	(75)	(235)
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	127	(333)	(310)	(230)	63	(236)	(107)	(485)	(190)	(10)	-
Total Income Taxes	127	(333)	(310)	(230)	63	(236)	(107)	(485)	(190)	(10)	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	1,152	(127)	219	645	187	(814)	(1,570)	(2,072)	(526)	(65)	(235)
Discontinued Operations/Extraordinary Items	-	-	-	-	(13)	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	1,152	(127)	219	645	174	(814)	(1,570)	(2,072)	(526)	(65)	(235)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	1,152	(127)	219	645	174	(814)	(1,570)	(2,072)	(526)	(65)	(235)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	1,152	(127)	219	645	187	(814)	(1,570)	(2,072)	(526)	(65)	(235)
Charges and Credits Not Impacting Cash	1,631	1,038	990	942	1,312	907	1,569	590	305	224	305
Other	(470)	347	(110)	(114)	(342)	866	798	1,594	190	(67)	(46)
Cash Flow From Operations	2,313	1,258	1,099	1,473	1,157	960	797	113	(30)	93	24
Change in Working Capital / Other	(185)	(24)	83	(50)	37	50	(29)	24	(73)	4	52
Net Cash From Operating Activities	2,128	1,234	1,182	1,423	1,194	1,009	768	137	(104)	96	76
Total Capital Expenditures	(986)	(606)	(1,153)	(1,868)	(1,753)	(793)	(663)	(368)	(62)	(109)	(130)
Acquisitions, net	(27)	325	(619)	(140)	1,616	510	507	627	1,069	85	10
Other	24	(70)	1,265	355	(168)	(43)	53	(105)	(17)	(2)	(5)
Net Cash From Investing Activities	(989)	(351)	(506)	(1,652)	(305)	(325)	(102)	153	990	(26)	(124)
Net Change in Debt	44	(426)	(643)	656	(496)	(346)	(418)	(407)	(1,052)	(79)	40
Net Issuance of Units/Shares	56	247	541	163	3	12	10	125	1	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(1,238)	(704)	(574)	(332)	(395)	(350)	(197)	(59)	-	-	-
Other	-	-	-	(258)	-	-	-	-	172	2	6
Net Cash From Financing Activities	(1,138)	(883)	(676)	229	(889)	(684)	(605)	(341)	(879)	(77)	46
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(0)	0	0	-	(0)	0	61	(51)	7	(7)	(2)
Cash and Equivalents, Beginning of Year	0	0	0	0	0	0	0	52	2	8	2
Cash and Equivalents, End of Year	(0)	0	0	0	0	0	61	2	8	2	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Obsidian Energy (OBE - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	887	448	476	636	706	448	371	239	258	146	59
Net Property, Plant and Equipment	11,745	9,995	9,885	12,454	10,899	9,122	7,160	4,029	2,253	2,174	1,987
Other Assets	1,905	1,779	2,620	2,675	2,895	2,711	1,391	371	12	-	-
Total Assets	14,537	12,223	12,981	15,766	14,500	12,280	8,923	4,639	2,523	2,319	2,045
Total Current Liabilities	850	639	822	1,365	908	787	854	490	260	221	147
Long-term Debt	3,908	3,060	2,424	3,257	2,687	2,325	1,690	1,345	334	253	310
Deferred Income Taxes	1,290	1,030	830	1,302	1,351	1,070	828	208	11	-	-
Other Liabilities and Deferred Credits	585	519	944	670	675	610	495	297	221	176	147
Total Liabilities	6,633	5,248	5,019	6,593	5,620	4,792	3,867	2,341	825	649	604
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Shareholders' Capital	7,523	7,444	8,911	8,943	8,991	8,861	8,136	7,044	6,797	1,682	1,686
Contributed Surplus (Paid-in Capital)	71	108	134	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	310	(578)	(1,084)	230	(208)	(1,451)	(3,161)	(4,817)	(5,173)	(86)	(321)
Accumulated Cash Distributions / Other	-	-	-	-	97	78	81	72	73	74	76
Total Unitholders' Equity	7,904	6,975	7,962	9,173	8,879	7,488	5,056	2,299	1,698	1,670	1,442
Total Liabilities and Unitholders' Equity	14,537	12,223	12,981	15,766	14,500	12,280	8,923	4,639	2,523	2,319	2,045
Return on Capital Employed (ROCE)	**14.7%**	**-0.8%**	**-1.8%**	**7.9%**	**2.6%**	**-6.2%**	**-16.5%**	**-35.4%**	**-15.6%**	**-2.5%**	**-11.4%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$59.33	$43.95	$47.16	$57.82	$53.13	$52.24	$54.70	$36.09	$31.52	$32.07	$30.57	$31.42	$40.61
Production Costs	$14.22	$16.21	$18.80	$20.92	$20.72	$19.79	$20.99	$18.20	$13.79	$15.01	$15.24	$14.51	$17.74
Exploration	$0.00	$0.00	$0.00	$0.29	$0.34	$0.99	$0.43	$7.33	$10.56	$0.00	$0.00	$4.85	$4.05
DD&A	$25.21	$24.90	$25.35	$22.75	$24.67	$25.18	$20.34	$18.88	$16.06	$21.16	$22.63	$19.20	$19.50
G&A/Other	$2.50	$2.69	$3.43	$2.79	$3.40	$3.59	$3.55	$2.60	$2.44	$2.27	$1.89	$2.25	$2.79
Pre-tax Results Of Operations	$17.41	$0.16	-$0.42	$11.06	$4.01	$2.69	$9.38	-$10.93	-$11.35	-$6.37	-$9.19	-$9.39	-$3.47
Income Taxes	$1.73	$0.03	-$0.08	$2.21	$1.01	$0.61	$2.35	-$2.07	-$3.02	-$1.59	-$2.30	-$2.40	-$0.84
Results Of Operations	$15.68	$0.13	-$0.33	$8.85	$3.00	$2.09	$7.04	-$8.86	-$8.33	-$4.78	-$6.90	-$7.00	-$2.63

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$59.33	$43.95	$47.16	$57.82	$53.13	$52.24	$54.70	$36.09	$31.52	$32.07	$30.57	$31.42	$40.61
Production Costs	$14.22	$16.21	$18.80	$20.92	$20.72	$19.79	$20.99	$18.20	$13.79	$15.01	$15.24	$14.51	$17.74
Exploration	$0.00	$0.00	$0.00	$0.29	$0.34	$0.99	$0.43	$7.33	$10.56	$0.00	$0.00	$4.85	$4.05
DD&A	$25.21	$24.90	$25.35	$22.75	$24.67	$25.18	$20.34	$18.88	$16.06	$21.16	$22.63	$19.20	$19.50
G&A/Other	$2.50	$2.69	$3.43	$2.79	$3.40	$3.59	$3.55	$2.60	$2.44	$2.27	$1.89	$2.25	$2.79
Pre-tax Results Of Operations	$17.41	$0.16	-$0.42	$11.06	$4.01	$2.69	$9.38	-$10.93	-$11.35	-$6.37	-$9.19	-$9.39	-$3.47
Income Taxes	$1.73	$0.03	-$0.08	$2.21	$1.01	$0.61	$2.35	-$2.07	-$3.02	-$1.59	-$2.30	-$2.40	-$0.84
Results Of Operations	$15.68	$0.13	-$0.33	$8.85	$3.00	$2.09	$7.04	-$8.86	-$8.33	-$4.78	-$6.90	-$7.00	-$2.63

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results Of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

Obsidian Energy (OBE - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	418.3	370.1	338.5	308.6	296.4	261.9	194.7	146.6	106.7	67.2	57.5	77.1	114.6
Liquids Production (b/d)	93,711	89,150	83,997	89,642	89,284	74,930	59,037	51,356	29,635	17,656	17,322	21,538	35,001
Total Production (boe/d)	163,422	150,827	140,416	141,073	138,691	118,587	91,494	75,796	47,414	28,855	26,911	34,393	54,094
% Gas Production	43%	41%	40%	36%	36%	37%	35%	32%	37%	39%	36%	37%	35%
% Oil Production	57%	59%	60%	64%	64%	63%	65%	68%	63%	61%	64%	63%	65%
Proven Reserves:													
Closing Gas Reserves (bcf)	916.8	807.0	758.9	689.9	680.0	664.0	534.0	314.0	246.0	184.9	169.0	199.9	289.6
Closing Oil Reserves (mmbbls)	301.1	292.0	287.0	316.9	271.0	247.0	231.0	133.0	64.0	58.9	56.0	59.6	108.6
Closing Total Proven Reserves (mmboe)	453.9	426.5	413.5	431.8	384.3	357.7	320.0	185.3	105.0	89.7	84.2	93.0	156.8
% Gas Reserves	34%	32%	31%	27%	29%	31%	28%	28%	39%	34%	33%	36%	31%
% Oil Reserves	66%	68%	69%	73%	71%	69%	72%	72%	61%	66%	67%	64%	69%
Proven Reserve Life Index	7.6	7.8	8.1	8.4	7.6	8.3	9.6	6.7	6.1	8.5	8.6	7.7	7.9
Proven Reserve Additions:													
Gas Additions (bcf)	469.9	18.1	60.5	41.4	99.4	81.6	-67.5	-169.5	-27.4	-52.8	4.8	(75.5)	(312.5)
Oil Additions (mmbbls)	118.9	23.0	27.3	59.4	-11.1	4.3	2.6	-87.5	-59.5	0.0	5.4	(54.1)	(139.0)
Total Additions (mmboe)	197.2	26.0	37.3	66.3	5.4	17.9	-8.7	-115.7	-64.1	-8.8	6.2	-66.7	-191.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	20.4	22.6	33.2	51.4	7.6	2.8	28.5	1.9	1.8	9.6	6.2	17.5	48.0
Net Acquisitions	163.1	(11.9)	(10.7)	(1.3)	(52.6)	(22.8)	(35.3)	(37.2)	(69.3)	(23.2)	(4.6)	(97.0)	(169.5)
Revisions of Estimates	13.7	15.3	14.9	16.2	50.4	37.9	-1.9	-80.5	3.4	4.8	4.6	12.8	(69.6)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	10.3%	86.6%	88.9%	77.6%	141.0%	15.4%	-329.2%	-1.7%	-2.8%	-108.9%	99.1%	-26.3%	-25.1%
Net Acquisitions	82.7%	-45.6%	-28.7%	-2.0%	-971.2%	-127.7%	406.8%	32.1%	108.1%	263.5%	-73.4%	145.6%	88.7%
Revisions of Estimates	6.9%	58.9%	39.9%	24.4%	930.3%	212.3%	22.4%	69.5%	-5.3%	-54.6%	74.3%	-19.2%	36.4%
Additions as % of Production:													
Gas	307.8%	13.4%	48.9%	36.7%	91.9%	85.3%	-95.0%	-316.7%	-70.5%	-215.4%	22.7%	-89.4%	-149.5%
Oil	347.5%	70.8%	88.9%	181.6%	-34.2%	15.6%	12.0%	-466.7%	-550.0%	0.0%	85.7%	-229.3%	-217.5%
Total	330.6%	47.3%	72.8%	128.8%	10.7%	41.3%	-26.0%	-418.3%	-370.2%	-83.6%	63.3%	-177.0%	-193.5%
Additions as % of Reserves:													
Gas	51.3%	2.2%	8.0%	6.0%	14.6%	12.3%	-12.6%	-54.0%	-11.2%	-28.6%	2.8%	-37.8%	-107.9%
Oil	39.5%	7.9%	9.5%	18.8%	-4.1%	1.7%	1.1%	-65.8%	-93.0%	0.0%	9.7%	-90.7%	-128.0%
Total	43.4%	6.1%	9.0%	15.4%	1.4%	5.0%	-2.7%	-62.4%	-61.0%	-9.8%	7.4%	-71.7%	-121.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$160.3	$29.9	$203.9	$333.8	$37.0	$3.9	$1.8	$1.6	$4.5	$3.9	$1.5	$9.9	$13.3
Exploration & Development	$872.5	$576.1	$866.2	$1,350.6	$1,853.1	$869.2	$687.4	$368.1	$57.4	$104.9	$128.1	$290.4	$1,345.9
Net Acquisitions	$5,164.2	-$222.9	-$1,034.2	$203.3	-$1,753.1	-$590.5	-$533.5	-$650.8	-$1,069.0	-$84.8	-$10.0	-$1,163.9	-$2,348.1
Total Expenditures	$6,197.0	$383.2	$35.9	$1,887.7	$137.1	$282.6	$155.8	-$281.1	-$1,007.1	$23.9	$119.6	-$863.5	-$988.9
Expenditures as % of Total:													
Land & Seismic	2.6%	7.8%	567.6%	17.7%	27.0%	1.4%	1.2%	-0.6%	-0.5%	16.1%	1.3%	-1.2%	-1.3%
Exploration & Development	14.1%	150.3%	2410.8%	71.5%	1351.8%	307.6%	441.3%	-130.9%	-5.7%	438.7%	107.1%	-33.6%	-136.1%
Net Acquisitions	83.3%	-58.2%	-2878.4%	10.8%	-1278.8%	-208.9%	-342.4%	231.5%	106.2%	-354.8%	-8.4%	134.8%	237.4%
Cashflow (C$million)	2312.8	1257.9	1099.2	1473.0	1156.7	959.6	797.0	112.8	-30.2	92.5	23.9	86.2	996.0
Cashflow (C$/boe)	$38.77	$22.85	$21.45	$28.61	$22.85	$22.17	$23.87	$4.08	-$1.75	$8.79	$2.44	$2.29	$10.09
Recycle Ratio	1.2x	1.6x	1.0x	1.0x	0.9x	1.4x	-1.3x	1.7x	-0.1x	-3.2x	0.1x	0.2x	1.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$30.35	$15.99	$22.27	$24.91	$32.56	$21.46	$25.92	-$4.71	$11.93	$7.55	$12.03	$9.89	-$63.00
Net Acquisition Costs	$31.65	$18.78	$96.37	-$154.06	$33.31	$25.88	$15.13	$17.50	$15.43	$3.66	$2.20	$12.00	$13.86
All Sources (incl. revisions)	$31.43	$14.71	$0.96	$28.47	$25.30	$15.82	-$17.97	$2.43	$15.72	-$2.72	$19.25	$12.96	$5.18
Exploration & Development (excl. revisions)	$50.72	$26.85	$32.26	$32.75	$247.47	$316.90	$24.15	$191.14	$34.36	$11.34	$21.06	$17.11	$28.31
Net Acquisition Costs	$31.65	$18.78	$96.37	-$154.06	$33.31	$25.88	$15.13	$17.50	$15.43	$3.66	$2.20	$12.00	$13.86
All Sources (excl. revisions)	$33.77	$35.80	$1.60	$37.68	-$3.05	-$14.09	-$23.15	$7.97	$14.93	-$1.76	$74.96	$10.87	$8.14

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Obsidian Energy (OBE - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.22	16.21	18.80	20.92	20.72	19.79	20.99	18.20	13.79	15.01	15.24	14.51	17.74
Exploration Expense	-	-	-	0.29	0.34	0.99	0.43	7.33	10.56	-	-	4.85	4.05
G&A/Other	2.50	2.69	3.43	2.79	3.40	3.59	3.55	2.60	2.44	2.27	1.89	2.25	2.79
F&D Costs (1-Year)	31.43	14.71	0.96	28.47	25.30	15.82	25.92	7.97	15.72	7.55	19.25	14.17	15.28
Return on Capital	14.88	7.10	0.49	14.87	12.04	8.19	15.46	3.35	6.18	4.03	10.34	6.85	7.54
Income Taxes	1.65	1.78	0.12	3.72	4.06	2.38	5.15	0.78	2.24	1.34	3.45	2.35	2.39
Breakeven Oil Price	**64.67**	**42.49**	**23.79**	**71.07**	**65.85**	**50.75**	**71.51**	**40.24**	**50.94**	**30.21**	**50.16**	**44.99**	**49.79**
Quality Differential	15.11	8.79	11.11	20.25	25.77	24.89	17.36	11.40	8.37	10.76	24.47	14.53	14.47
Required Brent Price	**79.78**	**51.27**	**34.91**	**91.32**	**91.61**	**75.64**	**88.87**	**51.64**	**59.31**	**40.97**	**74.63**	**59.52**	**64.26**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.31	21.14	25.13	28.48	29.03	27.52	27.35	22.86	18.36	20.23	20.85	19.52	23.14
Exploration Expense	-	-	-	0.40	0.47	1.37	0.57	9.21	14.06	-	-	6.53	5.29
G&A/Other	3.04	3.51	4.59	3.80	4.76	4.99	4.63	3.27	3.25	3.06	2.58	3.03	3.64
F&D Costs (1-Year)	37.70	15.75	1.16	30.80	4.16	37.71	6.41	8.74	16.50	10.00	21.31	15.94	12.59
Return on Capital	18.74	8.17	0.63	18.41	2.11	20.71	4.11	3.76	6.21	5.54	11.68	7.82	6.41
Income Taxes	2.07	2.04	0.16	4.60	0.71	6.01	1.37	0.88	2.25	1.85	3.89	2.68	2.04
Breakeven Oil Price	**78.86**	**50.61**	**31.67**	**86.49**	**41.24**	**98.32**	**44.43**	**48.72**	**60.63**	**40.69**	**60.30**	**55.51**	**53.11**
Quality Differential	18.40	11.47	14.86	27.56	36.11	34.61	22.62	14.31	11.13	14.51	33.46	19.70	19.21
Required Brent Price	**97.26**	**62.08**	**46.53**	**114.04**	**77.34**	**132.93**	**67.05**	**63.04**	**71.76**	**55.19**	**93.76**	**75.21**	**72.32**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.31	21.14	25.13	28.48	29.03	27.52	27.35	22.86	18.36	20.23	20.85	19.52	23.14
Exploration Expense	-	-	-	0.40	0.47	1.37	0.57	9.21	14.06	-	-	6.53	5.29
G&A/Other	3.04	3.51	4.59	3.80	4.76	4.99	4.63	3.27	3.25	3.06	2.58	3.03	3.64
F&D Costs (1-Year)	41.04	21.62	30.26	51.42	61.23	37.77	30.05	7.18	18.58	6.83	5.70	10.37	13.67
Return on Capital	20.39	11.20	16.52	29.44	30.80	20.74	19.28	3.10	7.00	3.79	3.10	5.06	6.96
Income Taxes	2.25	2.80	4.13	7.36	10.38	6.01	6.43	0.73	2.54	1.26	1.03	1.74	2.21
Breakeven Oil Price	**84.04**	**60.27**	**80.63**	**120.90**	**136.68**	**98.40**	**88.29**	**46.35**	**63.78**	**35.17**	**33.26**	**46.24**	**54.91**
Quality Differential	18.40	11.47	14.86	27.56	36.11	34.61	22.62	14.31	11.13	14.51	33.46	19.70	19.21
Required Brent Price	**102.44**	**71.74**	**95.49**	**148.45**	**172.78**	**133.02**	**110.91**	**60.66**	**74.91**	**49.68**	**66.71**	**65.94**	**74.11**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

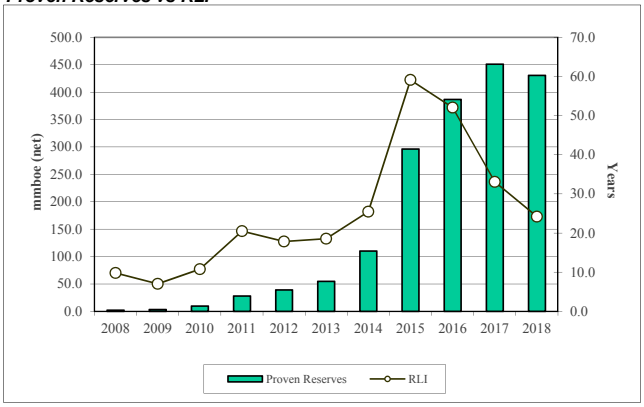
Painted Pony Petroleum Ltd. (PONY - TSX)

US$/boe, net

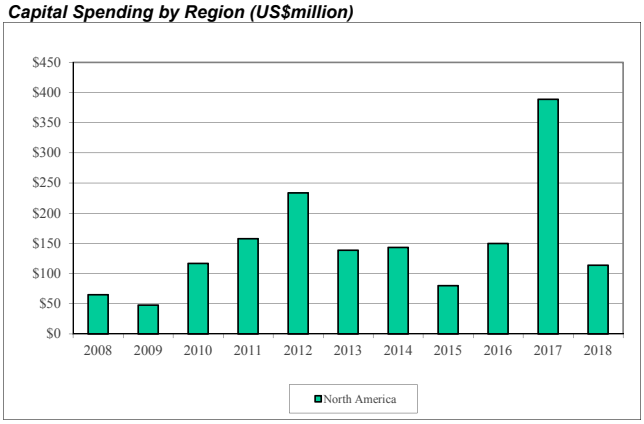
- Painted Pony reported results of operations of $4.49/boe versus results of $3.67/boe last year.
- The company reported one-year F&D costs of $9.41/boe, up from $4.88/boe in 2017. On a realized oil:gas price ratio basis, F&D costs were $12.67/boe, while costs for PD reserves were $19.70/boe.
- Painted Pony's operations in 2018 imply a required Brent breakeven oil price of $87.26/boe, while its PD costs suggest a Brent breakeven of $112.13/boe.
- Painted Pony reported ROCE of 4.1% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

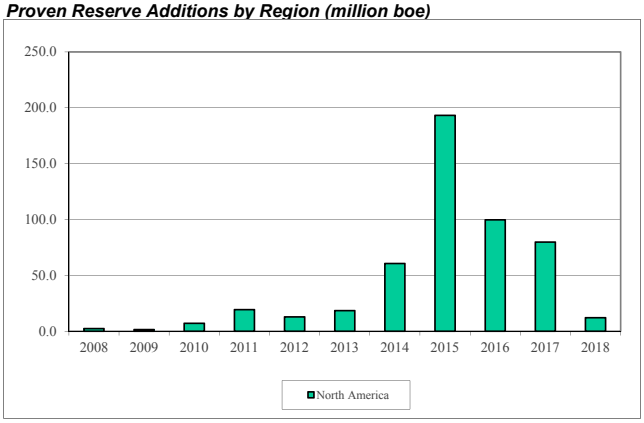
Proven Reserves vs RLI



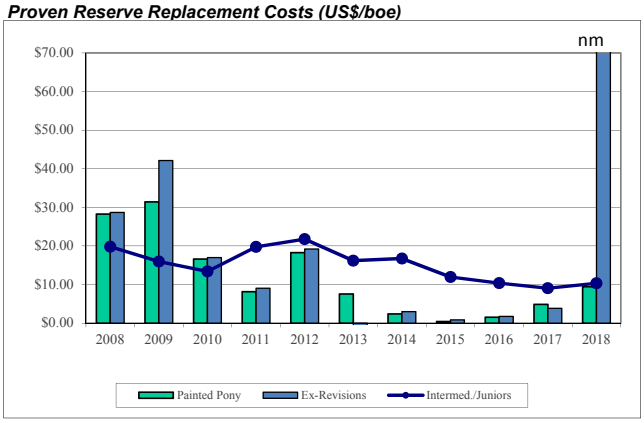
Capital Spending by Region (US$million)



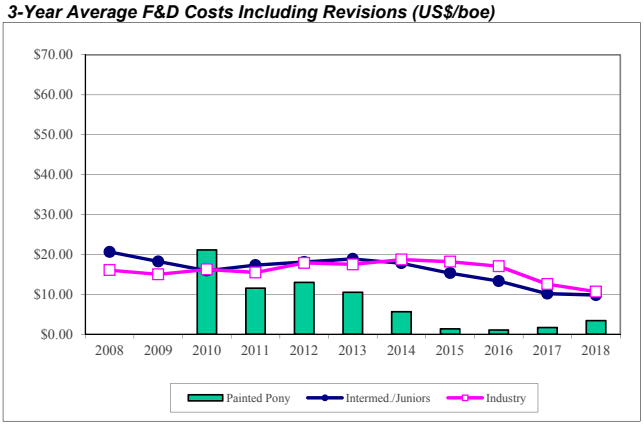
Proven Reserve Additions by Region (million boe)



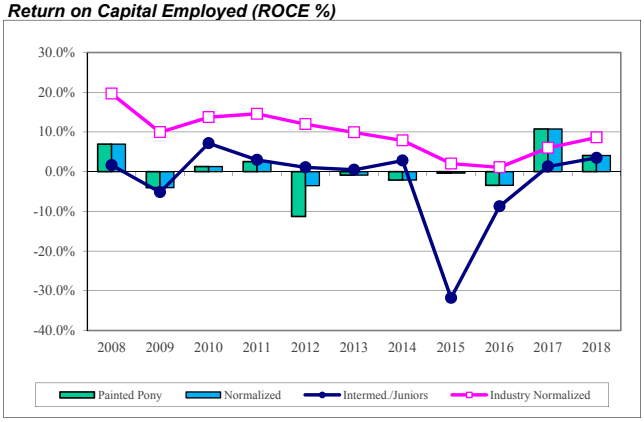
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

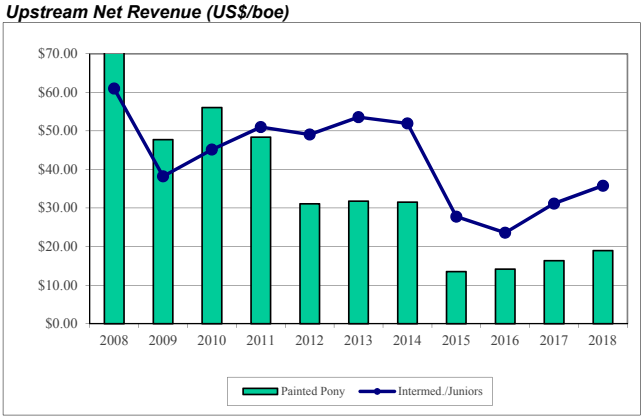
See pages F1 to F4 for analyst coverage.

Painted Pony Petroleum Ltd. (PONY - TSX)

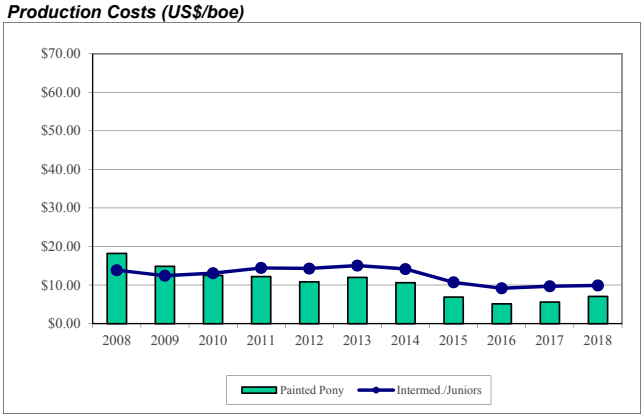
US$/boe, net

North America

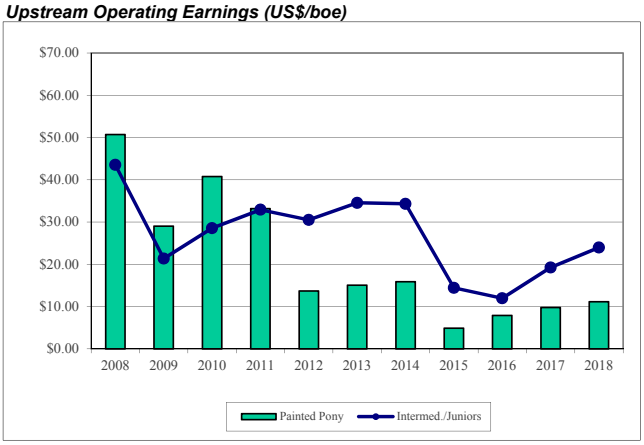
Upstream Net Revenue (US$/boe)



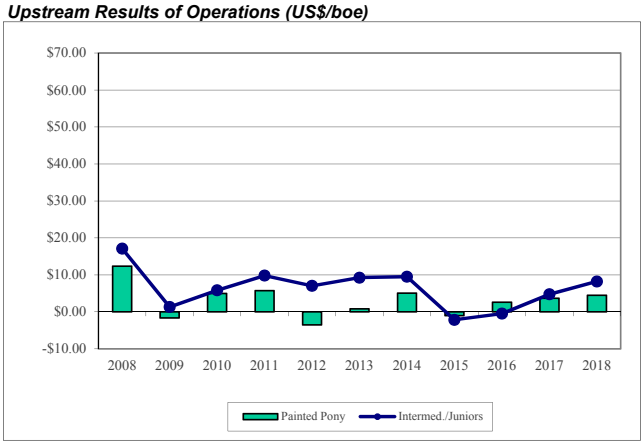
Production Costs (US$/boe)



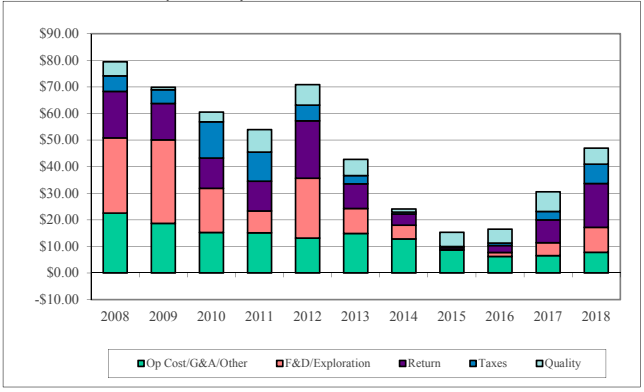
Upstream Operating Earnings (US$/boe)



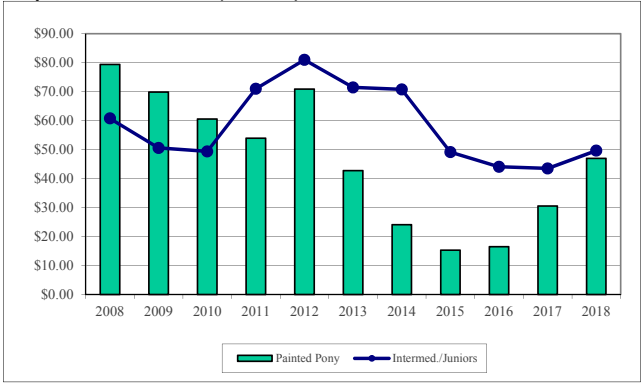
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Painted Pony Petroleum Ltd. (PONY - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	16	22	49	66	68	94	139	62	90	188	307
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	0	0	0	1	-	0	2	13	(42)	147	(8)
Total Revenue and Other Income	17	22	50	66	68	94	141	76	48	335	300
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	4	7	11	17	24	35	46	35	38	76	126
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	0	9	5	12	-	-	-	-
General and Administrative	1	2	2	4	5	8	10	9	8	13	13
Depreciation, Depletion and Amortization	8	15	26	30	40	41	43	31	33	65	83
Interest, net	(1)	(0)	(0)	1	0	1	2	3	17	47	67
Other	5	3	5	2	51	7	45	4	4	5	3
Earnings Before Income Tax	(0)	(4)	4	13	(61)	(5)	(16)	(5)	(53)	129	8
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	(5)	(1)	2	6	(13)	1	(2)	(1)	(13)	35	2
Total Income Taxes	(5)	(1)	2	6	(13)	1	(2)	(1)	(13)	35	2
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	5	(3)	2	7	(48)	(6)	(14)	(4)	(39)	94	5
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	5	(3)	2	7	(48)	(6)	(14)	(4)	(39)	94	5
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	5	(3)	2	7	(48)	(6)	(14)	(4)	(39)	94	5

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	5	(3)	2	7	(48)	(6)	(14)	(4)	(39)	94	5
Charges and Credits Not Impacting Cash	3	13	29	36	78	47	53	30	19	100	85
Other	4	3	5	2	9	8	42	(2)	60	(110)	44
Cash Flow From Operations	12	13	35	45	39	50	81	24	40	84	135
Change in Working Capital / Other	1	(2)	(1)	1	0	(2)	1	3	(6)	(2)	(4)
Net Cash From Operating Activities	13	11	34	45	40	48	82	27	34	82	130
Total Capital Expenditures	(45)	(36)	(104)	(149)	(119)	(138)	(238)	(84)	(154)	(233)	(119)
Acquisitions, net	(5)	(12)	(12)	(7)	(115)	(0)	90	-	-	1	-
Other	5	1	6	17	3	(14)	13	(18)	16	(3)	(17)
Net Cash From Investing Activities	(44)	(47)	(111)	(139)	(231)	(152)	(135)	(101)	(139)	(236)	(137)
Net Change in Debt	-	-	-	-	-	28	(26)	50	104	69	9
Net Change in Common Stock	36	63	43	186	173	-	103	-	-	82	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	(2)	(4)	(2)	(4)	(1)	1	4	1	1	3	(3)
Net Cash From Financing Activities	34	60	41	182	172	29	81	50	105	153	6
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	2	24	(36)	88	(19)	(75)	28	(24)	-	0	(0)
Cash and Equivalents, Beginning of Year	16	17	45	10	97	75	-	24	-	-	-
Cash and Equivalents, End of Year	19	41	9	98	78	-	28	(0)	-	0	(0)

Source: BMO Capital Markets, Company Reports

Painted Pony Petroleum Ltd. (PONY - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	25	46	26	120	92	17	52	15	23	82	72
Net Property, Plant and Equipment	66	97	200	364	510	591	604	581	961	1,468	1,509
Other Assets	1	3	1	-	10	9	12	16	26	17	6
Total Assets	92	145	227	484	613	617	668	612	1,010	1,567	1,586
Total Current Liabilities	13	10	28	51	47	33	49	18	79	56	46
Long-term Debt	-	-	-	-	-	28	-	50	424	635	272
Deferred Income Taxes	-	-	-	5	-	-	-	-	-	6	8
Other Liabilities and Deferred Credits	2	2	4	11	15	16	13	17	34	36	417
Total Liabilities	15	12	32	67	62	76	62	85	538	733	744
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	67	123	178	377	550	538	617	538	520	783	784
Contributed Surplus (Paid-in Capital)	6	9	16	28	36	43	41	38	39	43	45
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	4	1	3	12	(36)	(41)	(52)	(49)	(87)	6	12
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	2	2
Total Shareholders' Equity	77	133	196	417	551	540	606	527	472	833	842
Total Liabilities and Shareholders' Equity	92	145	227	484	613	617	668	612	1,010	1,567	1,586
Return on Capital Employed (ROCE)	**7.0%**	**-4.0%**	**1.3%**	**2.6%**	**-11.3%**	**-0.9%**	**-2.1%**	**-0.4%**	**-3.4%**	**10.8%**	**4.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$73.25	$47.74	$56.05	$48.39	$31.10	$31.78	$31.51	$13.51	$14.12	$16.31	$18.93	$17.10	$18.01
Production Costs	$18.21	$14.88	$12.51	$12.19	$10.85	$12.01	$10.64	$6.90	$5.13	$5.60	$7.05	$6.18	$6.65
Exploration	$0.00	$0.00	$0.00	$0.07	$4.25	$1.83	$2.77	$0.00	$0.00	$0.00	$0.00	$0.00	$0.25
DD&A	$34.19	$31.26	$29.89	$21.81	$18.19	$14.00	$9.98	$6.23	$4.41	$4.75	$4.66	$4.64	$5.29
G&A / Other	$4.33	$3.82	$2.77	$2.93	$2.30	$2.86	$2.21	$1.71	$1.08	$0.93	$0.74	$0.87	$1.08
Pre-tax Results of Operations	$16.51	-$2.22	$10.89	$11.38	-$4.48	$1.08	$5.90	-$1.33	$3.51	$5.03	$6.48	$5.40	$4.75
Income Taxes	$4.13	-$0.61	$5.92	$5.62	-$0.97	$0.27	$0.84	-$0.31	$0.90	$1.36	$1.99	$1.50	$1.15
Results of Operations	$12.38	-$1.61	$4.96	$5.77	-$3.52	$0.81	$5.06	-$1.02	$2.61	$3.67	$4.49	$3.90	$3.60

Source: BMO Capital Markets, Company Reports

Painted Pony Petroleum Ltd. (PONY - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	1.6	2.9	5.5	14.0	27.7	39.7	63.5	78.0	113.8	204.9	265.8	194.8	145.2
Liquids Production (b/d)	350	811	1,498	1,415	1,387	1,446	1,246	725	1,381	3,183	4,468	3,011	2,201
Total Production (boe/d)	625	1,290	2,421	3,753	6,007	8,064	11,830	13,727	20,344	37,334	48,770	35,483	26,401
% Gas Production	44%	37%	38%	62%	77%	82%	89%	95%	93%	91%	91%	92%	92%
% Oil Production	56%	63%	62%	38%	23%	18%	11%	5%	7%	9%	9%	8%	8%
Proven Reserves:													
Closing Gas Reserves (bcf)	6.4	6.0	36.6	136.9	199.1	291.0	595.5	1,609.5	2,118.3	2,541.5	2,383.8	2,347.9	1,849.7
Closing Oil Reserves (mmbbls)	1.2	2.3	3.4	5.3	6.0	6.1	10.7	27.9	33.6	27.5	33.3	31.5	26.6
Closing Total Proven Reserves (mmboe)	2.2	3.3	9.5	28.1	39.1	54.6	110.0	296.1	386.6	451.1	430.6	422.8	334.9
% Gas Reserves	48%	31%	64%	81%	85%	89%	90%	91%	91%	94%	92%	93%	92%
% Oil Reserves	52%	69%	36%	19%	15%	11%	10%	9%	9%	6%	8%	7%	8%
Proven Reserve Life Index	9.9	7.0	10.9	20.4	17.8	18.5	25.5	59.1	52.1	33.1	24.2	36.5	38.8
Proven Reserve Additions:													
Gas Additions (bcf)	7.0	0.6	32.1	102.2	70.2	106.4	332.2	1,055.6	561.5	508.8	25.1	1,095.4	2,483.2
Oil Additions (mmbbls)	1.1	1.4	1.7	2.3	1.1	0.7	5.2	17.3	6.1	-5.0	7.9	8.9	31.5
Total Additions (mmboe)	2.3	1.5	7.0	19.4	12.8	18.4	60.6	193.3	99.6	79.8	12.1	191.5	445.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	1.4	0.6	6.3	16.3	8.2	0.0	50.5	94.4	86.4	11.7	0.0	98.1	243.1
Net Acquisitions	0.8	0.5	0.5	1.1	3.9	-	(2.4)	-	0.7	90.0	-	90.7	88.3
Revisions of Estimates	0.0	0.4	0.2	1.9	0.6	18.4	12.5	98.9	12.5	(21.9)	12.1	2.6	114.0
Components as % of Total Additions:													
Extensions, Discoveries and Additions	63.2%	41.4%	89.8%	84.4%	64.4%	0.0%	83.4%	48.8%	86.7%	14.7%	0.0%	51.3%	54.6%
Net Acquisitions	35.3%	33.1%	7.8%	5.6%	30.7%	0.0%	-4.0%	0.0%	0.7%	112.8%	0.0%	47.4%	19.8%
Revisions of Estimates	1.5%	25.5%	2.4%	10.0%	4.8%	100.0%	20.6%	51.2%	12.5%	-27.5%	100.0%	1.4%	25.6%
Additions as % of Production:													
Gas	1160.7%	60.6%	1590.0%	1995.2%	693.7%	734.2%	1433.2%	3707.4%	1352.1%	680.3%	25.8%	513.4%	937.1%
Oil	883.2%	477.3%	306.4%	450.7%	216.3%	nm	1154.3%	6550.8%	1201.9%	-433.5%	485.0%	271.0%	785.0%
Total	1005.2%	322.7%	795.9%	1412.8%	583.4%	nm	1403.8%	3857.7%	1341.9%	585.4%	67.9%	492.9%	924.4%
Additions as % of Reserves:													
Gas	109.4%	10.5%	87.9%	74.6%	35.2%	36.6%	55.8%	65.6%	26.5%	20.0%	1.1%	46.7%	134.2%
Oil	96.0%	61.6%	49.0%	44.3%	18.4%	10.7%	48.9%	62.2%	18.0%	-18.3%	23.8%	28.4%	118.5%
Total	102.4%	46.0%	73.9%	68.9%	32.7%	33.7%	55.1%	65.3%	25.8%	17.7%	2.8%	45.3%	133.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$8.0	$6.3	$27.1	$30.0	$36.0	$33.7	$62.3	$0.6	$1.0	$4.0	$0.6	$5.7	$68.6
Exploration & Development	$36.9	$29.4	$77.1	$118.9	$84.9	$104.8	$171.5	$79.2	$149.2	$224.8	$113.2	$487.2	$737.9
Net Acquisitions	$19.9	$12.0	$12.5	$8.8	$112.8	$0.3	-$90.4	$0.0	-$0.3	$160.0	$0.0	$159.7	$69.3
Total Expenditures	$64.8	$47.7	$116.7	$157.7	$233.8	$138.7	$143.4	$79.8	$149.9	$388.9	$113.8	$652.6	$875.8
Expenditures as % of Total:													
Land & Seismic	12.3%	13.2%	23.2%	19.0%	15.4%	24.3%	43.5%	0.8%	0.7%	1.0%	0.5%	0.9%	7.8%
Exploration & Development	57.0%	61.7%	66.1%	75.4%	36.3%	75.5%	119.6%	99.2%	99.5%	57.8%	99.4%	74.7%	84.3%
Net Acquisitions	30.7%	25.1%	10.7%	5.6%	48.3%	0.2%	-63.1%	0.0%	-0.2%	41.1%	0.0%	24.5%	7.9%
Cashflow (US$million)	$12.0	$13.4	$35.2	$44.7	$39.4	$49.8	$80.5	$24.2	$39.8	$84.2	$134.8	$258.8	$363.5
Cashflow (US$/boe)	$52.78	$28.46	$39.87	$32.60	$17.95	$16.90	$18.65	$4.82	$5.36	$6.18	$7.57	$6.66	$7.54
Recycle Ratio	1.9x	0.9x	2.4x	4.0x	1.0x	2.2x	7.9x	11.7x	3.6x	1.3x	0.8x	2.0x	3.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$30.29	$35.16	$16.07	$8.15	$13.65	$7.53	$3.71	$0.41	$1.52	-$22.39	$9.41	$4.89	$2.26
Net Acquisition Costs	$24.57	$23.82	$22.71	$8.08	$28.70	nm	$37.24	na	-$0.40	$1.78	na	$1.76	$0.78
All Sources (incl. revisions)	$28.27	$31.40	$16.59	$8.15	$18.28	$7.55	$2.37	$0.41	$1.50	$4.88	$9.41	$3.41	$1.97
Exploration & Development (excl. revisions)	$31.00	$56.77	$16.50	$9.12	$14.67	nm	$4.63	$0.85	$1.74	$19.53	nm	$5.02	$3.32
Net Acquisition Costs	$24.57	$23.82	$22.71	$8.08	$28.70	nm	$37.24	na	-$0.40	$1.78	nm	$1.76	$0.78
All Sources (excl. revisions)	$28.69	$42.14	$17.00	$9.05	$19.20	nm	$2.98	$0.85	$1.72	$3.82	nm	$3.46	$2.64

Source: BMO Capital Markets, Company Reports

Painted Pony Petroleum Ltd. (PONY - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	18.21	14.88	12.51	12.19	10.85	12.01	10.64	6.90	5.13	5.60	7.05	6.18	6.65
Exploration Expense	-	-	-	0.07	4.25	1.83	2.77	-	-	-	-	-	0.25
G&A/Other	4.33	3.82	2.77	2.93	2.30	2.86	2.21	1.71	1.08	0.93	0.74	0.87	1.08
F&D Costs (1-Year)	28.27	31.40	16.59	8.15	18.28	7.55	2.37	0.41	1.50	4.88	9.41	3.41	1.97
Return on Capital	17.49	13.65	11.39	11.21	21.55	9.31	4.24	0.72	2.63	8.55	16.44	5.98	3.46
Income Taxes	5.83	5.16	13.59	10.92	5.91	3.10	0.70	0.22	0.91	3.17	7.29	2.30	1.11
Breakeven Oil Price	**74.13**	**68.92**	**56.85**	**45.47**	**63.13**	**36.65**	**22.92**	**9.96**	**11.25**	**23.13**	**40.93**	**18.73**	**14.52**
Quality Differential	5.28	0.92	3.70	8.49	7.75	6.10	1.16	5.33	5.25	7.43	6.04	6.24	5.04
Required Brent Price	**79.41**	**69.83**	**60.55**	**53.96**	**70.88**	**42.75**	**24.09**	**15.29**	**16.49**	**30.56**	**46.97**	**24.97**	**19.56**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	22.73	19.43	17.00	23.17	28.95	31.53	27.38	21.40	15.54	17.70	21.74	19.14	20.24
Exploration Expense	-	-	-	0.13	11.35	4.79	7.12	-	-	-	-	-	0.75
G&A/Other	5.41	4.99	3.77	5.58	6.13	7.50	5.69	5.31	3.26	2.95	2.27	2.69	3.28
F&D Costs (1-Year)	36.69	32.85	35.16	24.63	39.09	27.68	6.29	1.18	4.63	23.69	12.67	11.29	5.92
Return on Capital	22.14	15.12	17.88	23.66	37.42	28.79	11.07	2.08	8.11	41.48	22.17	19.78	10.37
Income Taxes	7.38	5.72	21.32	23.06	10.27	9.60	1.83	0.64	2.79	15.39	9.83	7.61	3.31
Breakeven Oil Price	**94.34**	**78.12**	**95.13**	**100.22**	**133.21**	**109.89**	**59.40**	**30.61**	**34.33**	**101.20**	**68.67**	**60.51**	**43.88**
Quality Differential	6.59	1.20	5.03	16.14	20.69	15.99	2.99	16.54	15.89	23.47	18.60	19.32	15.50
Required Brent Price	**100.94**	**79.31**	**100.16**	**116.37**	**153.90**	**125.89**	**62.39**	**47.15**	**50.22**	**124.67**	**87.26**	**79.83**	**59.38**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	22.73	19.43	17.00	23.17	28.95	31.53	27.38	21.40	15.54	17.70	21.74	19.14	20.24
Exploration Expense	-	-	-	0.13	11.35	4.79	7.12	-	-	-	-	-	0.75
G&A/Other	5.41	4.99	3.77	5.58	6.13	7.50	5.69	5.31	3.26	2.95	2.27	2.69	3.28
F&D Costs (1-Year)	44.66	47.79	76.46	57.44	93.21	59.04	32.74	21.71	10.41	21.00	19.70	16.86	21.11
Return on Capital	26.91	22.15	38.87	55.03	89.15	61.93	57.35	38.03	18.24	36.80	34.52	29.25	37.05
Income Taxes	8.97	8.38	46.37	53.64	24.46	20.64	9.50	11.66	6.28	13.65	15.31	11.26	11.84
Breakeven Oil Price	**108.68**	**102.74**	**182.46**	**194.99**	**253.24**	**185.44**	**139.80**	**98.10**	**53.72**	**92.10**	**93.53**	**79.20**	**94.27**
Quality Differential	6.59	1.20	5.03	16.14	20.69	15.99	2.99	16.54	15.89	23.47	18.60	19.32	15.50
Required Brent Price	**115.27**	**103.94**	**187.49**	**211.13**	**273.93**	**201.43**	**142.79**	**114.64**	**69.61**	**115.57**	**112.13**	**98.51**	**109.76**

Source: BMO Capital Markets, Company Reports

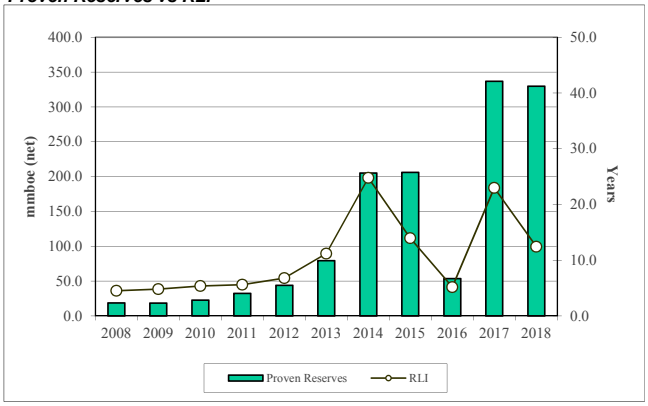
See pages F1 to F4 for analyst coverage.

Paramount Resources Ltd. (POU - TSX) US$, net

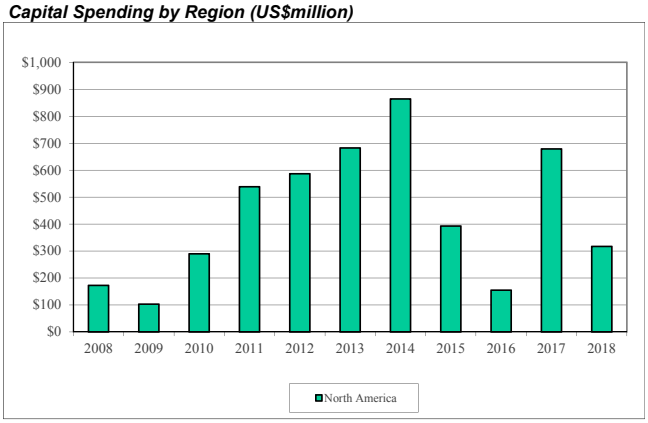
- Paramount recorded a loss from operations of $13.98/boe versus a loss of $9.60/boe in 2017.
- One-year F&D costs were $8.21/boe compared to $2.28/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $11.08/boe from $4.50/boe, while costs for PD reserves jumped to $69.36/boe from $12.99/boe last year.
- Paramount's 2018 costs imply a required Brent breakeven oil price of $80.67/boe, while its PD costs suggest an adjusted Brent breakeven oil price of $205.09/boe.
- The company reported loss on capital of 10.8% in 2018 compared to last year's 9.3% loss.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rate.

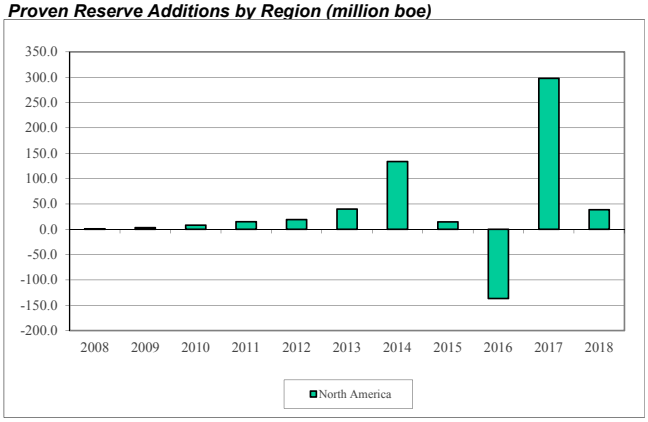
Proven Reserves vs RLI



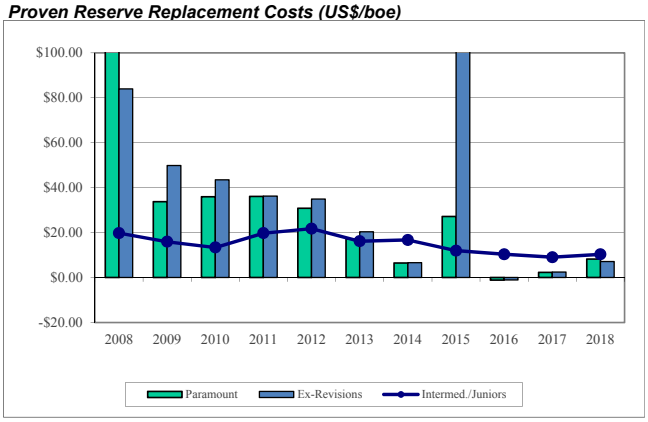
Capital Spending by Region (US$million)



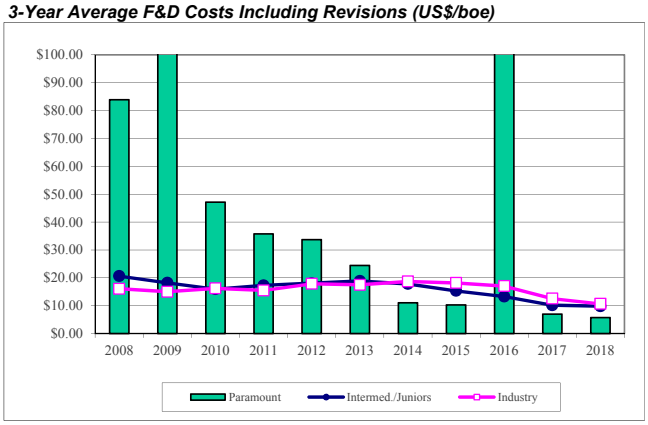
Proven Reserve Additions by Region (million boe)



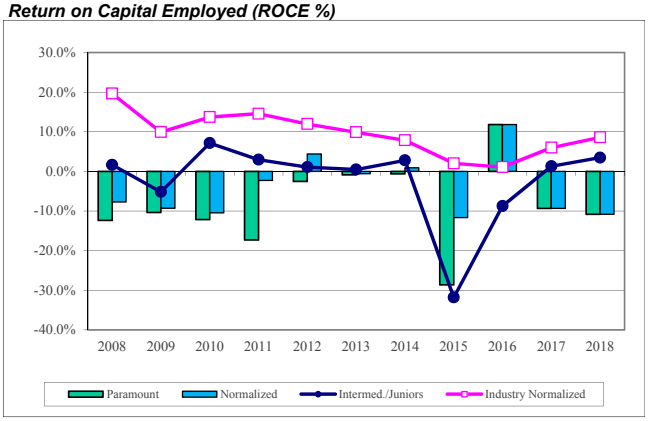
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

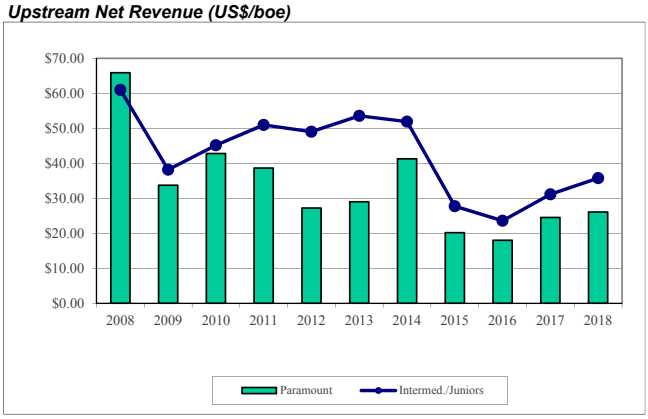
See pages F1 to F4 for analyst coverage.

Paramount Resources Ltd. (POU - TSX)

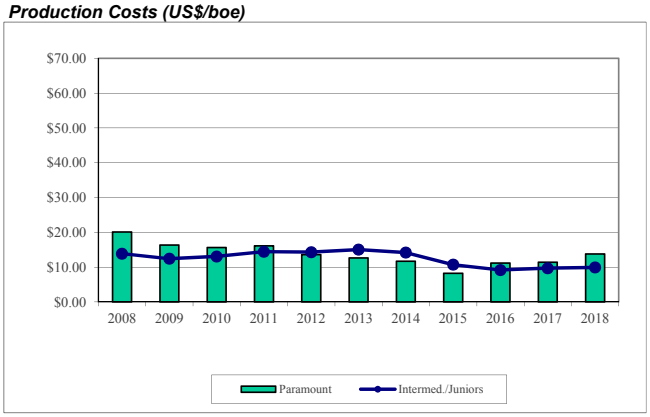
US$, net

North America

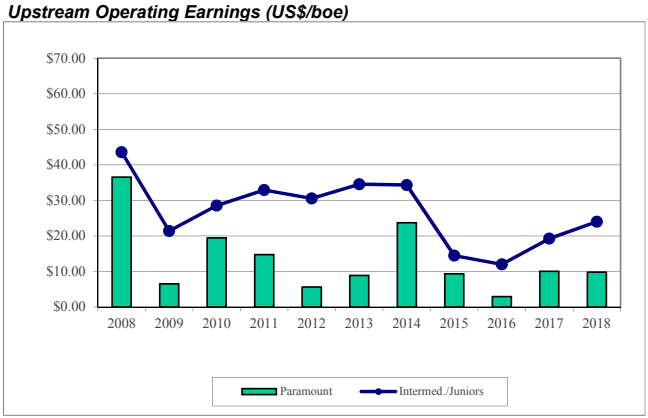
Upstream Net Revenue (US$/boe)



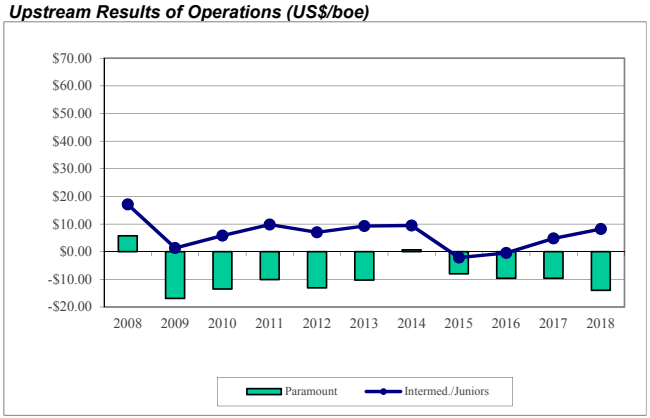
Production Costs (US$/boe)



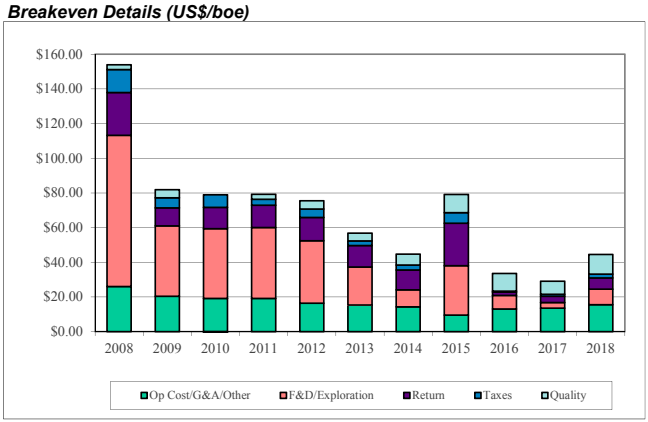
Upstream Operating Earnings (US$/boe)



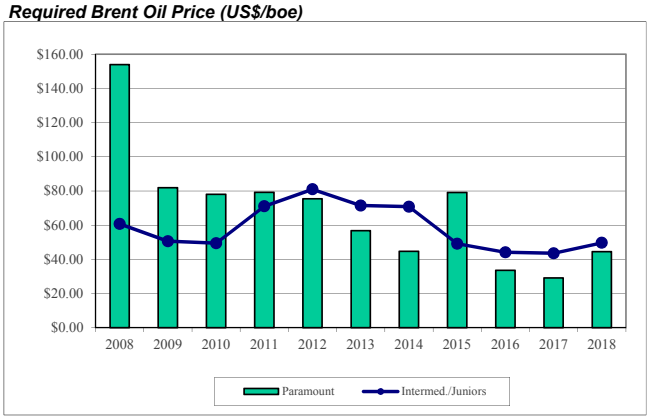
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Paramount Resources Ltd. (POU - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	255	124	158	222	171	214	301	287	186	360	692
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	32	(3)	20	(2)	2	(4)	3	41	0	(3)	5
Total Revenue and Other Income	287	121	178	220	174	210	304	328	187	357	697
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	83	62	66	93	88	90	97	122	116	167	366
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	14	26	18	28	34	35	27	19	20	14	21
General and Administrative	24	15	15	17	18	19	22	19	20	32	45
Depreciation, Depletion and Amortization	114	125	173	158	152	151	189	286	163	335	754
Interest, net	9	10	13	35	35	51	64	87	61	8	24
Other	139	18	83	180	(31)	(36)	(33)	506	(1,195)	(246)	(32)
Earnings Before Income Tax	(96)	(134)	(189)	(297)	(126)	(103)	(68)	(716)	998	34	(433)
Current Income Taxes	(4)	(1)	0	0	1	5	(0)	0	-	-	-
Future Income Taxes	18	(47)	(70)	(63)	(34)	(23)	(3)	(10)	118	(107)	(149)
Total Income Taxes	14	(48)	(70)	(63)	(34)	(18)	(3)	(10)	118	(107)	(149)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(110)	(86)	(119)	(235)	(92)	(85)	(65)	(706)	880	141	(283)
Discontinued Operations/Extraordinary Items	-	-	-	-	30	27	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(110)	(86)	(119)	(235)	(62)	(57)	(65)	(706)	880	141	(283)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(110)	(86)	(119)	(235)	(62)	(57)	(65)	(706)	880	141	(283)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(110)	(86)	(119)	(235)	(92)	(85)	(65)	(706)	880	141	(283)
Charges and Credits Not Impacting Cash	145	104	120	158	152	151	189	286	163	398	904
Other	134	36	83	159	(47)	(38)	(12)	483	(1,021)	(418)	(454)
Cash Flow From Operations	169	53	84	83	13	28	112	63	23	121	167
Change in Working Capital / Other	14	10	(23)	3	12	(12)	(5)	3	12	(24)	5
Net Cash From Operating Activities	184	63	62	86	25	16	107	66	35	97	172
Total Capital Expenditures	(144)	(142)	(290)	(531)	(624)	(715)	(853)	(387)	(152)	(420)	(448)
Acquisitions, net	-	-	(45)	(3)	294	46	98	5	1,541	(234)	141
Other	-	-	10	42	21	38	36	(104)	(5)	(5)	20
Net Cash From Investing Activities	(144)	(142)	(324)	(492)	(309)	(632)	(719)	(485)	1,385	(659)	(287)
Net Change in Debt	(46)	26	183	91	251	248	301	379	(950)	182	90
Net Change in Common Stock	(6)	77	61	272	125	211	322	33	(6)	(4)	(58)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	(15)	11	-	(3)	(3)	(4)	(4)	(0)	(2)	-	-
Net Cash From Financing Activities	(67)	113	245	360	372	455	618	412	(959)	179	32
Effect of Exchange Rate on Cash	-	-	-	0	(1)	1	0	3	(0)	(1)	2
Net Increase/(Decrease) in Cash	(28)	34	(18)	(46)	88	(159)	7	(5)	461	(384)	(80)
Cash and Equivalents, Beginning of Year	79	48	91	76	29	142	10	14	9	480	95
Cash and Equivalents, End of Year	51	82	72	29	117	(17)	17	9	470	95	15

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Paramount Resources Ltd. (POU - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	110	107	107	131	195	51	73	83	579	233	166
Net Property, Plant and Equipment	723	631	859	1,213	1,484	1,945	2,478	1,942	895	3,137	1,681
Other Assets	221	233	371	401	359	381	347	153	82	555	1,332
Total Assets	1,054	971	1,337	1,746	2,038	2,377	2,898	2,178	1,556	3,925	3,178
Total Current Liabilities	79	77	147	178	225	285	316	163	155	219	203
Long-term Debt	103	82	286	432	661	857	1,096	1,371	-	541	629
Deferred Income Taxes	55	36	-	-	-	-	-	-	5	-	-
Other Liabilities and Deferred Credits	82	94	141	303	301	233	260	214	160	1,281	609
Total Liabilities	320	290	574	912	1,187	1,375	1,672	1,748	320	2,041	1,441
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	286	346	446	820	922	1,136	1,452	1,290	1,239	1,735	1,686
Contributed Surplus (Paid-in Capital)	2	3	4	67	-	73	69	71	87	99	111
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	446	329	244	(105)	(166)	(218)	(268)	(938)	(115)	39	16
Other / Comprehensive Income (Loss)	-	3	70	51	95	12	(27)	7	24	12	(76)
Total Shareholders' Equity	734	681	763	833	852	1,003	1,226	430	1,235	1,884	1,737
Total Liabilities and Shareholders' Equity	1,054	971	1,337	1,746	2,038	2,377	2,898	2,178	1,556	3,925	3,178
Return on Capital Employed (ROCE)	**-12.3%**	**-10.4%**	**-12.1%**	**-17.3%**	**-2.5%**	**-0.8%**	**-0.6%**	**-28.6%**	**11.9%**	**-9.3%**	**-10.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$65.89	$33.73	$42.82	$38.66	$27.21	$29.03	$41.31	$20.20	$18.00	$24.54	$26.07	$24.01	$25.18
Production Costs	$20.11	$16.36	$15.64	$16.14	$13.62	$12.65	$11.72	$8.26	$11.20	$11.40	$13.79	$12.59	$11.64
Exploration	$3.29	$6.88	$4.21	$4.81	$5.18	$4.87	$3.28	$1.32	$1.98	$0.96	$0.79	$1.08	$1.37
DD&A	$27.74	$32.85	$40.87	$27.51	$23.44	$21.32	$22.87	$19.39	$15.77	$22.82	$28.43	$24.29	$23.16
G&A / Other	$5.94	$3.99	$3.54	$2.98	$2.80	$2.67	$2.61	$1.27	$1.89	$2.16	$1.70	$1.87	$1.83
Pre-tax Results of Operations	$8.81	-$26.35	-$21.43	-$12.77	-$17.83	-$12.47	$0.83	-$10.03	-$12.84	-$12.80	-$18.64	-$15.81	-$12.82
Income Taxes	$3.08	-$9.44	-$7.96	-$2.69	-$4.76	-$2.19	$0.17	-$2.01	-$3.21	-$3.20	-$4.66	-$3.95	-$2.95
Results of Operations	$5.73	-$16.91	-$13.47	-$10.09	-$13.07	-$10.28	$0.66	-$8.03	-$9.63	-$9.60	-$13.98	-$11.86	-$9.87

Source: BMO Capital Markets, Company Reports

Paramount Resources Ltd. (POU - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	50.6	45.2	53.3	75.7	90.6	100.2	104.7	152.2	96.8	149.4	280.1	175.4	156.6
Liquids Production (b/d)	2,844	2,875	2,705	3,147	2,654	2,740	5,246	15,088	12,227	15,284	26,014	17,842	14,772
Total Production (boe/d)	11,281	10,403	11,588	15,764	17,748	19,432	22,693	40,462	28,363	40,181	72,698	47,081	40,879
% Gas Production	75%	72%	77%	80%	85%	86%	77%	63%	57%	62%	64%	62%	64%
% Oil Production	25%	28%	23%	20%	15%	14%	23%	37%	43%	38%	36%	38%	36%
Proven Reserves:													
Closing Gas Reserves (bcf)	81.2	79.2	103.3	150.0	184.8	284.5	667.3	672.7	219.5	1,297.0	1,174.1	896.9	806.1
Closing Oil Reserves (mmbbls)	5.0	5.0	5.5	7.1	13.0	31.8	93.9	93.9	16.9	120.5	134.0	90.5	91.8
Closing Total Proven Reserves (mmboe)	18.5	18.2	22.7	32.1	43.8	79.2	205.1	206.0	53.5	336.7	329.7	240.0	226.2
% Gas Reserves	73%	72%	76%	78%	70%	60%	54%	54%	68%	64%	59%	62%	59%
% Oil Reserves	27%	28%	24%	22%	30%	40%	46%	46%	32%	36%	41%	38%	41%
Proven Reserve Life Index	4.5	4.8	5.4	5.6	7.0	11.5	25.3	14.0	5.1	22.9	12.5	13.5	16.0
Proven Reserve Additions:													
Gas Additions (bcf)	(1.4)	12.1	39.3	73.8	69.5	130.4	419.8	62.0	-400.8	1,130.9	74.7	804.8	1,286.6
Oil Additions (mmbbls)	1.1	1.0	1.5	2.6	7.4	18.2	63.7	4.1	-70.0	109.2	26.1	65.4	133.2
Total Additions (mmboe)	0.9	3.0	8.1	14.9	19.0	40.0	133.7	14.4	-136.8	297.7	38.6	199.5	347.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	2.3	2.1	5.1	10.2	18.2	35.5	132.2	0.8	22.5	25.9	49.3	97.7	230.7
Net Acquisitions	(0.2)	0.0	1.5	4.7	-1.4	-2.0	-2.3	0.1	-170.7	253.4	-4.9	77.9	75.7
Revisions of Estimates	(1.2)	1.0	1.4	0.1	2.2	6.5	3.8	13.6	11.4	18.4	-5.9	23.9	41.2
Components as % of Total Additions:													
Extensions, Discoveries and Additions	257.5%	67.7%	63.8%	68.2%	95.8%	88.9%	98.9%	5.7%	-16.4%	8.7%	127.8%	49.0%	66.4%
Net Acquisitions	-22.7%	0.0%	18.8%	31.4%	-7.5%	-5.1%	-1.7%	0.4%	124.8%	85.1%	-12.6%	39.0%	21.8%
Revisions of Estimates	-134.8%	32.3%	17.4%	0.4%	11.7%	16.2%	2.8%	93.9%	-8.4%	6.2%	-15.2%	12.0%	11.9%
Additions as % of Production:													
Gas	-7.8%	73.5%	201.9%	267.1%	210.2%	356.8%	1098.8%	111.6%	-1134.2%	2074.1%	73.0%	418.9%	450.1%
Oil	107.4%	97.6%	152.8%	226.3%	767.2%	1820.9%	3327.0%	74.6%	-1568.2%	1958.1%	275.1%	0.3%	0.5%
Total	21.3%	80.2%	190.4%	259.0%	293.5%	563.3%	1613.9%	97.8%	-1321.3%	2030.0%	145.4%	387.0%	466.0%
Additions as % of Reserves:													
Gas	-1.8%	15.3%	38.0%	49.2%	37.6%	45.8%	62.9%	9.2%	-182.6%	87.2%	6.4%	89.7%	159.6%
Oil	22.3%	20.4%	27.6%	36.5%	57.0%	57.2%	67.8%	4.4%	-413.6%	90.6%	19.5%	72.2%	145.0%
Total	4.7%	16.7%	35.5%	46.4%	43.4%	50.4%	65.2%	7.0%	-255.7%	88.4%	11.7%	83.1%	153.7%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$6.7	$0.0	$7.4	$5.6	$6.0	$6.1	$6.1	$3.4	$2.2	$5.3	$9.7	$17.2	$26.8
Exploration & Development	$169.3	$82.4	$186.1	$465.7	$517.8	$603.5	$732.3	$334.2	$127.8	$410.1	$439.2	$977.1	$2,043.6
Net Acquisitions	-$3.4	$20.4	$96.1	$67.0	$62.5	$72.6	$125.7	$54.9	$24.9	$263.6	-$132.1	$156.4	$337.0
Total Expenditures	$172.6	$102.8	$289.6	$538.2	$586.3	$682.2	$864.0	$392.6	$155.0	$679.0	$316.8	$1,150.7	$2,407.3
Expenditures as % of Total:													
Land & Seismic	3.9%	0.0%	2.5%	1.0%	1.0%	0.9%	0.7%	0.9%	1.4%	0.8%	3.1%	1.5%	1.1%
Exploration & Development	98.1%	80.1%	64.3%	86.5%	88.3%	88.5%	84.7%	85.1%	82.5%	60.4%	138.6%	84.9%	84.9%
Net Acquisitions	-2.0%	19.9%	33.2%	12.4%	10.7%	10.6%	14.5%	14.0%	16.1%	38.8%	-41.7%	13.6%	14.0%
Cashflow (US$million)	$169.4	$158.2	$84.3	$97.4	$51.6	$69.8	$127.7	$72.6	$22.5	$121.4	$167.0	$310.9	$511.2
Cashflow (US$/boe)	$41.13	$41.66	$19.94	$16.92	$7.97	$9.85	$15.42	$4.92	$2.18	$8.28	$6.29	$6.03	$6.85
Recycle Ratio	0.2x	1.2x	0.6x	0.5x	0.3x	0.6x	2.4x	0.2x	-1.9x	3.6x	0.8x	1.0x	1.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$163.91	$27.05	$29.56	$46.11	$25.61	$14.52	$5.43	$23.48	$3.84	$9.38	$10.34	$8.18	$7.61
Net Acquisition Costs	$17.10	na	$63.62	$14.31	-$43.54	-$35.61	-$55.66	$876.56	-$0.15	$1.04	$27.19	$2.01	$4.45
All Sources (incl. revisions)	$197.21	$33.76	$35.95	$36.12	$30.84	$17.08	$6.46	$27.18	-$1.13	$2.28	$8.21	$5.77	$6.92
Exploration & Development (excl. revisions)	$78.10	$39.98	$37.62	$46.37	$28.75	$17.17	$5.59	$410.63	$5.79	$16.02	$9.11	$10.18	$8.97
Net Acquisition Costs	$17.10	na	$63.62	$14.31	-$43.54	-$35.61	-$55.66	$876.56	-$0.15	$1.04	$27.19	$2.01	$4.45
All Sources (excl. revisions)	$83.99	$49.90	$43.52	$36.26	$34.93	$20.38	$6.65	$443.61	-$1.05	$2.43	$7.13	$6.55	$7.86

Source: BMO Capital Markets, Company Reports

Paramount Resources Ltd. (POU - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	20.11	16.36	15.64	16.14	13.62	12.65	11.72	8.26	11.20	11.40	13.79	12.59	11.64
Exploration Expense	3.29	6.88	4.21	4.81	5.18	4.87	3.28	1.32	1.98	0.96	0.79	1.08	1.37
G&A/Other	5.94	3.99	3.54	2.98	2.80	2.67	2.61	1.27	1.89	2.16	1.70	1.87	1.83
F&D Costs (1-Year)	83.92	33.76	35.95	36.12	30.84	17.08	6.46	27.18	5.79	2.28	8.21	5.43	9.99
Return on Capital	24.61	10.43	12.31	12.85	13.42	12.40	11.48	24.50	1.88	3.57	6.49	4.69	10.40
Income Taxes	13.25	5.82	7.27	3.42	4.89	2.65	2.87	6.13	0.63	1.19	2.16	1.56	3.11
Breakeven Oil Price	**151.12**	**77.24**	**78.90**	**76.31**	**70.74**	**52.31**	**38.43**	**68.65**	**23.36**	**21.56**	**33.16**	**27.22**	**38.33**
Quality Differential	2.79	4.65	(0.90)	2.86	4.71	4.45	6.29	10.43	10.17	7.53	11.35	9.69	9.16
Required Brent Price	**153.91**	**81.89**	**78.01**	**79.18**	**75.45**	**56.76**	**44.72**	**79.08**	**33.53**	**29.09**	**44.51**	**36.91**	**47.48**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	30.49	27.25	29.98	37.67	40.33	31.43	21.26	11.83	19.29	22.06	28.39	24.51	20.99
Exploration Expense	4.99	11.46	8.06	11.22	15.33	12.09	5.95	1.89	3.40	1.85	1.63	2.10	2.47
G&A/Other	9.01	6.65	6.79	6.95	8.30	6.63	4.74	1.81	3.25	4.18	3.51	3.64	3.31
F&D Costs (1-Year)	99.14	53.28	72.95	88.03	58.67	27.47	9.31	41.45	10.64	4.50	11.08	8.74	15.40
Return on Capital	29.26	16.34	25.16	32.02	33.30	28.88	20.41	39.50	3.07	6.82	9.52	7.39	17.33
Income Taxes	15.75	9.12	14.86	8.53	12.13	6.16	5.10	9.88	1.02	2.27	3.17	2.46	5.18
Breakeven Oil Price	**188.63**	**124.10**	**157.79**	**184.42**	**168.05**	**112.66**	**66.77**	**106.36**	**40.67**	**41.68**	**57.30**	**48.84**	**64.67**
Quality Differential	4.23	7.75	(1.72)	6.68	13.96	11.06	11.42	14.94	17.51	14.57	23.38	18.49	16.36
Required Brent Price	**192.86**	**131.85**	**156.07**	**191.10**	**182.00**	**123.72**	**78.19**	**121.30**	**58.18**	**56.25**	**80.67**	**67.33**	**81.03**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	30.49	27.25	29.98	37.67	40.33	31.43	21.26	11.83	19.29	22.06	28.39	24.51	20.99
Exploration Expense	4.99	11.46	8.06	11.22	15.33	12.09	5.95	1.89	3.40	1.85	1.63	2.10	2.47
G&A/Other	9.01	6.65	6.79	6.95	8.30	6.63	4.74	1.81	3.25	4.18	3.51	3.64	3.31
F&D Costs (1-Year)	155.53	40.75	76.17	271.72	50.25	57.84	67.16	33.67	36.40	12.99	69.36	19.60	43.92
Return on Capital	46.04	12.58	26.26	99.53	28.38	61.32	159.68	32.12	10.49	18.73	59.11	16.74	49.31
Income Taxes	24.79	7.02	15.51	26.51	10.34	13.09	39.92	8.03	3.50	6.24	19.70	5.58	14.73
Breakeven Oil Price	**270.84**	**105.70**	**162.76**	**453.61**	**152.92**	**182.39**	**298.71**	**89.35**	**76.33**	**66.05**	**181.71**	**72.16**	**134.73**
Quality Differential	4.23	7.75	(1.72)	6.68	13.96	11.06	11.42	14.94	17.51	14.57	23.38	18.49	16.36
Required Brent Price	**275.06**	**113.46**	**161.04**	**460.29**	**166.88**	**193.45**	**310.13**	**104.29**	**93.84**	**80.61**	**205.09**	**90.65**	**151.09**

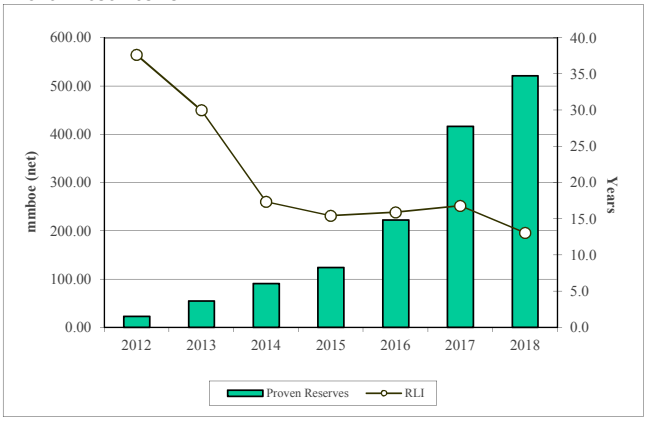
Source: BMO Capital Markets, Company Reports

Parsley Energy (PE - NYSE)

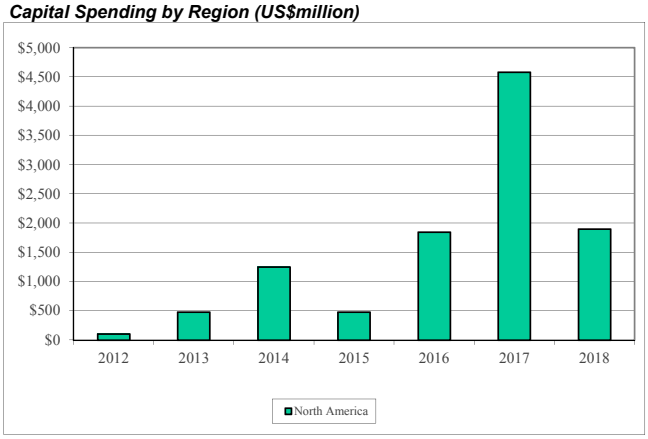
US$, net

- Parsley reported results of operations of $16.12/boe in 2018 versus results of $10.66/boe in 2017.
- The company's one-year F&D costs came in lower at $11.33/boe compared to $20.34/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $13.41/boe from $23.29/boe, while the costs for PD reserves dropped to $14.80/boe from $40.30/boe.
- Parsley's 2018 results imply a required Brent breakeven oil price of $60.29/boe on total proved reserves and $63.06/boe on proved developed reserves.
- The company reported ROCE of 6.3% in 2018.

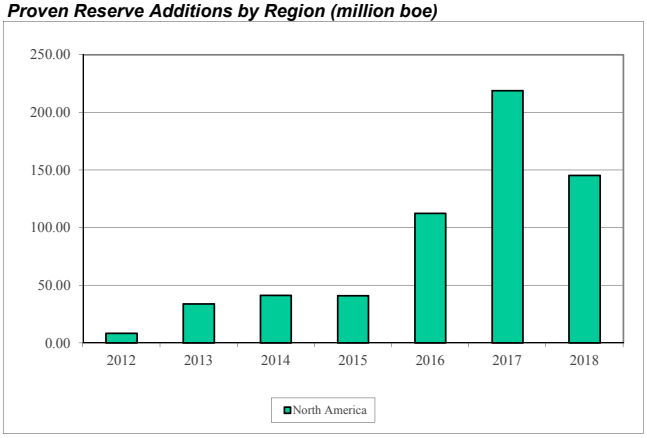
Proven Reserves vs RLI



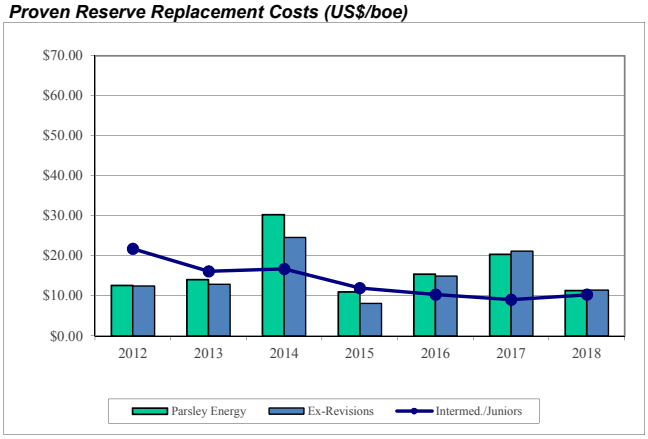
Capital Spending by Region (US$million)



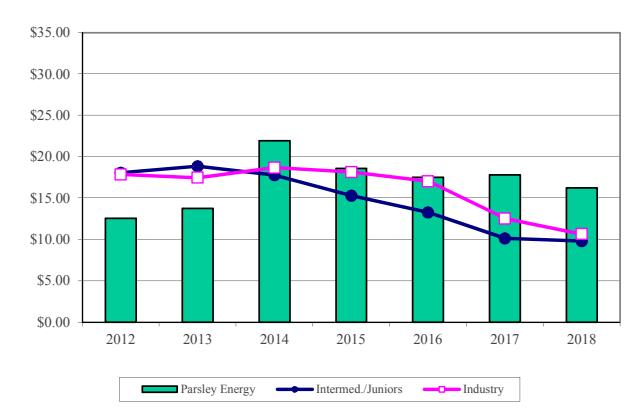
Proven Reserve Additions by Region (million boe)



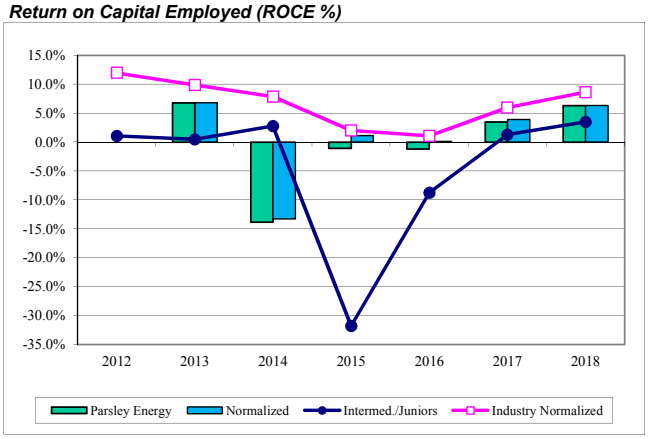
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



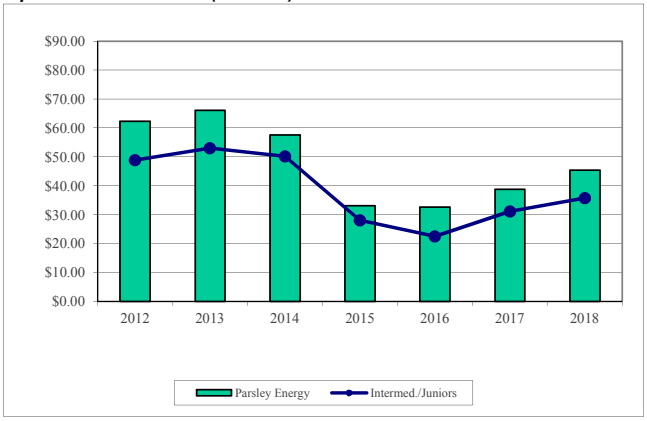
Source: BMO Capital Markets, Company Reports

Parsley Energy (PE - NYSE)

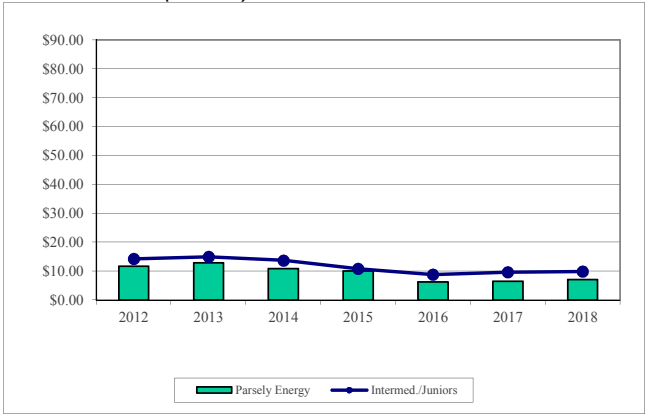
US$/boe, net

North America

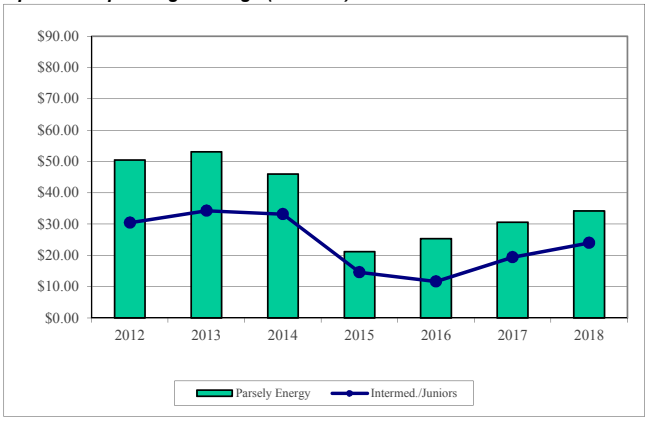
Upstream Net Revenue (US$/boe)



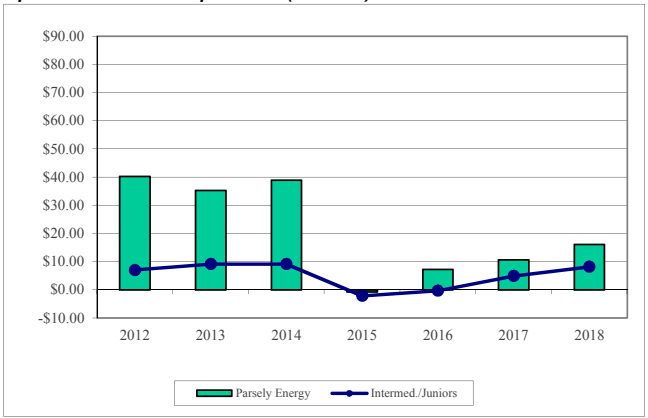
Production Costs (US$/boe)



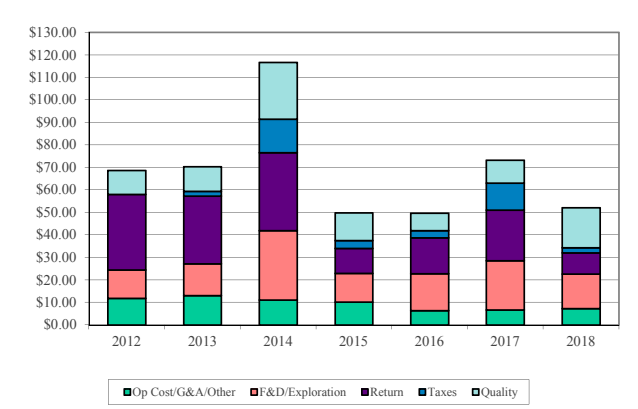
Upstream Operating Earnings (US$/boe)



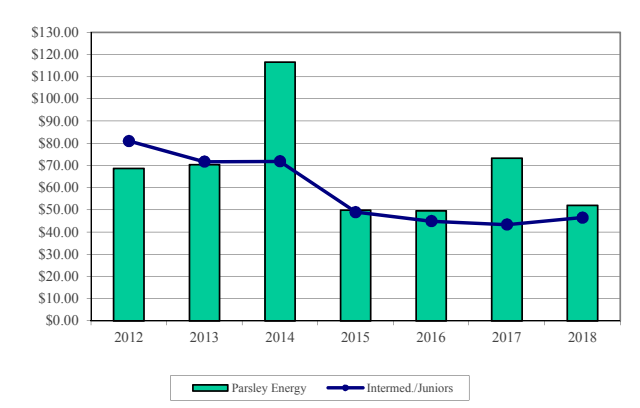
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Parsley Energy (PE - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	38	121	302	266	457	967	1,815
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-			
Other	-	-	-	-	-	-	-	-	-		12
Total Revenue and Other Income	-	-	-	-	38	121	302	266	457	967	1,826
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	-	7	24	57	81	87	162	285
Marketing Expenses	-	-	-	-	-	-	-	-	-		
Exploration / Dry Hole Costs	-	-	-	-	-	-	3	14	14	40	163
General and Administrative	-	-	-	-	4	15	35	55	85	124	151
Depreciation, Depletion and Amortization	-	-	-	-	6	28	94	178	234	352	585
Interest, net	-	-	-	-	6	14	39	46	55	97	131
Other	-	-	-	-	84	11	166	(12)	87	60	(41)
Earnings Before Income Tax	-	-	-	-	(70)	29	(93)	(97)	(106)	130	551
Current Income Taxes	-	-	-	-	-	-	-	0	-	(0)	-
Future Income Taxes	-	-	-	-	1	2	36	(24)	(17)	6	105
Total Income Taxes	-	-	-	-	1	2	36	(24)	(17)	6	105
Minority Interest	-	-	-	-	-	-	(33)	23	15	(17)	(77)
Earnings From Continuing Operations	-	-	-	-	(70)	28	(163)	(50)	(74)	107	369
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	(70)	28	(163)	(50)	(74)	107	369
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	(70)	28	(163)	(50)	(74)	107	369

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	(70)	28	(163)	(50)	(74)	107	369
Adjustments:	-	-	-	-	-	-	-	-	-		
Charges and Credits Not Impacting Cash	-	-	-	-	7	30	132	155	216	358	690
Other	-	-	-	-	71	(2)	197	69	141	79	169
Cash Flow From Operations	-	-	-	-	8	55	165	174	283	544	1,228
Change in Working Capital / Other	-	-	-	-	(3)	(2)	20	(2)	(55)	150	(9)
Net Cash From Operating Activities	-	-	-	-	5	53	185	172	228	694	1,219
Total Capital Expenditures	-	-	-	-	(66)	(210)	(478)	(383)	(506)	(1,089)	(1,788)
Acquisitions, net	-	-	-	-	(23)	(216)	(770)	(45)	(1,380)	(2,216)	3
Other	-	-	-	-	(0)					(151)	190
Net Cash From Investing Activities	-	-	-	-	(90)	(426)	(1,248)	(427)	(1,885)	(3,457)	(1,594)
Net Change in Debt	-	-	-	-	91	307	245	(121)	536	1,061	(3)
Net Change in Common Stock	-	-	-	-	-	-	868	669	930	2,123	(11)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	(16)	-	-	-		-	(2)
Other	-	-	-	-	(1)	71	(19)	(1)	(18)	-	-
Net Cash From Financing Activities	-	-	-	-	74	378	1,094	547	1,447	3,184	(15.911)
Effect of Exchange Rate on Cash	-	-		-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	(10)	6	31	293	(210)	421	(391)
Cash and Equivalents, Beginning of Year	-	-	-	-	24	14	19	51	343	133	554
Cash and Equivalents, End of Year	-	-	-	-	14	19	51	343	133	554	163

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Parsley Energy (PE - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	137	204	488	299	919	541
Net Property, Plant and Equipment	-	-	-	-	-	587	1,761	1,986	3,617	7,835	8,824
Other Assets						18	86	40	23	38	27
Total Assets	-	-	-	-	-	743	2,051	2,514	3,939	8,793	9,391
Total Current Liabilities	-	-	-	-	-	191	221	228	345	612	649
Long-term Debt	-	-	-	-	-	430	677	556	1,041	2,180	2,182
Deferred Income Taxes	-	-	-	-	-	3	62	63	5	21	132
Other Liabilities and Deferred Credits	-	-	-	-	-	10	99	80	117	99	109
Total Liabilities	-	-	-	-	-	635	1,059	928	1,508	2,912	3,072
Minority Interests	-	-	-	-	-	-	285	322	341	1,168	752
Common Shares	-	-	-	-	-	-	1	2	2	3	3
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	645	1,252	2,151	4,666	5,164
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	-	-	61	11	(63)	44	413
Other / Comprehensive Income (Loss)	-	-	-	-	-		-	-	-	(1)	(12)
Total Shareholders' Equity	-	-	-	-	-	108	707	1,264	2,090	4,712	5,568
Total Liabilities and Shareholders' Equity	-	-	-	-	-	743	2,051	2,514	3,939	8,793	9,391
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**6.8%**	**-13.8%**	**-1.1%**	**-1.2%**	**3.5%**	**6.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue					$62.31	$66.17	$57.59	$33.13	$32.60	$38.81	$45.44	$41.07	$41.32
Production Costs					$11.67	$12.93	$10.88	$10.05	$6.23	$6.53	$7.14	$6.79	$7.30
Exploration					$0.00	$0.00	$0.60	$1.73	$0.99	$1.63	$4.07	$2.75	$2.54
DD&A					$10.59	$15.39	$18.00	$22.20	$16.70	$14.21	$14.26	$14.68	$15.53
G&A/Other					$0.11	$0.10	$0.10	$0.10	$0.05	$0.04	$0.04	$0.04	$0.05
Pre-tax Results of Operations					$39.94	$37.74	$28.01	-$0.95	$8.63	$16.40	$19.93	$16.81	$15.90
Income Taxes					-$0.32	$2.45	-$10.96	-$0.23	$1.41	$5.74	$3.81	$3.99	$2.77
Results of Operations					$40.25	$35.30	$38.98	-$0.72	$7.22	$10.66	$16.12	$12.82	$13.12

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	-	$62.31	$66.17	$57.59	$33.13	$32.60	$38.81	$45.44	$41.07	$41.32
Production Costs	-	-	-	-	$11.67	$12.93	$10.88	$10.05	$6.23	$6.53	$7.14	$6.79	$7.30
Exploration	-	-	-	-	$0.00	$0.00	$0.60	$1.73	$0.99	$1.63	$4.07	$2.75	$2.54
DD&A	-	-	-	-	$10.59	$15.39	$18.00	$22.20	$16.70	$14.21	$14.26	$14.68	$15.53
G&A/Other	-	-	-	-	$0.11	$0.10	$0.10	$0.10	$0.05	$0.04	$0.04	$0.04	$0.05
Pre-tax Results of Operations	-	-	-	-	$39.94	$37.74	$28.01	-$0.95	$8.63	$16.40	$19.93	$16.81	$15.90
Income Taxes	-	-	-	-	-$0.32	$2.45	-$10.96	-$0.23	$1.41	$5.74	$3.81	$3.99	$2.77
Results of Operations	-	-	-	-	$40.25	$35.30	$38.98	-$0.72	$7.22	$10.66	$16.12	$12.82	$13.12

Source: BMO Capital Markets, Company Reports

Parsley Energy (PE - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	4.1	11.0	19.3	28.3	36.9	63.9	102.4	67.7	50.2
Liquids Production (b/d)	-	-	-	-	981	3,184	11,137	17,279	32,214	57,266	92,353	60,611	42,050
Total Production (boe/d)	-	-	-	-	1,657	5,011	14,357	22,000	38,361	67,917	109,415	71,898	50,410
% Gas Production	-	-	-	-	41%	36%	22%	21%	16%	16%	16%	16%	17%
% Oil Production	-	-	-	-	59%	64%	78%	79%	84%	84%	84%	84%	83%
Proven Reserves:													
Gas Reserves (bcf)	-	-	-	-	30.2	77.8	123.6	157.2	223.6	451.7	572.0	415.8	305.6
Oil Reserves (mmbbls)	-	-	-	-	17.7	41.9	70.3	97.6	185.1	341.2	426.4	317.5	224.1
Total Proven Reserves (mmboe)	-	-	-	-	22.8	54.8	90.9	123.8	222.3	416.4	521.7	386.8	275.0
% Gas Reserves	-	-	-	-	22%	24%	23%	21%	17%	18%	18%	18%	19%
% Oil Reserves	-	-	-	-	78%	76%	77%	79%	83%	82%	82%	82%	81%
Proven Reserve Life Index	-	-	-	-	37.6	30.0	17.3	15.4	15.9	16.8	13.1	15.2	15.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	11.0	51.6	52.9	43.9	79.9	251.4	157.7	489.0	585.8
Oil Additions (mmbbls)	-	-	-	-	6.4	25.3	32.5	33.6	99.2	177.0	118.9	395.1	461.3
Total Additions (mmboe)	-	-	-	-	8.3	33.9	41.3	40.9	112.5	218.9	145.2	476.6	558.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	6.9	20.1	33.8	56.6	98.7	160.3	159.8	418.8	509.2
Acquisitions	-	-	-	-	1.4	16.9	17.0	2.4	24.2	55.8	5.6	85.7	105.0
Dispositions	-	-	-	-	-	(0.0)	-	(2.4)	(6.6)	(6.5)	(22.5)	(35.6)	(38.0)
Revisions of Estimates	-	-	-	-	(0.0)	(3.1)	(9.5)	(15.6)	(3.8)	9.2	2.3	7.7	(17.3)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	-	83.5%	59.4%	81.9%	138.2%	87.7%	73.3%	110.0%	87.9%	91.1%
Acquisitions	-	-	-	-	17.1%	49.9%	41.0%	5.8%	21.5%	25.5%	3.9%	18.0%	18.8%
Dispositions	-	-	-	-	0.0%	0.0%	0.0%	-5.9%	-5.9%	-3.0%	-15.5%	-7.5%	-6.8%
Revisions of Estimates	-	-	-	-	-0.6%	-9.2%	-23.0%	-38.1%	-3.3%	4.2%	1.6%	1.6%	-3.1%
Additions as % of Production:													
Gas	-	-	-	-	743.6%	1289.5%	749.9%	424.3%	593.4%	1077.9%	422.1%	659.5%	639.9%
Oil	-	-	-	-	1796.4%	2177.9%	799.1%	533.3%	843.9%	846.7%	352.8%	595.4%	601.1%
Total	-	-	-	-	1366.9%	1853.9%	788.1%	509.9%	803.7%	883.0%	363.6%	605.4%	607.5%
Additions as % of Reserves:													
Gas	-	-	-	-	36.4%	66.3%	42.8%	27.9%	35.7%	55.7%	27.6%	117.6%	191.7%
Oil	-	-	-	-	36.3%	60.5%	46.2%	34.5%	53.6%	51.9%	27.9%	124.4%	205.8%
Total	-	-	-	-	36.3%	61.8%	45.4%	33.1%	50.6%	52.6%	27.8%	123.2%	203.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	-	-	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Development	-	-	-	-	$71.9	$268.4	$488.7	$404.3	$496.0	$1,207.4	$1,762.2	$3,465.6	$4,358.6
Acquisitions	-	-	-	-	$32.0	$208.4	$762.2	$73.8	$1,346.2	$3,375.6	$137.0	$4,858.8	$5,694.8
Dispositions	-	-	-	-	na	na	na	na	na	na	na	na	na
Total Expenditures	-	-	-	-	$103.9	$476.8	$1,250.9	$478.1	$1,842.2	$4,583.0	$1,899.2	$8,324.3	$10,053.3
Expenditures as % of Total:	-	-	-	-									
Exploration	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Development	-	-	-	-	69.2%	56.3%	39.1%	84.6%	26.9%	26.3%	92.8%	41.6%	43.4%
Acquisitions	-	-	-	-	30.8%	43.7%	60.9%	15.4%	73.1%	73.7%	7.2%	58.4%	56.6%
	-	-	-	-									
Cashflow (US$million)	-	-	-	-	$7.5	$55.4	$165.1	$174.2	$283.1	$543.9	$1,228.5	$2,055.5	$2,394.8
Cashflow (US$/boe)	-	-	-	-	$12.48	$30.28	$31.51	$21.69	$20.22	$21.94	$30.76	$26.11	$26.03
Recycle Ratio	-	-	-	-	1.0x	2.2x	1.0x	2.0x	1.3x	1.1x	2.7x	1.6x	1.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-	-	-	-	$10.50	$15.78	$20.07	$9.86	$5.23	$7.12	$10.87	$8.13	$8.86
Acquisition Costs	-	-	-	-	$22.57	$12.32	$44.96	$31.09	$55.55	$60.48	$24.40	$56.72	$54.24
All Sources (incl. revisions)	-	-	-	-	$12.57	$14.06	$30.29	$11.02	$15.46	$20.34	$11.33	$16.25	$16.84
Exploration & Development (excl. revisions)	-	-	-	-	$10.43	$13.33	$14.45	$7.14	$5.03	$7.53	$11.03	$8.28	$8.56
Acquisition Costs	-	-	-	-	$22.57	$12.32	$44.96	$31.09	$55.55	$60.48	$24.40	$56.72	$54.24
All Sources (excl. revisions)	-	-	-	-	$12.50	$12.87	$24.63	$8.11	$14.99	$21.20	$11.48	$16.50	$16.37

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Parsley Energy (PE - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	11.67	12.93	10.88	10.05	6.23	6.53	7.14	6.79	7.30
Exploration Expense	-	-	-	-	-	-	0.60	1.73	0.99	1.63	4.07	2.75	2.54
G&A/Other	-	-	-	-	0.11	0.10	0.10	0.10	0.05	0.04	0.04	0.04	0.05
F&D Costs (1-Year)	-	-	-	-	12.57	14.06	30.29	11.02	15.46	20.34	11.33	16.25	16.84
Return on Capital	-	-	-	-	33.58	30.13	34.68	11.03	16.02	22.41	9.45	16.09	17.23
Income Taxes	-	-	-	-	-	2.09	14.86	3.59	3.14	12.07	2.23	4.94	5.75
Breakeven Oil Price	**-**	**-**	**-**	**-**	**57.94**	**59.31**	**91.41**	**37.53**	**41.89**	**63.01**	**34.25**	**46.87**	**49.72**
Quality Differential	-	-	-	-	10.74	11.08	25.25	12.32	7.74	10.23	17.79	9.82	15.89
Required Brent Price	**-**	**-**	**-**	**-**	**68.68**	**70.39**	**116.65**	**49.84**	**49.64**	**73.25**	**52.05**	**56.69**	**65.61**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	15.97	17.21	12.64	11.52	6.91	7.29	8.22	7.69	8.29
Exploration Expense	-	-	-	-	-	-	0.70	1.98	1.10	1.82	4.69	3.12	2.89
G&A/Other	-	-	-	-	0.15	0.13	0.11	0.12	0.06	0.04	0.04	0.04	0.06
F&D Costs (1-Year)	-	-	-	-	14.73	17.00	34.90	12.30	16.76	23.29	13.41	18.57	19.22
Return on Capital	-	-	-	-	44.83	40.60	39.85	12.33	17.27	25.13	10.87	18.05	19.45
Income Taxes	-	-	-	-	-	2.81	17.08	4.01	3.38	13.53	2.57	5.55	6.49
Breakeven Oil Price	**-**	**-**	**-**	**-**	**75.68**	**77.75**	**105.27**	**42.25**	**45.49**	**71.10**	**39.80**	**53.01**	**56.40**
Quality Differential	-	-	-	-	14.70	14.74	29.32	14.12	8.60	11.42	20.48	13.50	16.79
Required Brent Price	**-**	**-**	**-**	**-**	**90.38**	**92.50**	**134.59**	**56.36**	**54.09**	**82.52**	**60.29**	**66.51**	**73.19**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	15.97	17.21	12.64	11.52	6.91	7.29	8.22	7.69	8.29
Exploration Expense	-	-	-	-	-	-	0.70	1.98	1.10	1.82	4.69	3.12	2.89
G&A/Other	-	-	-	-	0.15	0.13	0.11	0.12	0.06	0.04	0.04	0.04	0.06
F&D Costs (1-Year)	-	-	-	-	11.71	36.75	53.47	35.20	28.65	40.30	14.80	27.17	34.48
Return on Capital	-	-	-	-	44.77	98.16	61.12	35.37	29.24	43.54	11.99	26.34	34.92
Income Taxes	-	-	-	-	-	6.80	26.19	11.50	5.73	23.44	2.84	8.09	11.65
Breakeven Oil Price	**-**	**-**	**-**	**-**	**72.60**	**159.06**	**154.22**	**95.68**	**71.69**	**116.43**	**42.58**	**72.46**	**92.28**
Quality Differential	-	-	-	-	14.70	14.74	29.32	14.12	8.60	11.42	20.48	13.50	16.79
Required Brent Price	**-**	**-**	**-**	**-**	**87.30**	**173.80**	**183.54**	**109.80**	**80.29**	**127.85**	**63.06**	**85.96**	**109.07**

Source: BMO Capital Markets, Company Reports

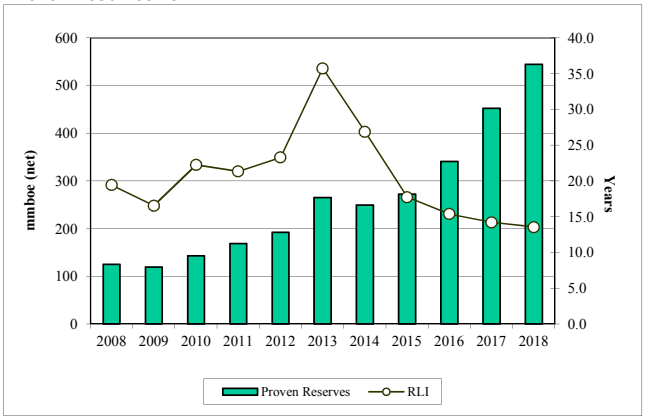
See pages F1 to F4 for analyst coverage.

PDC Energy (PDCE - NASDAQ)

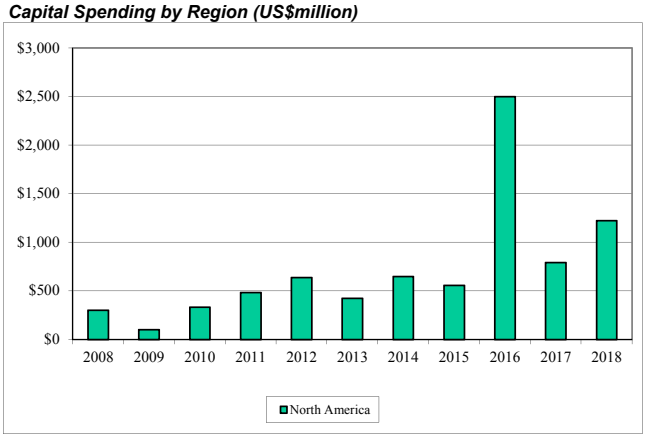
US$, net

- PDC Energy recorded results of operations of $9.07/boe in 2018 versus $4.19/boe in 2017.
- The company's one-year F&D cost jumped to $8.53/boe from $5.45/boe ($8.53/boe ex-revisions) last year. On a realized oil:gas price ratio basis, F&D costs were recorded at $11.73/boe while costs for PD reserves were $21.03/boe.
- The company's 2018 operations imply a required Brent breakeven oil price of $60.33/boe total proved reserves and $81.46/boe on PD reserves.
- PDC reported a ROCE of 1.3% in 2018 compared to a normalized 2017 ROCE of 4.2%.

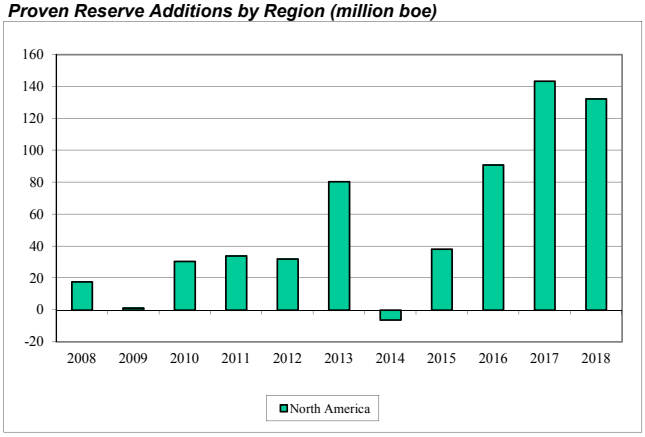
Proven Reserves vs RLI



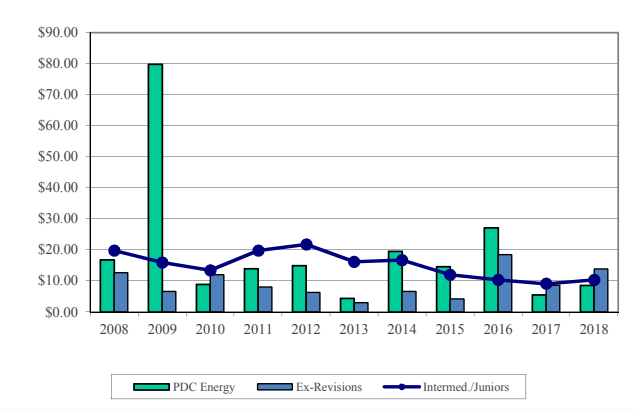
Capital Spending by Region (US$million)



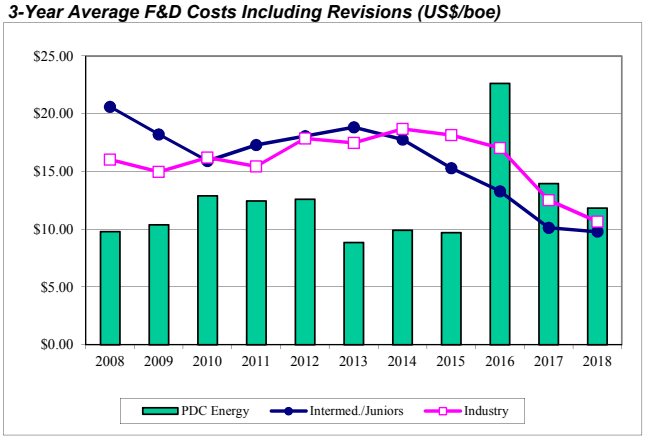
Proven Reserve Additions by Region (million boe)



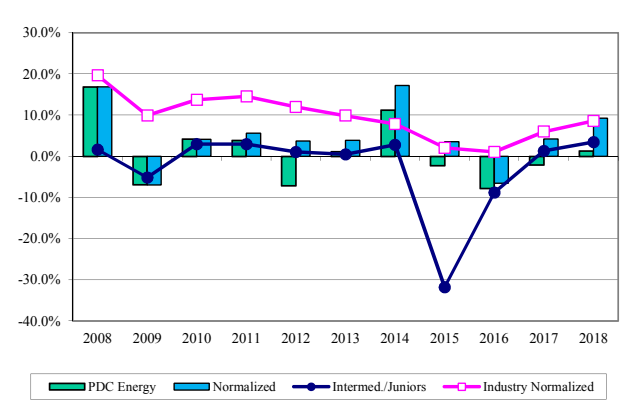
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

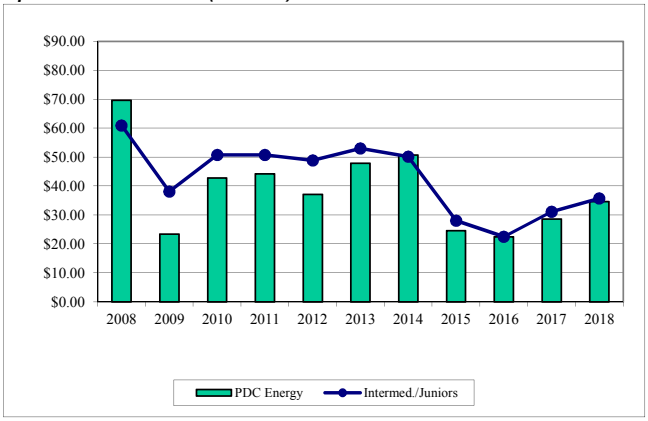
See pages F1 to F4 for analyst coverage.

PDC Energy (PDCE - NASDAQ)

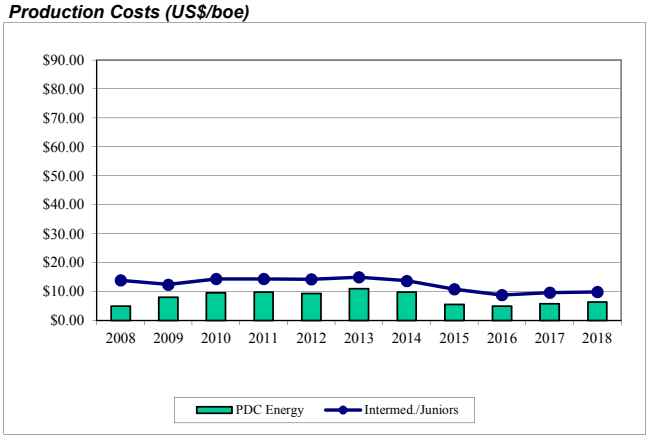
US$/boe, net

North America

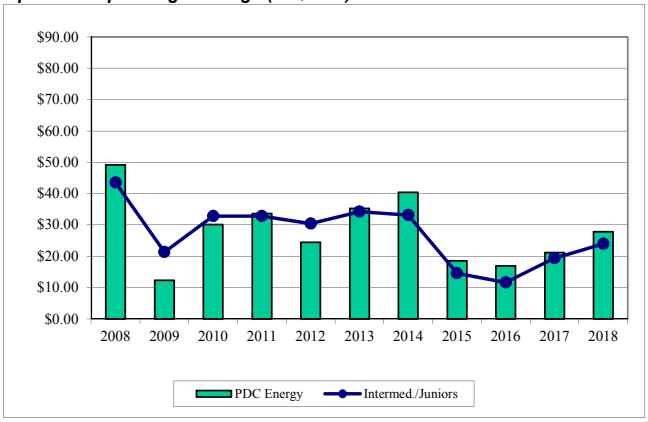
Upstream Net Revenue (US$/boe)



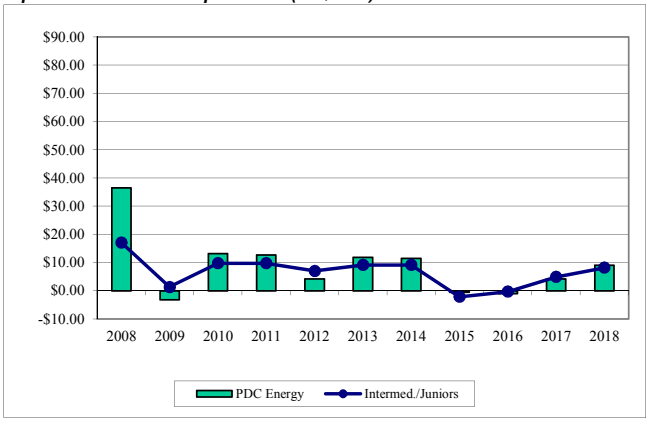
Production Costs (US$/boe)



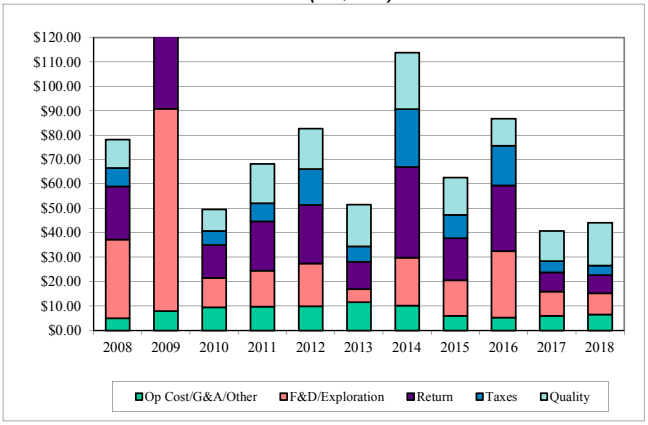
Upstream Operating Earnings (US$/boe)



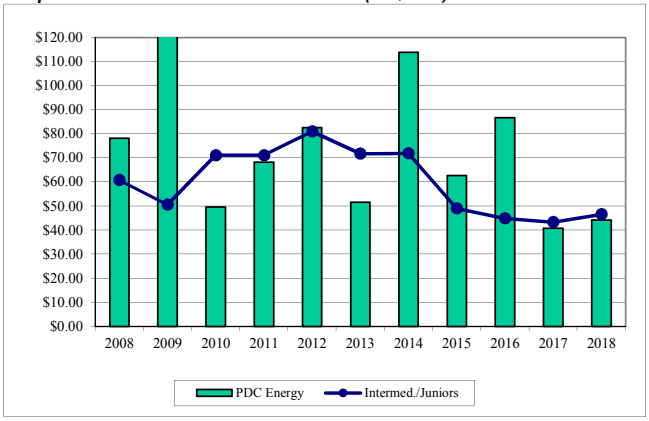
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

PDC Energy (PDCE - NASDAQ)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	305	171	210	277	270	359	471	379	497	913	1,390
Midstream / Downstream Revenue	129	60	69	66	47	70	72	11	9	-	-
Other	139	0	69	53	39	(18)	313	206	(123)	9	159
Total Revenue and Other Income	573	231	348	396	356	411	856	595	383	922	1,549
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	75	62	67	69	75	73	84	86	110	184	259
Marketing Expenses	128	58	68	65	47	70	72	12	10	-	-
Exploration / Dry Hole Costs	32	18	20	6	23	7	1	1	5	47	6
General and Administrative	38	54	42	61	59	64	116	90	112	120	171
Depreciation, Depletion and Amortization	101	127	109	129	147	127	193	303	417	469	560
Interest, net	28	37	33	37	48	51	47	43	61	79	71
Other	8	1	(0)	25	187	55	164	161	54	356	470
Earnings Before Income Tax	163	(126)	8	3	(234)	(41)	177	(107)	(393)	(339)	7
Current Income Taxes	(2)	(27)	0	(10)	0	(2)	139	3	(10)	(8)	(1)
Future Income Taxes	59	(18)	1	10	(89)	(13)	(69)	(41)	(137)	(204)	6
Total Income Taxes	57	(45)	1	(0)	(89)	(15)	70	(38)	(147)	(212)	5
Minority Interest	0	2	0	-	-	-				-	-
Earnings From Continuing Operations	106	(79)	7	3	(145)	(26)	107	(68)	(246)	(128)	2
Discontinued Operations/Extraordinary Items	7	(1)	(1)	10	14	4	48	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-							-	-
Net Earnings	113	(80)	6	13	(131)	(22)	155	(68)	(246)	(128)	2
Preferred Stock Dividends	-	-	-							-	-
Net Earnings to Common Shareholders	113	(80)	6	13	(131)	(22)	155	(68)	(246)	(128)	2

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	106	(79)	7	3	(145)	(26)	107	(68)	(246)	(128)	2
Charges and Credits Not Impacting Cash	192	115	121	170	82	111	445	423	290	551	1,024
Other	(106)	136	5	(17)	227	123	(302)	66	423	158	(218)
Cash Flow From Operations	193	173	134	156	164	208	250	421	467	582	808
Change in Working Capital / Other	(53)	(29)	18	11	11	(49)	(13)	(10)	19	6	81
Net Cash From Operating Activities	139	143	152	167	175	159	237	411	486	589	889
Total Capital Expenditures	(323)	(143)	(163)	(334)	(348)	(395)	(629)	(605)	(440)	(742)	(957)
Acquisitions, net	1	1	(135)	(123)	(104)	178	154	0	(1,069)	(6)	(132)
Other	0	-	(4)	1						31	1
Net Cash From Investing Activities	(322)	(142)	(301)	(456)	(452)	(217)	(474)	(604)	(1,509)	(717)	(1,088)
Net Change in Debt	154	(75)	152	233	120	(23)	64	(19)	434	73	25
Net Change in Common Stock	-	-	-	-	164	272	(5)	197	848	(7)	(5)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	(4)	55	20	11	(13)	0	2	0	(16)	(1)	(2)
Net Cash From Financing Activities	150	(20)	172	243	271	249	60	178	1,266	65	18
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(33)	(19)	22	(46)	(6)	191	(177)	(15)	243	(63)	(181)
Cash and Equivalents, Beginning of Year	84	51	32	55	8	2	193	16	1	244	190
Cash and Equivalents, End of Year	51	32	55	8	2	193	16	1	244	181	9

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

PDC Energy (PDCE - NASDAQ)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	292	177	177	173	172	326	341	332	400	401	274
Net Property, Plant and Equipment	1,033	974	1,120	1,302	1,617	1,653	1,800	1,938	4,008	3,933	4,003
Other Assets	77	99	92	223	38	46	200	101	78	85	267
Total Assets	1,403	1,250	1,389	1,698	1,827	2,025	2,341	2,371	4,486	4,420	4,544
Total Current Liabilities	261	144	161	195	203	213	310	301	271	418	441
Long-term Debt	395	281	296	532	677	657	665	529	1,044	1,155	1,198
Deferred Income Taxes	163	178	188	208	148	119	126	143	401	192	198
Other Liabilities and Deferred Credits	72	109	102	99	95	68	102	109	148	148	181
Total Liabilities	890	712	747	1,034	1,124	1,058	1,203	1,083	1,863	1,912	2,017
Minority Interests	1	48	0							-	-
Common Shares	0	0	0	0	0	0	0	0	1	1	1
Contributed Surplus (Paid-in Capital)	6	64	209	218	387	674	689	907	2,490	2,503	2,519
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	506	427	433	446	316	293	449	380	134	7	9
Other / Comprehensive Income (Loss)	(0)	(0)	(0)	(0)	(0)	(0)	(1)	(1)	(2)	(3)	(2)
Total Shareholders' Equity	512	491	642	664	703	968	1,137	1,287	2,623	2,508	2,527
Total Liabilities and Shareholders' Equity	1,403	1,250	1,389	1,698	1,827	2,025	2,341	2,371	4,486	4,420	4,544
Return on Capital Employed (ROCE)	**16.9%**	**-6.9%**	**4.2%**	**3.8%**	**-7.2%**	**1.1%**	**11.2%**	**-2.3%**	**-7.8%**	**-2.1%**	**1.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$69.69	$23.43	$42.86	$44.22	$37.14	$47.90	$50.72	$24.64	$22.43	$28.69	$34.61	$29.74	$30.72
Production Costs	$5.00	$8.01	$9.56	$9.80	$9.38	$10.95	$9.76	$5.57	$4.95	$5.77	$6.44	$5.86	$6.13
Exploration	$15.53	$3.04	$3.15	$0.79	$2.73	$0.95	$0.10	$0.07	$0.21	$1.49	$0.15	$0.62	$0.51
DD&A	$0.00	$17.38	$16.04	$16.22	$17.76	$16.72	$21.70	$19.44	$18.63	$14.53	$13.94	$15.24	$16.29
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.49	$0.64	$0.37	$0.41	$0.32	$0.20	$0.13	$0.20	$0.24
Pre-tax Results of Operations	$49.16	-$5.01	$14.12	$17.41	$6.78	$18.64	$18.79	-$0.85	-$1.68	$6.70	$13.95	$7.82	$7.56
Income Taxes	$12.64	-$1.85	$0.92	$4.64	$2.58	$6.74	$7.32	-$0.30	-$0.63	$2.51	$4.88	$2.78	$2.74
Results of Operations	$36.52	-$3.16	$13.20	$12.76	$4.20	$11.90	$11.47	-$0.54	-$1.05	$4.19	$9.07	$5.04	$4.82

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$69.69	$23.43	$42.86	$44.22	$37.14	$47.90	$50.72	$24.64	$22.43	$28.69	$34.61	$29.74	$30.72
Production Costs	$5.00	$8.01	$9.56	$9.80	$9.38	$10.95	$9.76	$5.57	$4.95	$5.77	$6.44	$5.86	$6.13
Exploration	$15.53	$3.04	$3.15	$0.79	$2.73	$0.95	$0.10	$0.07	$0.21	$1.49	$0.15	$0.62	$0.51
DD&A	$0.00	$17.38	$16.04	$16.22	$17.76	$16.72	$21.70	$19.44	$18.63	$14.53	$13.94	$15.24	$16.29
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.49	$0.64	$0.37	$0.41	$0.32	$0.20	$0.13	$0.20	$0.24
Pre-tax Results of Operations	$49.16	-$5.01	$14.12	$17.41	$6.78	$18.64	$18.79	-$0.85	-$1.68	$6.70	$13.95	$7.82	$7.56
Income Taxes	$12.64	-$1.85	$0.92	$4.64	$2.58	$6.74	$7.32	-$0.30	-$0.63	$2.51	$4.88	$2.78	$2.74
Results of Operations	$36.52	-$3.16	$13.20	$12.76	$4.20	$11.90	$11.47	-$0.54	-$1.05	$4.19	$9.07	$5.04	$4.82

Source: BMO Capital Markets, Company Reports

PDC Energy (PDCE - NASDAQ)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	87.0	97.4	74.5	84.6	88.8	57.2	52.9	91.2	141.7	196.4	241.1	193.1	144.7
Liquids Production (b/d)	3,178	3,540	5,230	7,597	7,855	10,830	16,652	26,901	37,134	54,474	69,838	53,816	41,000
Total Production (boe/d)	17,680	19,766	17,645	21,701	22,654	20,355	25,464	42,108	60,755	87,209	110,029	85,998	65,113
% Gas Production	82%	82%	70%	65%	65%	47%	35%	36%	39%	38%	37%	37%	37%
% Oil Production	18%	18%	30%	35%	35%	53%	65%	64%	61%	62%	63%	63%	63%
Proven Reserves:													
Gas Reserves (bcf)	662.9	608.9	657.3	672.1	604.0	739.6	537.0	660.7	833.7	1,154.3	1,335.7	1,107.9	904.3
Oil Reserves (mmbbls)	15.0	18.1	33.9	57.2	92.1	142.5	160.6	162.7	202.5	260.5	322.3	261.8	221.7
Total Proven Reserves (mmboe)	125.5	119.6	143.4	169.2	192.8	265.8	250.1	272.8	341.4	452.9	545.0	446.4	372.4
% Gas Reserves	88%	85%	76%	66%	52%	46%	36%	40%	41%	42%	41%	41%	40%
% Oil Reserves	12%	15%	24%	34%	48%	54%	64%	60%	59%	58%	59%	59%	60%
Proven Reserve Life Index	19.4	16.6	22.3	21.4	23.3	35.8	26.9	17.8	15.4	14.2	13.6	14.4	17.6
Proven Reserve Additions:													
Gas Additions (bcf)	101.1	(18.4)	75.6	45.7	-35.7	156.5	-183.4	157.1	224.7	392.3	269.4	886.4	860.1
Oil Additions (mmbbls)	0.9	4.3	17.7	26.1	37.8	54.3	24.2	11.9	53.3	78.0	87.3	218.6	254.7
Total Additions (mmboe)	17.7	1.3	30.3	33.7	31.8	80.4	-6.4	38.1	90.8	143.3	132.2	366.3	398.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	23.2	15.1	18.3	52.2	67.9	141.9	98.0	131.5	1.5	6.0	27.9	35.5	265.0
Acquisitions	0.4	0.2	9.4	8.1	33.4	1.0	0.0	0.1	133.6	86.8	60.4	280.7	280.8
Dispositions	(0.2)	0.0	(7.3)	(0.9)	(10.9)	(16.1)	(39.6)	(0.0)	(1.7)	(1.9)	(11.1)	(14.7)	(54.4)
Revisions of Estimates	(5.7)	(14.0)	9.9	-25.7	-58.6	-46.5	-64.8	-93.5	-42.6	52.5	55.0	64.8	(93.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	131.2%	1200.6%	60.4%	154.7%	213.4%	176.5%	-1543.6%	345.4%	1.7%	4.2%	21.1%	9.7%	66.6%
Acquisitions	2.3%	13.9%	31.1%	24.1%	105.0%	1.3%	-0.3%	0.2%	147.2%	60.5%	45.7%	76.6%	70.6%
Dispositions	-1.1%	-0.2%	-24.2%	-2.6%	-34.2%	-20.0%	623.1%	-0.1%	-1.9%	-1.3%	-8.4%	-4.0%	-13.7%
Revisions of Estimates	-32.4%	-1114.4%	32.7%	-76.1%	-184.2%	-57.8%	1020.8%	-245.6%	-47.0%	36.6%	41.6%	17.7%	-23.5%
Additions as % of Production:													
Gas	318.2%	-51.8%	277.9%	148.0%	-110.1%	750.1%	-950.2%	471.6%	434.4%	547.2%	306.1%	419.2%	325.7%
Oil	74.1%	334.8%	928.4%	941.7%	1317.8%	1374.1%	398.3%	121.1%	393.3%	392.1%	342.4%	370.9%	340.3%
Total	274.3%	17.5%	470.8%	425.9%	385.0%	1082.1%	-68.3%	247.7%	409.3%	450.3%	329.2%	389.0%	334.9%
Additions as % of Reserves:													
Gas	15.2%	-3.0%	11.5%	6.8%	-5.9%	21.2%	-34.1%	23.8%	27.0%	34.0%	20.2%	80.0%	95.1%
Oil	5.7%	23.9%	52.3%	45.6%	41.0%	38.1%	15.1%	7.3%	26.3%	29.9%	27.1%	83.5%	114.9%
Total	14.1%	1.1%	21.1%	19.9%	16.5%	30.2%	-2.5%	14.0%	26.6%	31.6%	24.3%	82.1%	106.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$29	$20	$24	$5	$21	$60	$0	$0	$5	$84	$40	$129	$129
Development	$258	$72	$138	$301	$233	$332	$591	$552	$383	$688	$971	$2,042	$3,185
Acquisitions	$13	$8	$172	$175	$382	$32	$58	$4	$2,113	$19	$211	$2,342	$2,404
Dispositions	na	na	na	na	na	na	na	na	na	$0	$0	na	na
Total Expenditures	$299	$101	$333	$481	$635	$424	$649	$556	$2,501	$791	$1,222	$4,514	$5,718
Expenditures as % of Total:													
Exploration	9.6%	20.0%	7.1%	1.1%	3.3%	14.1%	0.0%	0.0%	0.2%	10.6%	3.3%	2.9%	2.3%
Development	86.1%	72.0%	41.4%	62.6%	36.7%	78.3%	91.1%	99.4%	15.3%	87.0%	79.5%	45.3%	55.7%
Acquisitions	4.4%	8.1%	51.5%	36.3%	60.0%	7.6%	8.9%	0.6%	84.5%	2.4%	17.2%	51.9%	42.0%
Cashflow (US$million)	$192.6	$172.5	$133.5	$155.9	$163.9	$207.8	$250.2	$420.8	$466.8	$582.1	$808.4	$1,857.3	$2,528.2
Cashflow (US$/boe)	$29.84	$23.91	$20.73	$19.68	$19.82	$27.96	$26.92	$27.38	$21.05	$18.29	$20.13	$19.72	$21.28
Recycle Ratio	1.8x	0.3x	2.3x	1.4x	1.3x	6.4x	1.4x	1.9x	0.8x	3.4x	2.4x	1.7x	1.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$16.38	$85.21	$5.72	$11.57	$27.29	$4.11	$17.79	$14.52	-$9.44	$13.21	$12.19	$21.64	$19.32
Acquisition Costs	$31.54	$46.30	$18.24	$21.51	$11.42	$30.78	nm	$47.16	$15.81	$0.22	$3.49	$8.34	$8.56
All Sources (incl. revisions)	$16.73	$79.80	$8.86	$13.90	$14.87	$4.39	$19.53	$14.59	$27.04	$5.45	$8.53	$11.85	$12.64
Exploration & Development (excl. revisions)	$12.33	$6.12	$8.82	$5.87	$3.74	$2.76	$6.03	$4.20	$253.38	$128.60	$36.18	$61.19	$12.51
Acquisition Costs	$31.54	$46.30	$18.24	$21.51	$11.42	$30.78	nm	$47.16	$15.81	$0.22	$3.49	$8.34	$8.56
All Sources (excl. revisions)	$12.66	$6.58	$12.02	$7.98	$6.27	$2.97	$6.62	$4.22	$18.51	$8.53	$13.84	$14.27	$10.48

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

PDC Energy (PDCE - NASDAQ)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	5.00	8.01	9.56	9.80	9.38	10.95	9.76	5.57	4.95	5.77	6.44	5.86	6.13
Exploration Expense	15.53	3.04	3.15	0.79	2.73	0.95	0.10	0.07	0.21	1.49	0.15	0.62	0.51
G&A/Other	-	-	-	-	0.49	0.64	0.37	0.41	0.32	0.20	0.13	0.20	0.24
F&D Costs (1-Year)	16.73	79.80	8.86	13.90	14.87	4.39	19.53	14.59	27.04	8.53	8.53	14.70	15.64
Return on Capital	21.81	86.64	13.48	20.23	23.94	11.17	37.22	17.14	26.98	7.79	7.41	13.63	18.18
Income Taxes	7.55	50.73	5.78	7.36	14.69	6.32	23.76	9.62	16.15	4.67	3.99	7.88	10.66
Breakeven Oil Price	**66.61**	**228.23**	**40.82**	**52.08**	**66.10**	**34.42**	**90.75**	**47.40**	**75.64**	**28.44**	**26.65**	**42.88**	**51.35**
Quality Differential	11.57	6.91	8.79	16.14	16.59	17.21	23.12	15.27	11.11	12.34	17.51	13.65	15.87
Required Brent Price	**78.18**	**235.14**	**49.61**	**68.23**	**82.69**	**51.63**	**113.88**	**62.67**	**86.75**	**40.78**	**44.16**	**56.53**	**67.22**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	8.97	17.60	17.77	18.66	19.97	16.65	12.56	7.15	6.61	7.63	8.96	7.94	8.21
Exploration Expense	27.85	6.68	5.86	1.51	5.82	1.45	0.13	0.09	0.28	1.97	0.21	0.84	0.68
G&A/Other	-	-	-	-	1.05	0.97	0.48	0.53	0.43	0.26	0.18	0.27	0.32
F&D Costs (1-Year)	34.26	30.55	13.56	16.71	13.61	6.44	23.65	25.21	36.84	13.15	11.73	20.57	22.12
Return on Capital	42.18	31.69	18.95	23.81	27.59	16.49	44.52	28.49	36.53	11.49	9.69	18.39	24.98
Income Taxes	14.60	18.56	8.12	8.66	16.93	9.34	28.42	15.98	21.86	6.88	5.22	10.63	14.64
Breakeven Oil Price	**127.87**	**105.08**	**64.25**	**69.36**	**84.97**	**51.34**	**109.77**	**77.45**	**102.55**	**41.38**	**35.98**	**58.63**	**70.95**
Quality Differential	20.75	15.17	16.35	30.74	35.33	26.17	29.76	19.61	14.83	16.33	24.36	18.51	20.98
Required Brent Price	**148.62**	**120.26**	**80.59**	**100.10**	**120.30**	**77.51**	**139.53**	**97.07**	**117.38**	**57.71**	**60.33**	**77.13**	**91.93**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	8.97	17.60	17.77	18.66	19.97	16.65	12.56	7.15	6.61	7.63	8.96	7.94	8.21
Exploration Expense	27.85	6.68	5.86	1.51	5.82	1.45	0.13	0.09	0.28	1.97	0.21	0.84	0.68
G&A/Other	-	-	-	-	1.05	0.97	0.48	0.53	0.43	0.26	0.18	0.27	0.32
F&D Costs (1-Year)	40.04	52.34	38.60	20.01	53.24	39.57	48.11	63.63	71.66	13.69	21.03	29.93	43.62
Return on Capital	48.67	54.10	51.97	27.30	113.52	117.05	92.81	71.92	70.44	11.95	17.37	26.69	49.04
Income Taxes	16.85	31.68	22.27	9.93	69.65	66.25	59.25	40.35	42.16	7.15	9.35	15.43	28.75
Breakeven Oil Price	**142.38**	**162.40**	**136.47**	**77.41**	**263.26**	**241.94**	**213.34**	**183.68**	**191.57**	**42.65**	**57.11**	**81.09**	**130.62**
Quality Differential	20.75	15.17	16.35	30.74	35.33	26.17	29.76	19.61	14.83	16.33	24.36	18.51	20.98
Required Brent Price	**163.14**	**177.57**	**152.82**	**108.16**	**298.59**	**268.11**	**243.10**	**203.29**	**206.40**	**58.99**	**81.46**	**99.59**	**151.60**

Source: BMO Capital Markets, Company Reports

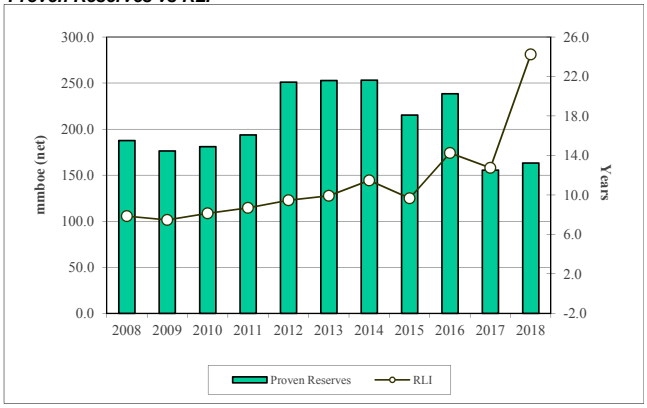
See pages F1 to F4 for analyst coverage.

Pengrowth Energy Corporation (PGF - TSX) US$, net

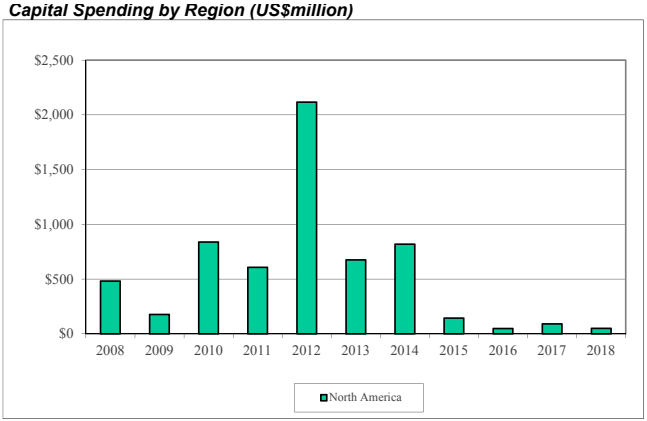
- The company reported loss from operations of $7.58/boe in 2018 versus a loss of $3.30/boe last year.
- One-year F&D costs were $7.17/boe in 2018. On a realized oil:gas price ratio basis, F&D costs were $15.01/boe, while costs for PD reserves were $42.06/boe in 2018.
- Pengrowth's 2018 operations imply a Brent breakeven oil price of $95.70/boe on a realized ratio basis on total proved reserves, while its PD costs suggest a Brent breakeven of $186.32/boe.
- The company reported a normalized loss on capital of 15.5% in 2018 compared to last year's normalized loss on capital of 1.6%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

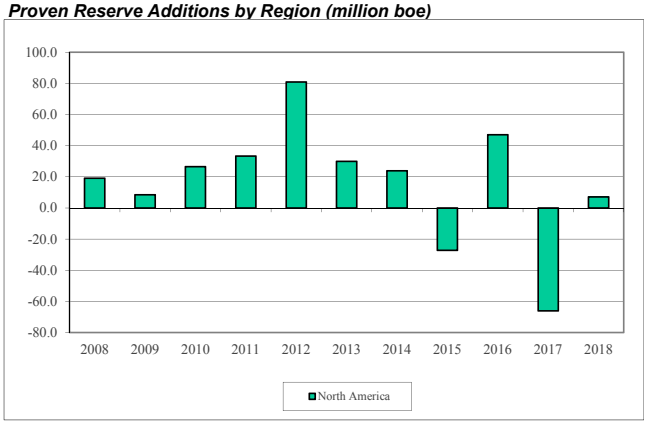
Proven Reserves vs RLI



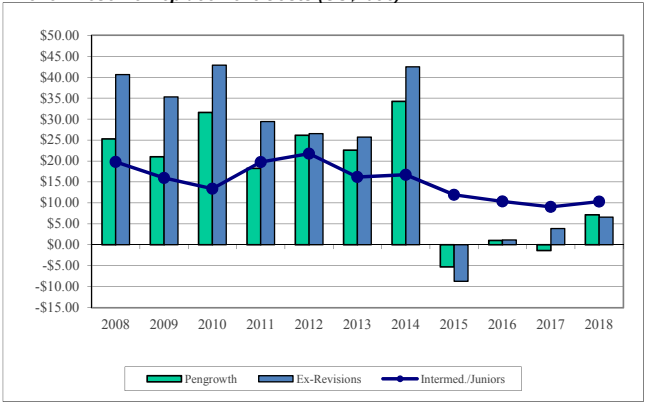
Capital Spending by Region (US$million)



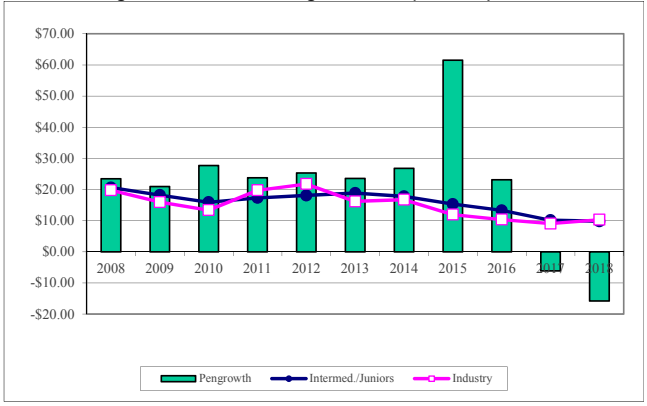
Proven Reserve Additions by Region (million boe)



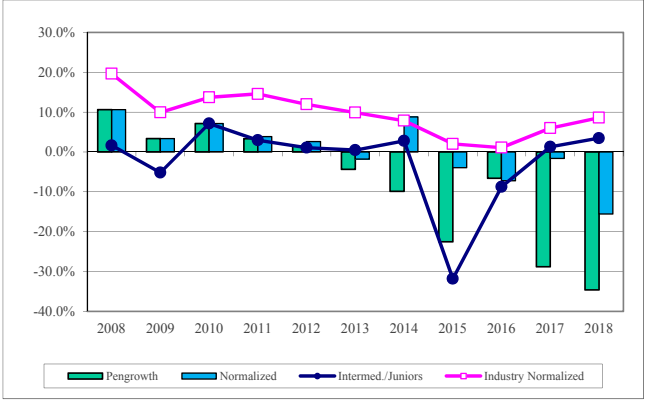
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

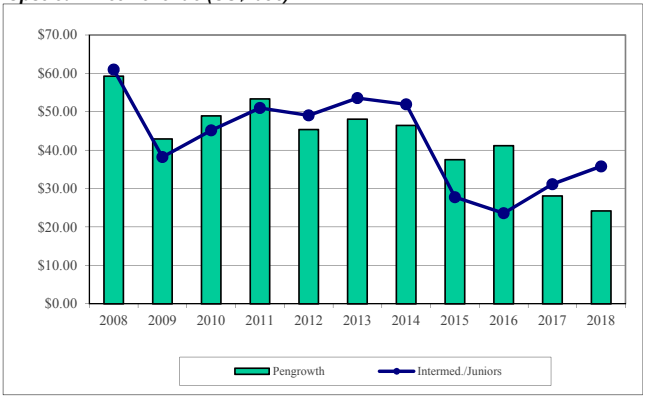
See pages F1 to F4 for analyst coverage.

Pengrowth Energy Corporation (PGF - TSX)

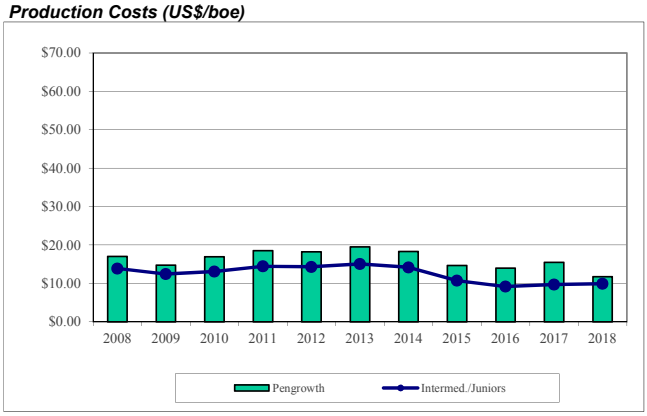
US$, net

North America

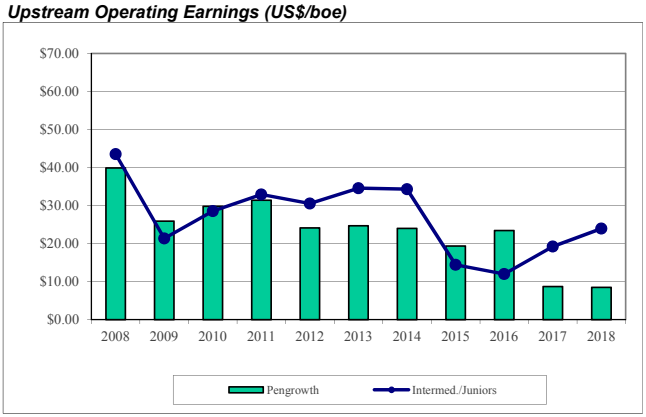
Upstream Net Revenue (US$/boe)



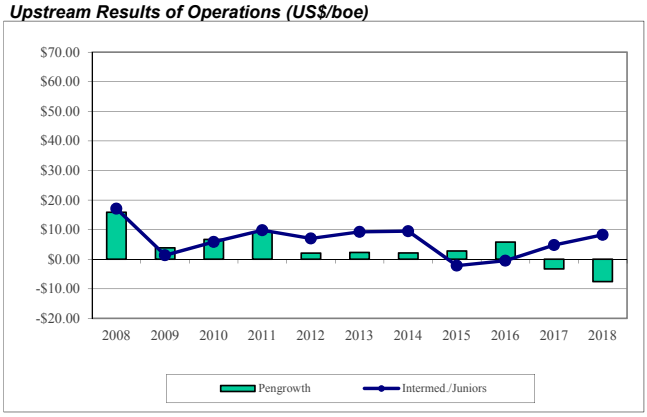
Production Costs (US$/boe)



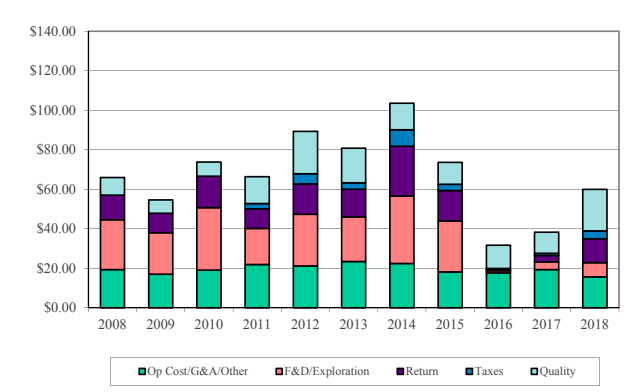
Upstream Operating Earnings (US$/boe)



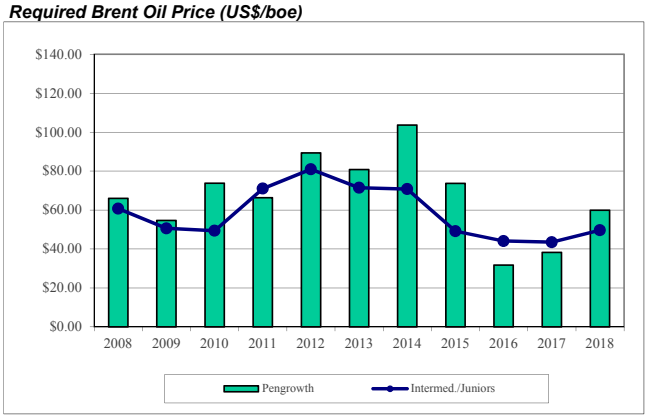
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pengrowth Energy Corporation (PGF - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,401	1,000	1,069	1,189	1,204	1,280	1,112	581	398	484	392
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	250	(139)	27	(40)	31	(138)	367	216	(29)	(4)	(25)
Total Revenue and Other Income	1,651	861	1,095	1,149	1,234	1,142	1,479	797	368	480	367
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	126	177
Production and Transportation Expenses	407	348	376	412	484	497	404	327	234	189	79
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	56	55	49	76	79	100	91	78	63	47	27
Depreciation, Depletion and Amortization	575	521	514	443	568	558	468	357	264	160	125
Interest, net	72	71	68	77	86	91	68	81	80	55	38
Other	210	(82)	(93)	32	16	255	991	984	20	603	89
Earnings Before Income Tax	306	(51)	180	108	(19)	(379)	(543)	(1,030)	(292)	(700)	(168)
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	(68)	(126)	(44)	23	(32)	(71)	(18)	(174)	(71)	(173)	264
Total Income Taxes	(68)	(126)	(44)	23	(32)	(71)	(18)	(174)	(71)	(173)	264
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	373	75	224	86	13	(308)	(524)	(856)	(222)	(527)	(432)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	373	75	224	86	13	(308)	(524)	(856)	(222)	(527)	(432)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	373	75	224	86	13	(308)	(524)	(856)	(222)	(527)	(432)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	373	75	224	86	13	(308)	(524)	(856)	(222)	(527)	(432)
Charges and Credits Not Impacting Cash	507	395	471	493	536	487	450	182	194	477	460
Other	(71)	20	(138)	33	(30)	346	515	1,020	341	104	(4)
Cash Flow From Operations	809	490	556	611	519	525	441	346	313	54	24
Change in Working Capital / Other	25	(29)	10	74	15	74	136	7	48	56	1
Net Cash From Operating Activities	834	461	566	685	534	599	577	354	362	110	24
Total Capital Expenditures	(379)	(183)	(324)	(616)	(468)	(676)	(819)	(144)	(49)	(91)	(50)
Acquisitions, net	(23)	5	39	(9)	(91)	943	61	164	44	702	18
Other	(10)	(30)	7	25	9	44	(60)	(69)	(17)	(14)	1
Net Cash From Investing Activities	(413)	(207)	(277)	(599)	(550)	311	(818)	(49)	(21)	597	(31)
Net Change in Debt	127	(275)	(88)	(62)	206	(204)	94	(220)	(89)	(820)	50
Net Issuance of Shares	60	283	23	-	136	46	48	15	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(637)	(295)	(243)	(281)	(289)	(241)	(229)	(96)	-	-	-
Other	-	8	-	275	(91)	(98)	(95)	(16)	(47)	(107)	(43)
Net Cash From Financing Activities	(450)	(278)	(308)	(68)	(38)	(497)	(182)	(318)	(136)	(927)	7
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(2)	(0)	3	34	(34)	433	(406)	0	217	(220)	(0)
Cash and Equivalents, Beginning of Year	2	(0)	(0)	3	37	3	406	(0)	(0)	221	1
Cash and Equivalents, End of Year	(0)	(0)	3	37	3	436	(0)	(0)	217	1	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pengrowth Energy Corporation (PGF - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	302	174	200	224	531	622	405	335	391	101	75
Net Property, Plant and Equipment	4,010	3,338	3,959	4,122	6,240	5,086	4,779	3,008	2,527	1,030	893
Other Assets	703	623	738	1,365	704	734	403	220	180	342	70
Total Assets	5,015	4,134	4,897	5,710	7,474	6,442	5,588	3,564	3,099	1,473	1,037
Total Current Liabilities	369	365	289	363	402	544	542	193	691	163	282
Long-term Debt	1,509	865	995	1,019	1,719	1,505	1,527	1,451	801	471	372
Deferred Income Taxes	277	160	230	261	291	212	179	-	-	-	-
Other Liabilities and Deferred Credits	349	282	289	681	869	599	689	537	485	218	189
Total Liabilities	2,503	1,672	1,802	2,324	3,282	2,860	2,937	2,182	1,977	852	843
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Shareholder Capital	4,328	4,335	3,076	3,566	4,638	4,558	4,311	3,757	3,638	3,724	3,734
Contributed Surplus (Paid-in Capital)	16	16	19	18	23	27	29	21	17	10	8
Preferred Stock	0	0	-	-	-	-	-	-	-	-	-
Accumulated Earnings	1,953	(1,889)	-	(198)	(468)	(1,003)	(1,689)	(2,396)	(2,533)	(3,113)	(3,547)
Accumulated Cash Distributions / Other	(3,785)	-	-	-	-	-	-	-	-	-	0
Total Shareholder Equity	2,513	2,462	3,095	3,386	4,193	3,582	2,651	1,382	1,122	622	194
Total Liabilities and Shareholder Equity	5,015	4,134	4,897	5,710	7,474	6,442	5,588	3,564	3,099	1,473	1,037
Return on Capital Employed (ROCE)	**10.6%**	**3.4%**	**7.1%**	**3.4%**	**1.5%**	**-4.3%**	**-9.8%**	**-22.5%**	**-6.6%**	**-28.8%**	**-34.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$59.26	$42.94	$48.93	$53.33	$45.35	$48.09	$46.44	$37.54	$41.15	$28.07	$24.19	$41.97	$41.97
Production Costs	$17.02	$14.72	$16.91	$18.50	$18.22	$19.48	$18.30	$14.67	$13.95	$15.45	$11.72	$14.04	$15.39
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$24.06	$22.06	$23.10	$19.86	$21.39	$21.87	$21.21	$16.00	$15.79	$13.11	$18.61	$15.40	$17.17
G&A / Other	$2.33	$2.32	$2.22	$3.42	$2.97	$3.91	$4.11	$3.50	$3.77	$3.88	$3.98	$3.85	$3.83
Pre-tax Results of Operations	$15.85	$3.84	$6.70	$11.56	$2.76	$2.82	$2.82	$3.36	$7.64	-$4.38	-$10.11	$8.67	$5.58
Income Taxes	$0.00	$0.00	$0.00	$2.42	$0.69	$0.53	$0.70	$0.57	$1.84	-$1.08	-$2.53	$2.13	$1.29
Results of Operations	$15.85	$3.84	$6.70	$9.14	$2.07	$2.29	$2.11	$2.79	$5.80	-$3.30	-$7.58	$6.54	$4.29

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pengrowth Energy Corporation (PGF - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	195.9	199.5	186.4	189.2	210.7	199.3	174.9	159.2	88.9	80.9	22.0	64.0	105.2
Liquids Production (b/d)	32,787	31,435	29,886	29,565	37,601	36,694	31,342	34,531	31,050	19,956	14,772	21,926	26,330
Total Production (boe/d)	65,443	64,690	60,958	61,103	72,714	69,905	60,496	61,060	45,872	33,444	18,446	32,587	43,864
% Gas Production	50%	51%	51%	52%	48%	48%	48%	43%	32%	40%	20%	33%	40%
% Oil Production	50%	49%	49%	48%	52%	52%	52%	57%	68%	60%	80%	67%	60%
Proven Reserves:													
Closing Gas Reserves (bcf)	513.9	488.2	531.2	537.1	671.4	555.4	517.1	402.9	311.8	145.2	153.9	203.6	306.2
Closing Oil Reserves (mmbbls)	101.9	95.0	92.5	104.2	139.0	160.3	167.0	148.1	186.5	131.3	137.5	151.8	154.1
Closing Total Proven Reserves (mmboe)	187.5	176.4	181.0	193.7	250.9	252.8	253.2	215.2	238.5	155.5	163.2	185.7	205.1
% Gas Reserves	46%	46%	49%	46%	45%	37%	34%	31%	22%	16%	16%	18%	25%
% Oil Reserves	54%	54%	51%	54%	55%	63%	66%	69%	78%	84%	84%	82%	75%
Proven Reserve Life Index	7.9	7.5	8.2	8.7	9.5	10.0	11.6	9.7	13.9	13.1	24.1	17.0	14.5
Proven Reserve Additions:													
Gas Additions (bcf)	49.4	27.1	107.5	67.0	214.6	-40.9	22.4	-57.6	23.2	-224.5	36.3	(165.1)	(200.3)
Oil Additions (mmbbls)	10.8	3.9	8.7	22.1	45.2	36.8	20.2	-17.6	43.2	-28.7	1.0	15.5	18.1
Total Additions (mmboe)	19.1	8.4	26.6	33.3	80.9	29.9	23.9	-27.2	47.0	-66.1	7.0	-12.0	-15.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	6.7	5.8	9.8	20.8	16.0	63.6	21.8	5.6	46.9	18.9	4.7	70.5	97.9
Net Acquisitions	5.2	(0.8)	9.7	-0.1	63.7	-37.3	-2.5	-22.1	-5.1	-88.6	-0.6	(94.3)	(118.9)
Revisions of Estimates	7.2	3.4	7.0	12.6	1.2	3.6	4.6	-10.7	5.2	3.7	2.9	11.8	5.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	35.1%	68.7%	37.0%	62.5%	19.8%	212.4%	91.1%	-20.5%	99.8%	-28.5%	67.0%	-586.4%	-638.4%
Net Acquisitions	27.1%	-9.3%	36.7%	-0.4%	78.7%	-124.5%	-10.5%	81.2%	-10.9%	134.1%	-8.2%	784.7%	775.9%
Revisions of Estimates	37.8%	40.5%	26.3%	37.9%	1.5%	12.1%	19.4%	39.3%	11.1%	-5.6%	41.2%	-98.3%	-37.5%
Additions as % of Production:													
Gas	69.0%	37.3%	157.9%	97.0%	279.1%	-56.3%	35.1%	-99.2%	71.3%	-760.0%	451.0%	-235.7%	-104.3%
Oil	90.7%	34.2%	79.3%	205.1%	329.2%	274.4%	176.4%	-139.8%	380.8%	-393.4%	18.4%	64.5%	37.6%
Total	79.9%	35.8%	119.4%	149.3%	305.0%	117.3%	108.3%	-122.2%	280.8%	-541.3%	104.5%	-33.7%	-19.2%
Additions as % of Reserves:													
Gas	9.6%	5.6%	20.2%	12.5%	32.0%	-7.4%	4.3%	-14.3%	7.4%	-154.6%	23.6%	-81.1%	-65.4%
Oil	10.6%	4.1%	9.4%	21.2%	32.5%	22.9%	12.1%	-11.9%	23.1%	-21.8%	0.7%	10.2%	11.7%
Total	10.2%	4.8%	14.7%	17.2%	32.3%	11.8%	9.4%	-12.7%	19.7%	-42.5%	4.3%	-6.5%	-7.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$32.4	$6.5	$11.2	$20.8	$0.0	$2.8	$117.1	$0.5	-$0.2	$0.3	$0.0	$0.2	$117.7
Exploration & Development	$346.7	$176.2	$313.0	$595.4	$461.2	$672.9	$701.6	$143.5	$48.8	$90.6	$50.5	$189.9	$1,035.0
Net Acquisitions	$102.7	-$5.5	$514.6	-$8.4	$1,655.2	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	$481.8	$177.2	$838.7	$607.8	$2,116.5	$675.8	$818.8	$143.9	$48.7	$90.9	$50.5	$190.0	$1,152.7
Expenditures as % of Total:													
Land & Seismic	6.7%	3.7%	1.3%	3.4%	0.0%	0.4%	14.3%	0.3%	-0.3%	0.3%	0.0%	0.1%	10.2%
Exploration & Development	72.0%	99.4%	37.3%	98.0%	21.8%	99.6%	85.7%	99.7%	100.3%	99.7%	100.0%	99.9%	89.8%
Net Acquisitions	21.3%	-3.1%	61.4%	-1.4%	78.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (C$million)	$835.8	$514.4	$578.7	$627.2	$539.1	$544.8	$458.0	$359.7	$324.6	$53.5	$23.6	$401.8	$1,219.5
Cashflow (C$/boe)	$34.99	$21.79	$26.01	$28.12	$20.31	$21.35	$20.74	$16.14	$19.39	$4.38	$3.51	$11.26	$15.23
Recycle Ratio	1.4x	1.0x	0.8x	1.5x	0.8x	0.9x	0.6x	-3.1x	18.7x	-3.2x	0.5x	-0.7x	-0.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$27.26	$19.80	$19.28	$18.44	$26.78	$10.06	$30.97	-$28.12	$0.93	$4.03	$6.63	$2.31	$11.13
Net Acquisition Costs	$19.88	$6.98	$52.78	$67.34	$25.98	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
All Sources (incl. revisions)	$25.26	$20.99	$31.57	$18.26	$26.15	$22.58	$34.23	-$5.29	$1.03	-$1.38	$7.17	-$15.81	-$75.19
Exploration & Development (excl. revisions)	$56.63	$31.49	$32.99	$29.64	$28.78	$10.63	$37.56	$25.74	$1.04	$4.82	$10.71	$2.70	$11.78
Net Acquisition Costs	$19.88	$6.98	$52.78	$67.34	$25.98	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
All Sources (excl. revisions)	$40.62	$35.31	$42.85	$29.41	$26.54	$25.68	$42.47	-$8.72	$1.16	$3.90	$6.62	-$7.97	-$54.70

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

Pengrowth Energy Corporation (PGF - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.02	14.72	16.91	18.50	18.22	19.48	18.30	14.67	13.95	15.45	11.72	14.04	15.39
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.33	2.32	2.22	3.42	2.97	3.91	4.11	3.50	3.77	3.88	3.98	3.85	3.83
F&D Costs (1-Year)	25.26	20.99	31.57	18.26	26.15	22.58	34.23	25.74	1.03	3.90	7.17	4.04	14.42
Return on Capital	12.41	9.86	15.92	9.98	15.39	14.08	25.14	15.49	0.92	3.27	12.04	4.50	13.45
Income Taxes	-	-	-	2.63	5.13	3.25	8.38	3.16	0.29	1.07	4.01	1.47	4.05
Breakeven Oil Price	**57.02**	**47.90**	**66.63**	**52.78**	**67.86**	**63.31**	**90.17**	**62.56**	**19.97**	**27.57**	**38.91**	**27.90**	**51.14**
Quality Differential	8.94	6.72	7.17	13.58	21.44	17.53	13.44	11.09	11.75	10.69	21.01	14.48	13.60
Required Brent Price	**65.96**	**54.62**	**73.79**	**66.36**	**89.30**	**80.84**	**103.61**	**73.65**	**31.72**	**38.26**	**59.93**	**42.38**	**64.74**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.68	20.96	25.14	29.85	29.94	30.37	26.41	19.45	17.42	20.15	13.61	17.54	20.31
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.96	3.30	3.30	5.51	4.88	6.10	5.94	4.64	4.71	5.07	4.62	4.81	5.05
F&D Costs (1-Year)	31.02	30.43	55.69	24.25	40.73	19.26	33.35	42.93	1.08	5.52	15.01	7.20	19.58
Return on Capital	15.43	14.75	28.77	13.98	25.31	13.56	27.47	28.35	1.08	5.41	26.30	8.90	20.18
Income Taxes	-	-	-	3.69	8.44	3.13	9.16	5.78	0.34	1.77	8.77	2.90	6.08
Breakeven Oil Price	**71.10**	**69.44**	**112.90**	**77.29**	**109.30**	**72.43**	**102.32**	**101.15**	**24.63**	**37.93**	**68.29**	**41.35**	**71.19**
Quality Differential	11.39	9.57	10.65	21.92	35.23	27.33	19.39	14.70	14.67	13.94	27.41	18.67	18.02
Required Brent Price	**82.49**	**79.02**	**123.56**	**99.22**	**144.52**	**99.76**	**121.71**	**115.86**	**39.31**	**51.87**	**95.70**	**60.02**	**89.21**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.68	20.96	25.14	29.85	29.94	30.37	26.41	19.45	17.42	20.15	13.61	17.54	20.31
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.96	3.30	3.30	5.51	4.88	6.10	5.94	4.64	4.71	5.07	4.62	4.81	5.05
F&D Costs (1-Year)	40.79	22.56	59.62	31.10	49.64	69.99	30.38	44.38	27.38	6.95	42.06	25.46	30.23
Return on Capital	20.45	11.00	30.70	18.00	30.59	49.33	25.07	29.26	27.30	6.81	73.97	31.45	30.86
Income Taxes	-	-	-	4.76	10.20	11.39	8.36	5.96	8.68	2.23	24.66	10.26	9.29
Breakeven Oil Price	**85.89**	**57.82**	**118.76**	**89.23**	**125.25**	**167.18**	**96.15**	**103.69**	**85.50**	**41.21**	**158.92**	**89.52**	**95.74**
Quality Differential	11.39	9.57	10.65	21.92	35.23	27.33	19.39	14.70	14.67	13.94	27.41	18.67	18.02
Required Brent Price	**97.28**	**67.40**	**129.42**	**111.15**	**160.47**	**194.51**	**115.54**	**118.40**	**100.17**	**55.15**	**186.32**	**108.20**	**113.77**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

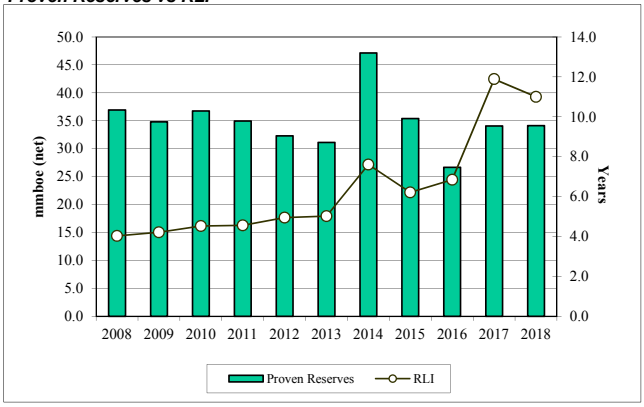
Perpetual Energy Inc. (PMT - TSX)

US$, net

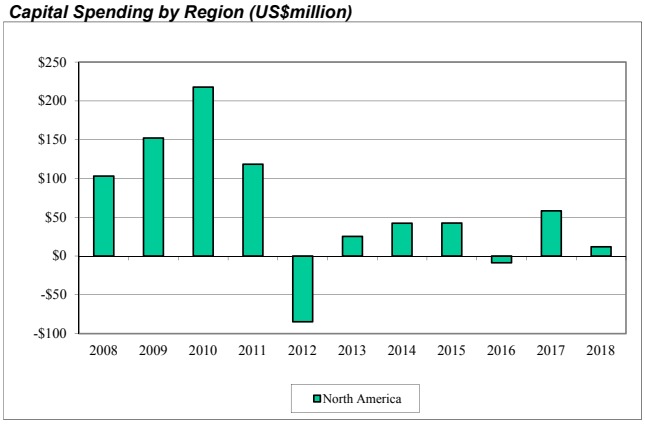
- Perpetual reported results of operations of $0.67/boe in 2018 versus a $1.11/boe in 2017.
- The company reported one-year F&D costs of $4.17/boe versus $6.47/boe last year. On a realized oil:gas price ratio basis, F&D costs were $5.34/boe, while costs for PD reserves were $12.37/boe.
- On a realized ratio basis on total proved reserves, Perpetual's operations imply a required Brent breakeven oil price of $49.67/boe, while PD costs suggest a breakeven oil price of $63.03/boe.
- Perpetual reported a loss on capital of 3.8% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

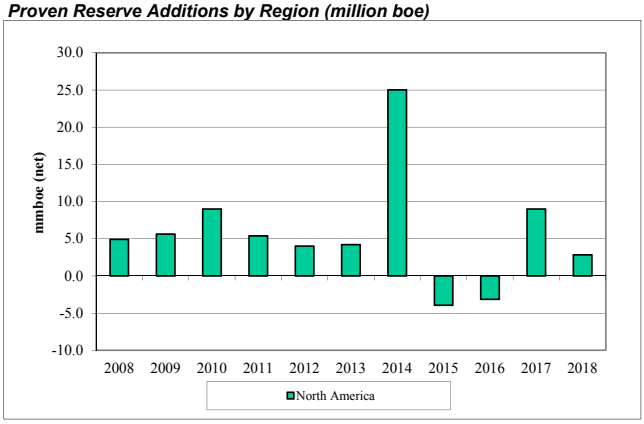
Proven Reserves vs RLI



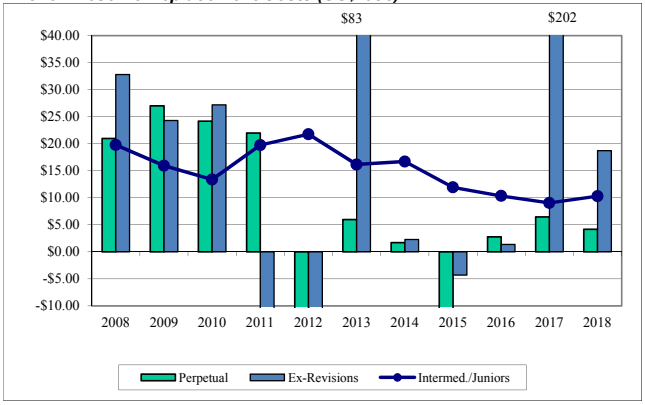
Capital Spending by Region (US$million)



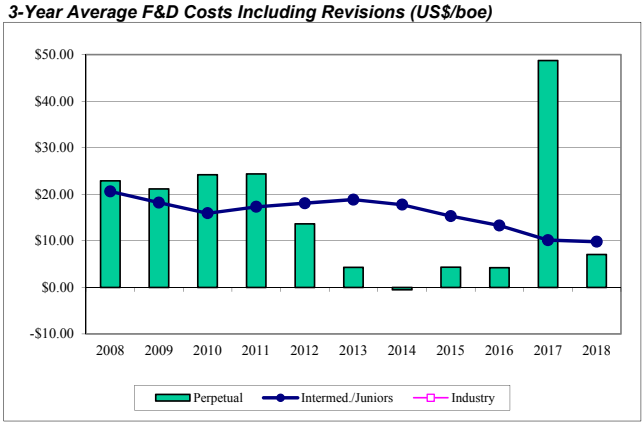
Proven Reserve Additions by Region (million boe)



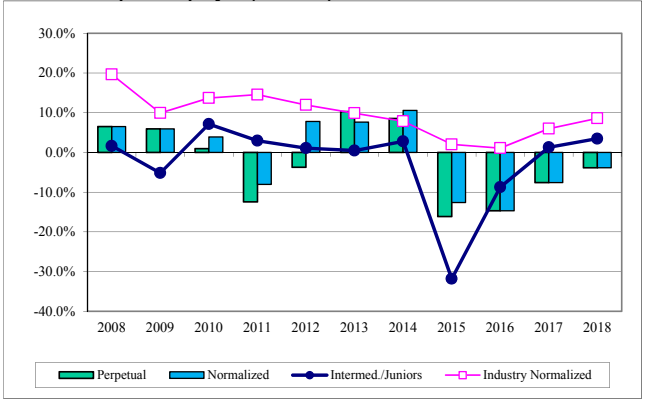
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



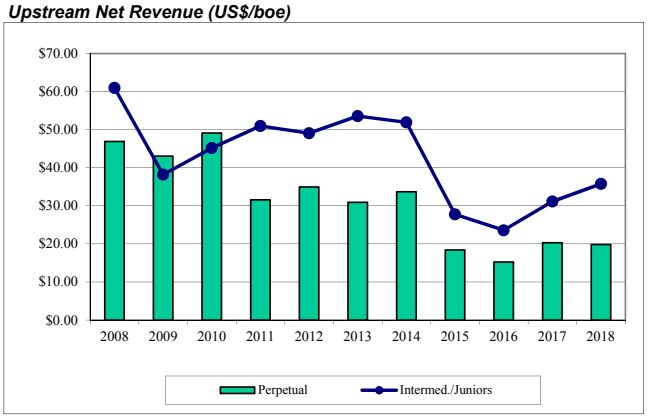
Source: BMO Capital Markets, Company Reports

Perpetual Energy Inc. (PMT - TSX)

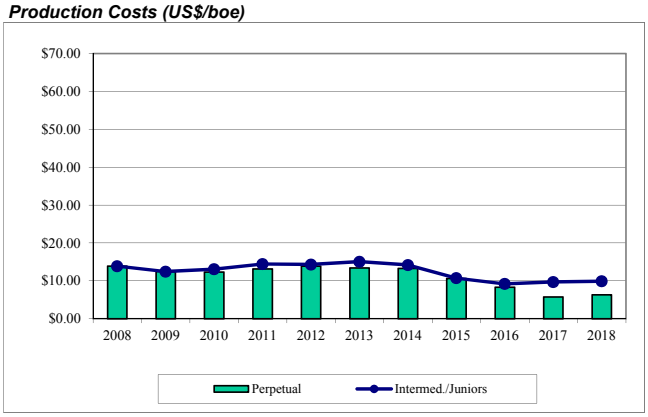
US$/boe, net

North America

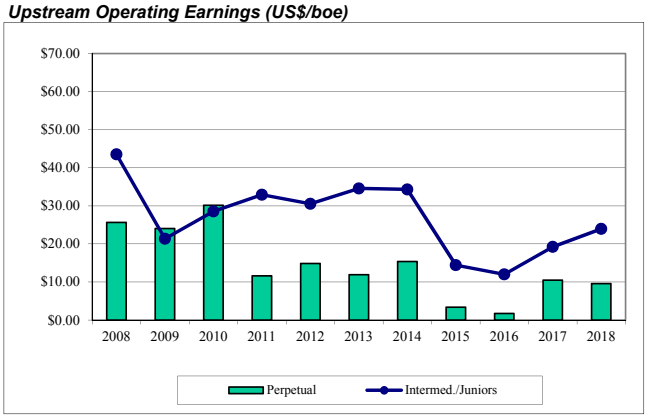
Upstream Net Revenue (US$/boe)



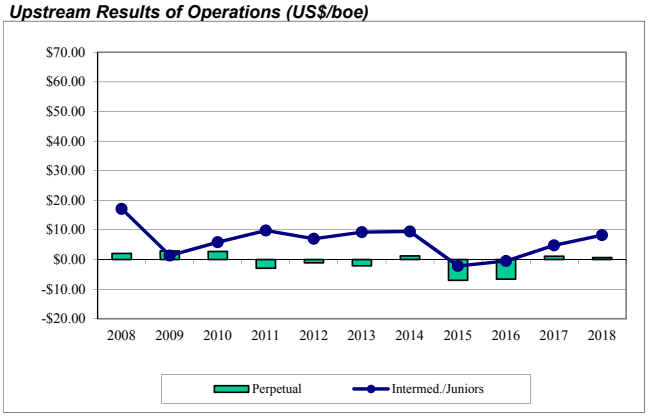
Production Costs (US$/boe)



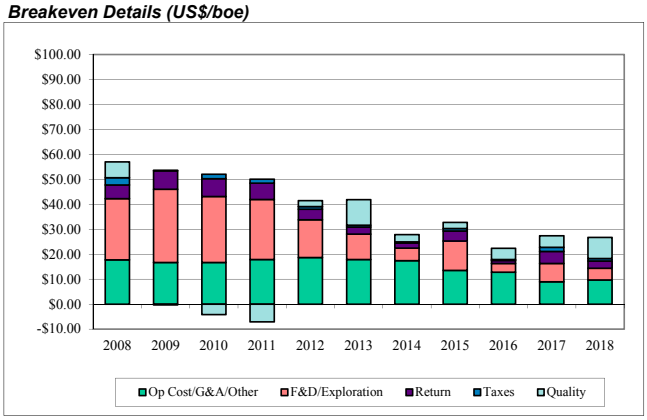
Upstream Operating Earnings (US$/boe)



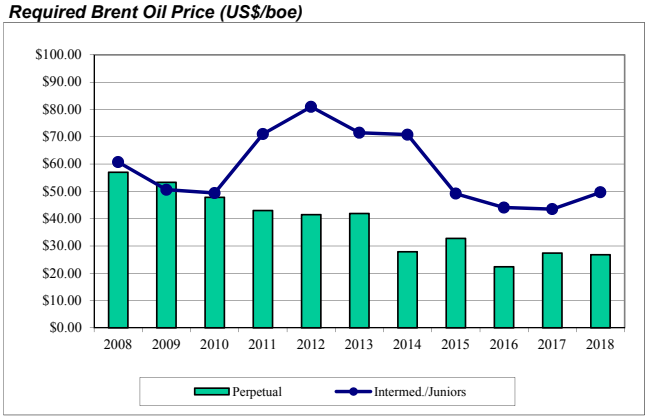
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Perpetual Energy Inc. (PMT - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	426	202	231	230	164	177	209	99	54	54	58
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	44	161	106	3	64	16	11	(6)	15	6	8
Total Revenue and Other Income	470	362	337	233	228	193	220	92	70	60	66
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	127	103	100	101	91	83	82	60	32	16	20
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	32	19	19	16	9	7	5	8	3	3	2
General and Administrative	35	35	35	36	31	28	26	17	17	9	11
Depreciation, Depletion and Amortization	206	174	217	117	106	90	86	69	41	26	27
Interest, net	30	27	31	38	36	37	34	22	19	6	8
Other	(6)	(7)	(39)	12	(1)	(59)	(17)	(14)	(124)	28	15
Earnings Before Income Tax	44	12	(26)	(95)	(50)	7	3	(70)	81	(28)	(16)
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	15	0	2	2	(4)	-	-	-	-	-	-
Total Income Taxes	15	0	2	2	(4)	-	-	-	-	-	-
Minority Interest	0	1	1	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	29	13	(27)	(97)	(46)	7	3	(70)	81	(28)	(16)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	29	13	(27)	(97)	(46)	7	3	(70)	81	(28)	(16)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	29	13	(27)	(97)	(46)	7	3	(70)	81	(28)	(16)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	29	13	(27)	(97)	(46)	7	3	(70)	81	(28)	(16)
Charges and Credits Not Impacting Cash	242	184	230	127	108	93	88	74	43	28	28
Other	(20)	(7)	16	40	(14)	(49)	(11)	(7)	(126)	22	10
Cash Flow From Operations	251	190	218	71	47	51	80	(3)	(2)	22	22
Change in Working Capital / Other	(6)	11	15	(10)	1	(0)	(5)	12	(4)	(7)	2
Net Cash From Operating Activities	245	201	233	61	49	51	74	10	(5)	15	24
Total Capital Expenditures	(110)	(54)	(164)	(148)	(80)	(93)	(105)	(60)	(11)	(56)	(21)
Acquisitions, net	17	(17)	(57)	(19)	167	69	64	19	19	2	2
Other	6	(2)	19	42	(8)	(20)	27	(19)	2	15	(10)
Net Cash From Investing Activities	(87)	(73)	(202)	(125)	79	(44)	(14)	(61)	11	(39)	(28)
Net Change in Debt	(52)	(67)	(83)	(53)	(53)	(7)	(66)	47	(20)	18	5
Net Issuance of Shares	4	1	53	(5)	-	0	0	(1)	17	6	(0)
Net Change in Preferred Stock	-	-	-	-	(75)	-	-	-	-	-	-
Cash Dividends Paid	(108)	(55)	(34)	(29)	-	-	-	-	-	-	-
Other	(2)	(7)	33	151	0	(0)	17	(3)	(1)	(2)	(1)
Net Cash From Financing Activities	(158)	(128)	(32)	64	(128)	(7)	(49)	43	(5)	22	4
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(0)	-	0	(0)	-	(0)	10	(7)	1	(2)	(0)
Cash and Equivalents, Beginning of Year	(0)	(0)	(0)	(0)	(0)	(0)	(0)	9	2	2	(0)
Cash and Equivalents, End of Year	(0)	(0)	(0)	(0)	(0)	(0)	10	2	2	(0)	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Perpetual Energy Inc. (PMT - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	103	82	49	77	65	37	72	135	70	42	35
Net Property, Plant and Equipment	900	812	927	838	651	646	585	317	202	239	221
Other Assets	40	44	32	116	5	38	23	21	2	1	3
Total Assets	1,043	938	1,008	1,030	722	721	680	473	273	282	259
Total Current Liabilities	73	98	77	139	49	119	124	88	62	47	71
Long-term Debt	470	376	391	132	377	294	245	213	45	82	47
Deferred Income Taxes	15	-	2	4	-	-	-	-	-	-	-
Other Liabilities and Deferred Credits	240	239	293	673	259	213	214	135	28	29	31
Total Liabilities	798	713	762	947	685	625	584	436	135	159	150
Minority Interests	2	1	-	-	-	-	-	-	-	-	-
Shareholder Capital	1,046	1,018	1,221	1,269	1,256	1,221	1,140	1,016	1,003	1,031	1,033
Contributed Surplus (Paid-in Capital)	12	17	19	16	19	21	33	30	32	34	34
Preferred Stock	7	10	15	14	14	14	3	-	-	-	-
Accumulated Earnings	75	(822)	(1,009)	(1,216)	(1,253)	(1,160)	(1,079)	(1,013)	(896)	(942)	(959)
Accumulated Cash Distributions / Other	(897)	-	-	-	-	-	(1)	3	(1)	1	1
Total Shareholder Equity	243	224	246	83	36	95	96	37	138	123	109
Total Liabilities and Shareholder Equity	1,043	938	1,008	1,030	722	721	680	473	273	282	259
Return on Capital Employed (ROCE)	**6.5%**	**5.9%**	**1.0%**	**-12.5%**	**-3.7%**	**10.3%**	**8.6%**	**-16.1%**	**-14.7%**	**-7.6%**	**-3.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$46.91	$43.06	$49.11	$31.57	$34.97	$30.94	$33.69	$18.39	$15.25	$20.32	$19.82	$18.16	$22.64
Production Costs	$13.87	$12.46	$12.33	$13.15	$13.88	$13.41	$13.27	$10.60	$8.32	$5.74	$6.29	$6.94	$9.70
Exploration	$3.51	$2.33	$2.29	$2.11	$1.42	$1.14	$0.87	$1.47	$0.73	$0.88	$0.55	$0.72	$0.96
DD&A	$22.50	$21.09	$26.74	$15.31	$16.20	$14.55	$13.84	$12.14	$10.53	$9.00	$8.70	$9.51	$11.43
G&A / Other	$3.87	$4.23	$4.34	$4.71	$4.82	$4.46	$4.14	$2.92	$4.47	$3.21	$3.39	$3.77	$3.65
Pre-tax Results of Operations	$3.17	$2.96	$3.41	-$3.72	-$1.35	-$2.63	$1.56	-$8.74	-$8.81	$1.48	$0.89	-$2.77	-$3.10
Income Taxes	$1.09	$0.08	$0.68	-$0.74	-$0.27	-$0.53	$0.31	-$1.75	-$2.20	$0.37	$0.22	-$0.69	-$0.71
Results of Operations	$2.08	$2.88	$2.73	-$2.97	-$1.08	-$2.10	$1.25	-$6.99	-$6.61	$1.11	$0.67	-$2.08	-$2.39

Source: BMO Capital Markets, Company Reports

Perpetual Energy Inc. (PMT - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	150.6	135.7	133.5	126.0	89.0	80.9	84.9	82.7	56.6	39.5	42.2	46.1	61.2
Liquids Production (b/d)	-	-	-	-	3,046	3,499	2,839	1,842	1,253	1,274	1,462	1,330	1,734
Total Production (boe/d)	25,104	22,621	22,242	21,004	17,883	16,981	16,981	15,618	10,678	7,852	8,498	9,010	11,926
% Gas Production	100%	100%	100%	100%	83%	79%	83%	88%	88%	84%	83%	85%	85%
% Oil Production	0%	0%	0%	0%	17%	21%	17%	12%	12%	16%	17%	15%	15%
Proven Reserves:													
Closing Gas Reserves (bcf)	221.5	208.7	220.5	209.7	166.2	162.1	257.2	193.5	141.7	181.3	173.4	165.5	189.4
Closing Oil Reserves (mmbbls)	-	-	-	-	4.6	4.1	4.3	3.2	3.1	3.9	5.2	4.0	3.9
Closing Total Proven Reserves (mmboe)	36.9	34.8	36.7	35.0	32.3	31.1	47.1	35.4	26.7	34.1	34.1	31.6	35.5
% Gas Reserves	100%	100%	100%	100%	86%	87%	91%	91%	89%	89%	85%	87%	89%
% Oil Reserves	0%	0%	0%	0%	14%	13%	9%	9%	11%	11%	15%	13%	11%
Proven Reserve Life Index	4.0	4.2	4.5	4.6	4.9	5.0	7.6	6.2	6.8	11.9	11.0	9.9	8.7
Proven Reserve Additions:													
Gas Additions (bcf)	29.4	33.8	54.0	32.3	14.5	21.2	140.8	-22.3	-22.0	47.3	5.9	31.1	149.6
Oil Additions (mmbbls)	0.0	0.0	0.0	0.0	1.6	0.7	1.6	-0.2	0.5	1.1	1.9	3.5	4.8
Total Additions (mmboe)	4.9	5.6	9.0	5.4	4.0	4.2	25.0	-4.0	-3.2	9.0	2.8	8.7	29.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	3.1	1.6	6.3	0.0	5.8	6.5	18.9	0.0	0.0	0.2	0.4	0.5	19.5
Net Acquisitions	0.0	4.7	1.7	-1.3	-5.6	-6.2	-0.3	-9.9	-6.5	0.1	0.3	(6.1)	(16.2)
Revisions of Estimates	1.8	(0.6)	1.0	6.6	3.9	3.9	6.4	5.9	3.3	8.7	2.2	14.2	(4.4)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	63.1%	28.2%	70.5%	0.0%	143.6%	154.5%	75.7%	0.0%	-0.1%	1.8%	13.1%	6.2%	65.5%
Net Acquisitions	0.9%	83.0%	18.5%	-23.3%	-140.6%	-147.3%	-1.2%	249.8%	204.5%	1.4%	9.2%	-70.0%	-54.6%
Revisions of Estimates	36.0%	-11.2%	11.0%	123.3%	97.0%	92.8%	25.4%	-149.8%	-104.4%	96.8%	77.7%	163.8%	-14.9%
Additions as % of Production:													
Gas	53.5%	68.2%	110.8%	70.3%	44.7%	71.8%	454.5%	-73.8%	-106.7%	328.0%	38.1%	61.7%	134.1%
Oil	0.0%	0.0%	0.0%	0.0%	143.7%	53.2%	149.8%	-35.7%	112.1%	240.1%	347.7%	239.3%	151.6%
Total	53.5%	68.2%	110.8%	70.3%	61.5%	68.0%	403.6%	-69.3%	-81.0%	313.8%	91.4%	87.9%	136.6%
Additions as % of Reserves:													
Gas	13.3%	16.2%	24.5%	15.4%	8.7%	13.1%	54.7%	-11.5%	-15.5%	26.1%	3.4%	18.8%	79.0%
Oil	0.0%	0.0%	0.0%	0.0%	34.8%	16.6%	36.5%	-7.6%	16.8%	29.0%	35.6%	86.2%	122.8%
Total	13.3%	16.2%	24.5%	15.4%	12.4%	13.5%	53.1%	-11.2%	-11.8%	26.4%	8.3%	27.4%	83.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$0.0	$0.0	$13.4	$16.6	$0.0	$1.2	$0.6	$1.2	$0.0	$0.0	$0.0	$0.0	$1.8
Exploration & Development	$95.4	$57.2	$155.0	$136.1	$80.0	$92.8	$105.4	$59.8	$11.0	$56.3	$20.8	$88.1	$253.3
Net Acquisitions	$7.6	$94.9	$49.2	-$34.3	-$164.9	-$68.8	-$63.7	-$18.6	-$19.8	$1.9	-$8.9	-$26.9	-$109.2
Total Expenditures	$103.0	$152.1	$217.7	$118.4	-$84.8	$25.2	$42.3	$42.4	-$8.8	$58.2	$11.8	$61.2	$145.9
Expenditures as % of Total:													
Land & Seismic	0.0%	0.0%	6.2%	14.1%	0.0%	4.9%	1.4%	2.8%	-0.2%	0.0%	0.0%	0.0%	1.2%
Exploration & Development	92.6%	37.6%	71.2%	115.0%	-94.4%	367.9%	249.2%	141.0%	-125.6%	96.8%	175.5%	143.9%	173.6%
Net Acquisitions	7.4%	62.4%	22.6%	-29.0%	194.4%	-272.8%	-150.6%	-43.8%	225.8%	3.2%	-75.5%	-43.9%	-74.8%
Cashflow (C$million)	$266.3	$216.1	$224.9	$70.0	$47.4	$52.5	$87.9	-$3.4	-$2.2	$28.7	$29.0	$55.4	$139.9
Cashflow (C$/boe)	$24.65	$22.51	$24.56	$8.20	$6.50	$7.76	$11.84	-$0.48	-$0.43	$7.96	$7.51	$5.62	$6.43
Recycle Ratio	1.2x	0.8x	1.0x	0.4x	-0.3x	1.3x	2.8x	0.0x	-0.1x	1.3x	0.9x	0.9x	-0.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$19.60	$59.54	$22.96	$22.99	$8.28	$9.02	$4.19	$10.30	$3.34	$6.35	$8.07	$5.98	$16.94
Net Acquisition Costs	$179.33	$20.32	$29.61	$27.35	$29.19	$11.08	$221.18	$1.88	$3.07	$14.54	-$34.12	$4.43	$6.73
All Sources (incl. revisions)	$20.99	$27.00	$24.19	$21.98	-$21.12	$5.98	$1.69	-$10.73	$2.78	$6.47	$4.17	$7.06	-$124.65
Exploration & Development (excl. revisions)	$30.79	$35.94	$26.56	nm	$13.88	$14.44	$5.60	nm	$2,810.60	$351.55	$56.10	$164.96	$13.10
Net Acquisition Costs	$179.33	$20.32	$29.61	$27.35	$29.19	$11.08	$221.18	$1.88	$3.07	$14.54	-$34.12	$4.43	$6.73
All Sources (excl. revisions)	$32.80	$24.29	$27.19	-$94.30	-$711.33	$82.84	$2.27	-$4.30	$1.36	$201.56	$18.72	-$11.07	$44.97

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Perpetual Energy Inc. (PMT - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.87	12.46	12.33	13.15	13.88	13.41	13.27	10.60	8.32	5.74	6.29	6.94	9.70
Exploration Expense	3.51	2.33	2.29	2.11	1.42	1.14	0.87	1.47	0.73	0.88	0.55	0.72	0.96
G&A/Other	3.87	4.23	4.34	4.71	4.82	4.46	4.14	2.92	4.47	3.21	3.39	3.77	3.65
F&D Costs (1-Year)	20.99	27.00	24.19	21.98	13.65	9.02	4.19	10.30	2.78	6.47	4.17	7.06	5.58
Return on Capital	5.53	7.42	7.10	6.51	4.28	2.89	2.00	3.99	1.19	4.84	2.88	4.38	3.02
Income Taxes	2.91	0.20	1.78	1.63	1.07	0.72	0.50	1.00	0.40	1.61	0.96	1.46	0.90
Breakeven Oil Price	**50.68**	**53.64**	**52.02**	**50.09**	**39.13**	**31.64**	**24.97**	**30.29**	**17.90**	**22.76**	**18.25**	**24.32**	**23.82**
Quality Differential	6.33	(0.32)	(4.22)	(7.13)	2.34	10.23	2.90	2.47	4.48	4.65	8.51	5.88	4.60
Required Brent Price	**57.01**	**53.32**	**47.80**	**42.96**	**41.47**	**41.87**	**27.87**	**32.76**	**22.38**	**27.40**	**26.75**	**30.20**	**28.42**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.37	30.18	33.64	42.83	38.29	30.78	28.42	20.89	18.60	12.11	13.27	14.96	20.37
Exploration Expense	5.92	5.64	6.26	6.87	3.93	2.61	1.86	2.90	1.64	1.86	1.16	1.55	2.02
G&A/Other	6.53	10.24	11.83	15.35	13.31	10.25	8.87	5.75	9.99	6.78	7.15	8.12	7.67
F&D Costs (1-Year)	35.37	65.41	66.02	71.58	18.29	21.68	10.32	22.99	10.20	14.36	5.34	11.33	12.64
Return on Capital	9.25	17.90	19.44	21.20	5.51	6.24	4.40	8.70	4.36	10.07	3.61	6.79	6.56
Income Taxes	4.86	0.49	4.86	5.30	1.38	1.56	1.10	2.17	1.45	3.36	1.20	2.26	1.96
Breakeven Oil Price	**85.30**	**129.85**	**142.05**	**163.14**	**80.70**	**73.13**	**54.97**	**63.40**	**46.24**	**48.54**	**31.74**	**45.01**	**51.22**
Quality Differential	10.67	(0.79)	(11.51)	(23.21)	6.47	23.48	6.21	4.87	10.01	9.80	17.93	12.58	9.76
Required Brent Price	**95.97**	**129.06**	**130.54**	**139.92**	**87.17**	**96.61**	**61.18**	**68.27**	**56.25**	**58.34**	**49.67**	**57.59**	**60.98**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.37	30.18	33.64	42.83	38.29	30.78	28.42	20.89	18.60	12.11	13.27	14.96	20.37
Exploration Expense	5.92	5.64	6.26	6.87	3.93	2.61	1.86	2.90	1.64	1.86	1.16	1.55	2.02
G&A/Other	6.53	10.24	11.83	15.35	13.31	10.25	8.87	5.75	9.99	6.78	7.15	8.12	7.67
F&D Costs (1-Year)	30.22	51.97	63.25	92.35	31.98	30.08	38.99	8.62	4.08	13.27	12.37	19.53	15.46
Return on Capital	7.93	14.30	18.44	27.32	9.63	8.59	16.47	3.26	1.73	9.31	8.36	11.69	8.03
Income Taxes	4.17	0.39	4.61	6.83	2.41	2.15	4.12	0.81	0.58	3.10	2.79	3.90	2.40
Breakeven Oil Price	**78.14**	**112.72**	**138.04**	**191.56**	**99.54**	**84.46**	**98.72**	**42.22**	**36.62**	**46.43**	**45.10**	**59.75**	**55.94**
Quality Differential	10.67	(0.79)	(11.51)	(23.21)	6.47	23.48	6.21	4.87	10.01	9.80	17.93	12.58	9.76
Required Brent Price	**88.81**	**111.93**	**126.53**	**168.35**	**106.01**	**107.94**	**104.94**	**47.09**	**46.63**	**56.23**	**63.03**	**72.33**	**65.71**

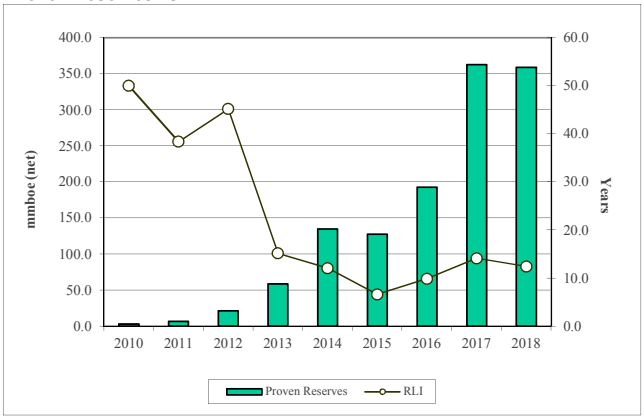
Source: BMO Capital Markets, Company Reports

Sanchez Energy Corp. (SN - NYSE)

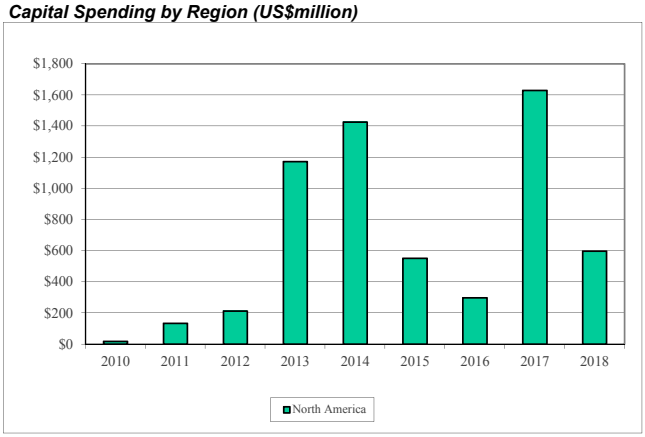
US$, net

- Sanchez generated results of operations of $9.19/boe in 2018 compared to $7.21/boe in 2017.
- One-year F&D costs came in at $23.83/boe compared to $8.32/boe ($12.91/boe ex-dispositions) in 2017. On a realized oil:gas price ratio basis, adjusted F&D costs came in at $28.85/boe while the costs for PD reserves were recorded at $21.09/boe.
- Sanchez's 2018 operations suggest a required Brent breakeven oil price of $101.71/boe on total proved reserves, while PD costs point to a breakeven of $84.31/boe.
- The company reported ROCE of 5.1% in 2018.

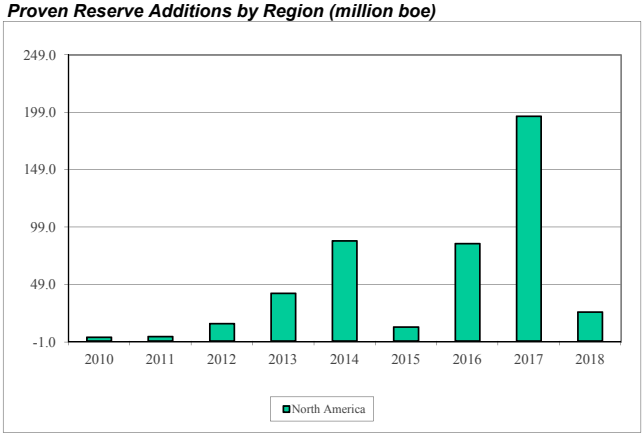
Proven Reserves vs RLI



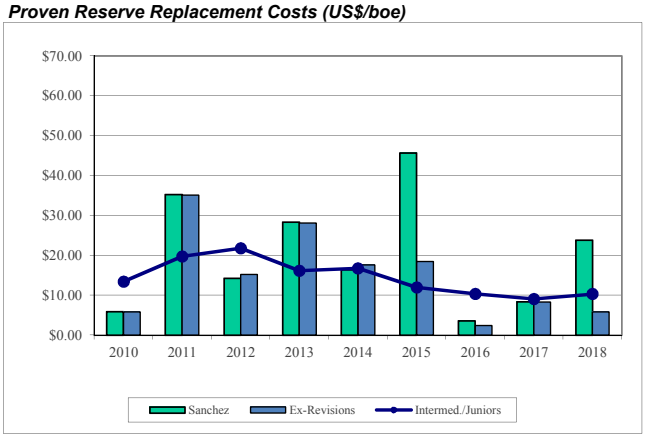
Capital Spending by Region (US$million)



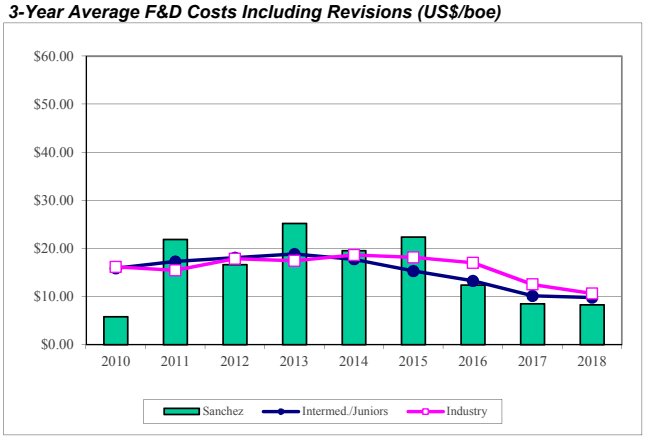
Proven Reserve Additions by Region (million boe)



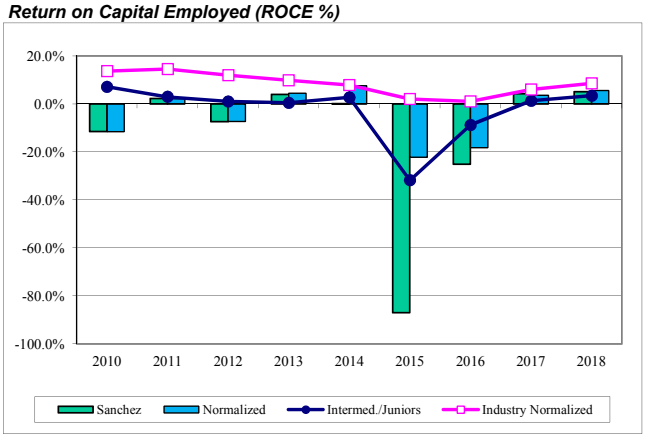
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

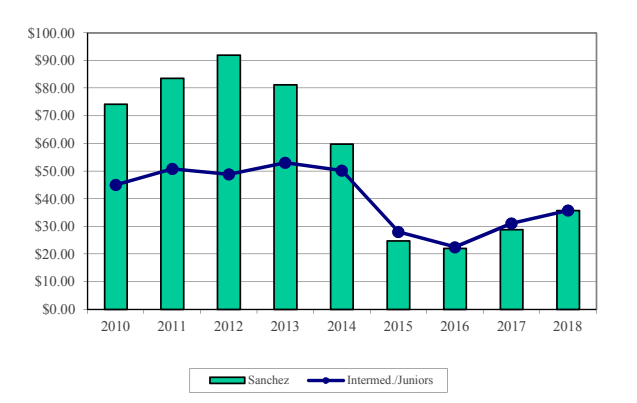
See pages F1 to F4 for analyst coverage.

Sanchez Energy Corp. (SN - NYSE)

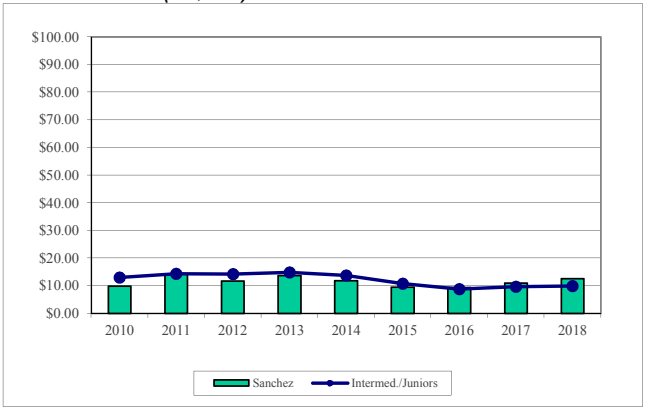
US$/boe, net

North America

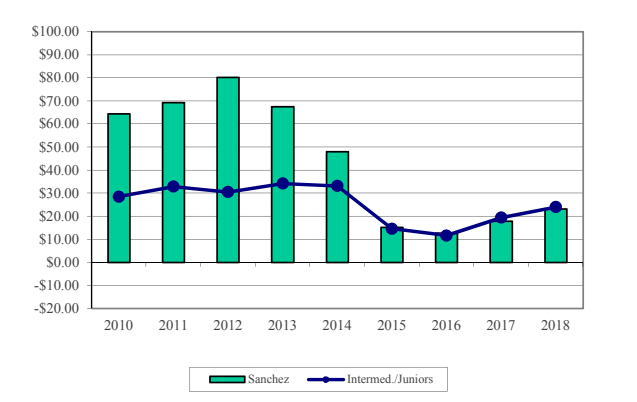
Upstream Net Revenue (US$/boe)



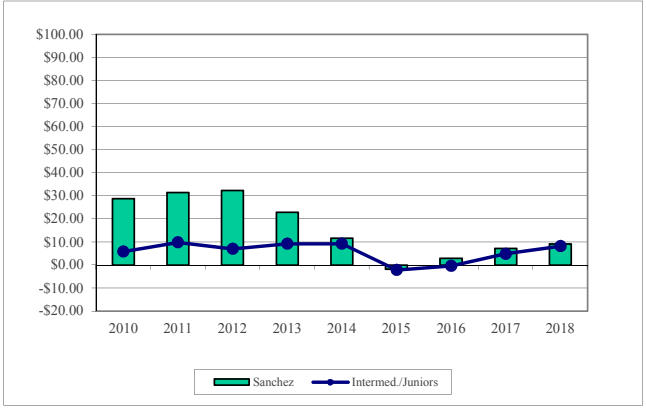
Production Costs (US$/boe)



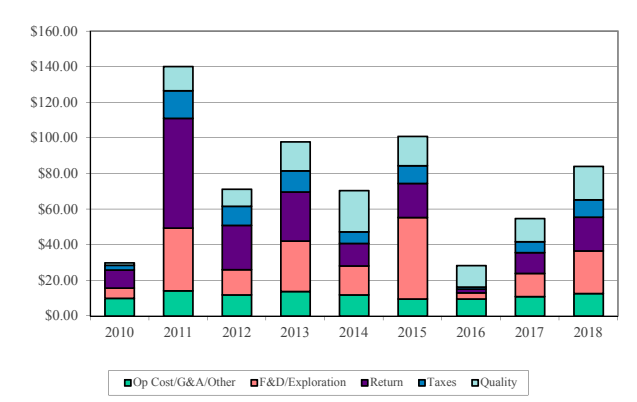
Upstream Operating Earnings (US$/boe)



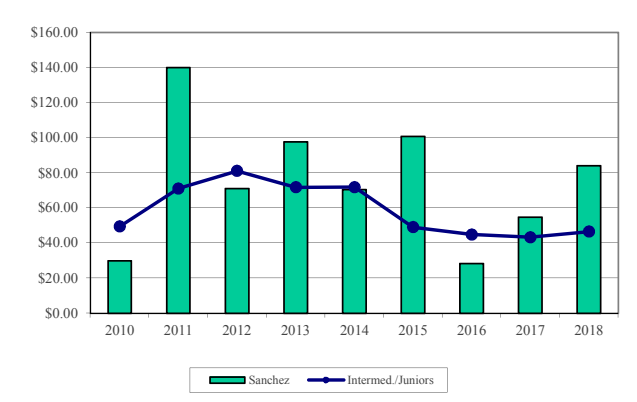
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Sanchez Energy Corp. (SN - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	-	-	5	15	43	314	666	476	431	740	1,031
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-		26
Other	-	-	-	-	-	-	-	-	-		
Total Revenue and Other Income	-	-	5	15	43	314	666	476	431	740	1,057
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	
Production and Transportation Expenses	-	-	1	2	6	53	131	183	184	281	362
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	24
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	3
General and Administrative	-	-	5	5	37	48	64	74	110	144	98
Depreciation, Depletion and Amortization	-	-	1	4	16	135	338	345	160	177	262
Interest, net	-	-	-	(0)	0	31	90	129	126	139	178
Other	-	-	-	0	1	17	77	1,192	106	(42)	44
Earnings Before Income Tax	-	-	(3)	2	(16)	31	(33)	(1,447)	(255)	41	85
Income Taxes:											
Current Income Taxes	-	-	-	-	-	-	-	-	88	(260)	-
Future Income Taxes	-	-	-	-	-	4	(11)	8	(87)	257	-
Total Income Taxes				-	-	4	(11)	8	2	(2)	-
Minority Interest	-	-	-	-	-	-				-	-
Earnings From Continuing Operations	-	-	(3)	2	(16)	27	(22)	(1,455)	(257)	43	85
Discontinued Operations/Extraordinary Items	-	-	-	-	-	(0)	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	(3)	2	(16)	27	(22)	(1,455)	(257)	43	85
Preferred Stock Dividends	-	-	-	-	2	19	34	16	16	78	89
Net Earnings to Common Shareholders	-	-	(3)	2	(18)	8	(55)	(1,471)	(273)	(35)	(3)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	-	-	(3)	2	(16)	27	(22)	(1,455)	(257)	43	85
Charges and Credits Not Impacting Cash	-	-	1	4	16	139	540	1,717	329	216	277
Other	-	-	0	0	26	36	(110)	(18)	115	(26)	(68)
Cash Flow From Operations	-	-	(1)	7	26	202	409	244	186	234	294
Change in Working Capital / Other	-	-	(2)	1	3	(12)	6	28	(5)	59	(28)
Net Cash From Operating Activities	-	-	(4)	7	29	189	415	272	181	292	266
Upstream Spending			(14)	(21)	(170)	(480)	(791)	(656)	(313)	(500)	(616)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	-
Acquisitions, net	-	-	6	(87)	(0)	(625)	(570)	412	174	(876)	1
Other	-	-	-	(2)	(12)	12	-	(50)	31	(6)	-
Net Cash From Investing Activities	-	-	(8)	(110)	(181)	(1,093)	(1,361)	(294)	(109)	(1,383)	(616)
Financing Activities:											
Net Change in Debt	-	-	-	-	-	593	1,152	-	-	704	423
Net Change in Common Stock	-	-	-	220	-	253	176	-	-	115	-
Net Change in Preferred Stock	-	-	-	-	150	225	-	-	-		
Cash Dividends Paid	-	-	-	(38)	(2)	(19)	(16)	(16)	(4)	(44)	(59)
Other	-	-	12	(17)	(8)	(45)	(46)	(0)	(2)	(1)	(1)
Net Cash From Financing Activities	-	-	12	166	140	1,007	1,266	(16)	(6)	773	363
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	(0)	63	(13)	103	320	(39)	67	(317)	13
Cash and Equivalents, Beginning of Year	-	-	-	-	63	50	154	474	435	502	184
Cash and Equivalents, End of Year	-	-	(0)	63	50	154	474	435	502	184	198

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Sanchez Energy Corp. (SN - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	3	66	75	220	682	667	563	351	373
Net Property, Plant and Equipment	-	-	24	151	349	1,385	2,262	756	659	2,027	2,359
Other Assets	-	-	-	-	3	24	132	120	65	92	88
Total Assets	-	-	27	217	427	1,629	3,075	1,542	1,286	2,471	2,820
Liabilities and Stockholders' Equity											
Total Current Liabilities	-	-	5	2	59	159	302	168	177	463	348
Long-term Debt	-	-	-	-	-	593	1,746	1,747	1,713	1,931	2,395
Deferred Income Taxes	-	-	-	-	-	11	-	-	-	-	-
Other Liabilities and Deferred Credits	-	-	0	0	1	9	27	84	93	119	68
Total Liabilities	-	-	5	2	60	772	2,076	1,999	1,982	2,512	2,812
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Common Shares	-	-	-	0	0	0	1	1	1	1	1
Contributed Surplus (Paid-in Capital)	-	-	-	215	385	867	1,065	1,080	1,112	1,362	1,367
Preferred Stock	-	-	-	-	0	0	0	0	0	428	453
Retained Earnings	-	-	-	(0)	(19)	(10)	(66)	(1,536)	(1,809)	(1,832)	(1,813)
Other / Comprehensive Income (Loss)	-	-	22	-	-	-	-	-	-	(0)	0
Total Shareholders' Equity	-	-	22	215	367	857	1,000	(456)	(696)	(42)	8
Total Liabilities and Shareholders' Equity	-	-	27	217	427	1,629	3,075	1,542	1,286	2,471	2,820
Return on Capital Employed (ROCE)	-	-	**-11.5%**	**2.2%**	**-7.3%**	**4.0%**	**0.2%**	**-87.0%**	**-25.1%**	**4.2%**	**5.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	$74.23	$83.51	$91.99	$81.20	$59.78	$24.80	$22.09	$28.84	$35.79	$29.77	$32.06
Production Costs	-	-	$9.86	$14.14	$11.78	$13.69	$11.79	$9.56	$9.43	$10.95	$12.56	$11.18	$10.95
Exploration	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.11	$0.04	$0.03
DD&A	-	-	$23.28	$24.43	$33.94	$34.83	$30.35	$17.96	$8.18	$6.90	$9.11	$8.10	$12.29
G&A/Other	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations	-	-	$41.09	$44.94	$46.28	$32.69	$17.65	-$2.72	$4.47	$10.99	$14.00	$10.44	$8.79
Income Taxes	-	-	$12.33	$13.48	$13.88	$9.81	$6.07	-$0.94	$1.54	$3.78	$4.82	$3.59	$3.03
Results of Operations	-	-	$28.76	$31.46	$32.39	$22.88	$11.58	-$1.78	$2.93	$7.21	$9.19	$6.85	$5.77

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Sanchez Energy Corp. (SN - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	0.1	0.5	0.8	8.4	40.6	103.0	118.3	149.7	151.6	139.9	112.7
Liquids Production (b/d)	-	-	153	400	1,148	9,216	23,753	35,395	33,781	45,367	53,674	44,274	38,394
Total Production (boe/d)	-	-	168	476	1,285	10,608	30,524	52,561	53,502	70,321	78,939	67,587	57,169
% Gas Production	-	-	9%	16%	11%	13%	22%	33%	37%	35%	32%	34%	33%
% Oil Production	-	-	91%	84%	89%	87%	78%	67%	63%	65%	68%	66%	67%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	2.6	6.4	15.8	40.2	209.6	234.5	417.2	771.6	762.4	650.4	479.1
Closing Oil Reserves (mmbbls)	-	-	2.6	5.6	18.6	52.0	99.8	88.6	123.2	234.1	231.9	196.4	155.5
Closing Total Proven Reserves (mmboe)	-	-	3.1	6.7	21.2	58.7	134.8	127.6	192.8	362.7	359.0	304.8	235.4
% Gas Reserves	-	-	14%	16%	12%	11%	26%	31%	36%	35%	35%	36%	34%
% Oil Reserves	-	-	86%	84%	88%	89%	74%	69%	64%	65%	65%	64%	66%
Proven Reserve Life Index	-	-	50.0	38.4	45.2	15.2	12.1	6.7	9.9	14.1	12.5	12.2	11.0
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	2.7	3.9	9.7	27.4	184.3	62.4	225.9	409.1	46.2	681.1	927.9
Oil Additions (mmbbls)	-	-	2.7	3.1	13.4	36.8	56.5	1.7	47.0	127.4	17.4	191.8	249.9
Total Additions (mmboe)	-	-	3.1	3.8	15.0	41.4	87.2	12.1	84.7	195.6	25.1	305.3	404.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	3.1	3.8	14.0	17.0	24.2	35.1	128.5	44.7	-4.0	169.2	228.5
Net Acquisitions	-	-	0.0	0.0	0.0	24.7	56.8	-5.2	-4.4	151.6	106.0	253.2	304.7
Revisions of Estimates	-	-	0.0	0.0	1.0	-0.3	6.2	-17.8	-39.4	-0.7	-77.0	(117.1)	(128.7)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	100.1%	100.4%	93.5%	41.1%	27.7%	290.9%	151.7%	22.9%	-15.8%	55.4%	56.5%
Net Acquisitions	-	-	0.0%	0.0%	0.0%	59.6%	65.1%	-43.2%	-5.2%	77.5%	423.0%	82.9%	75.3%
Revisions of Estimates	-	-	-0.1%	-0.4%	6.5%	-0.7%	7.1%	-147.7%	-46.6%	-0.4%	-307.3%	-38.4%	-31.8%
Additions as % of Production:													
Gas	-	-	8371.9%	2354.5%	3213.0%	899.5%	1243.1%	166.0%	523.0%	748.5%	83.4%	444.7%	451.3%
Oil	-	-	4787.5%	2140.4%	3194.5%	1094.6%	651.1%	12.9%	381.3%	769.6%	88.6%	395.7%	356.7%
Total	-	-	5099.2%	2174.7%	3196.5%	1069.0%	782.4%	62.9%	433.5%	762.2%	86.9%	412.6%	387.8%
Additions as % of Reserves:													
Gas	-	-	101.2%	61.3%	61.3%	68.3%	87.9%	26.6%	54.1%	53.0%	6.1%	104.7%	193.7%
Oil	-	-	102.1%	55.8%	72.1%	70.8%	56.6%	1.9%	38.1%	54.4%	7.5%	97.7%	160.7%
Total	-	-	102.0%	56.7%	70.7%	70.5%	64.7%	9.5%	43.9%	53.9%	7.0%	100.2%	171.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	-	$6.4	$1.7	$59.8	$22.5	$64.5	$30.5	$0.4	$5.8	$3.3	$9.4	$104.4
Development	-	-	$2.9	$20.2	$144.2	$492.2	$806.6	$512.2	$284.6	$562.3	$593.4	$1,440.2	$2,759.1
Net Acquisitions	-	-	$9.0	$111.2	$9.4	$656.4	$554.5	$8.5	$13.5	$1,060.3	$0.4	$1,074.2	$1,637.2
Total Expenditures	-	-	$18.2	$133.1	$213.4	$1,171.1	$1,425.7	$551.2	$298.4	$1,628.4	$597.0	$2,523.8	$4,500.8
Expenditures as % of Total:													
Exploration	-	-	35.0%	1.3%	28.0%	1.9%	4.5%	5.5%	0.1%	0.4%	0.5%	0.4%	2.3%
Development	-	-	15.8%	15.2%	67.6%	42.0%	56.6%	92.9%	95.4%	34.5%	99.4%	57.1%	61.3%
Net Acquisitions	-	-	49.2%	83.5%	4.4%	56.1%	38.9%	1.5%	4.5%	65.1%	0.1%	42.6%	36.4%
Cashflow (US$million)	-	-	-$1.3	$6.7	$25.7	$201.6	$409.1	$244.1	$186.4	$233.6	$293.7	$713.7	$1,366.9
Cashflow (US$/boe)	-	-	-$21.65	$38.54	$54.78	$52.06	$36.72	$12.72	$9.55	$9.10	$10.19	$9.64	$13.10
Recycle Ratio	-	-	-3.7x	1.1x	3.8x	1.8x	2.2x	0.3x	2.7x	1.1x	0.4x	1.2x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	$2.96	$5.79	$13.61	$30.78	$28.66	$31.41	$3.20	$12.91	-$7.37	$27.80	$28.69
Net Acquisition Costs	-	-	na	na	na	na	na	na	na	na	na	na	na
All Sources (incl. revisions)	-	-	$5.83	$35.22	$14.23	$28.29	$16.35	$45.68	$3.53	$8.32	$23.83	$8.27	$11.12
Exploration & Development (excl. revisions)	-	-	$2.96	$5.77	$14.56	$30.22	$36.05	$15.46	$2.22	$12.70	-$151.00	$8.56	$12.53
Net Acquisition Costs	-	-	na	na	na	na	na	na	na	na	na	na	na
All Sources (excl. revisions)	-	-	$5.82	$35.09	$15.23	$28.08	$17.61	$18.44	$2.41	$8.29	$5.85	$5.97	$8.44

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Sanchez Energy Corp. (SN - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	9.86	14.14	11.78	13.69	11.79	9.56	9.43	10.95	12.56	11.18	10.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	0.11	0.04	0.03
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	5.83	35.22	14.23	28.29	16.35	45.68	3.53	12.91	23.83	13.42	20.46
Return on Capital	-	-	10.20	61.76	24.86	27.70	12.53	19.11	2.18	11.72	18.89	10.35	14.16
Income Taxes	-	-	2.55	15.44	10.65	11.87	6.57	10.02	1.14	6.15	9.91	5.43	7.43
Breakeven Oil Price	**-**	**-**	**28.44**	**126.55**	**61.52**	**81.55**	**47.25**	**84.37**	**16.29**	**41.72**	**65.31**	**40.42**	**53.03**
Quality Differential	-	-	1.42	13.55	9.58	16.20	23.23	16.42	12.05	12.94	18.74	14.58	16.68
Required Brent Price	**-**	**-**	**29.85**	**140.10**	**71.10**	**97.75**	**70.48**	**100.79**	**28.34**	**54.66**	**84.06**	**55.00**	**69.71**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	10.45	16.13	12.95	15.20	13.78	11.25	11.20	13.09	15.34	13.45	13.07
Exploration Expense	-	-	-	-	-	-	-	-	-	-	0.14	0.05	0.04
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	6.42	40.64	15.66	30.87	21.23	45.44	4.11	16.30	28.85	16.42	23.18
Return on Capital	-	-	11.22	72.36	27.32	31.57	15.81	19.20	2.55	14.81	22.62	12.64	15.99
Income Taxes	-	-	2.81	18.09	11.71	13.53	8.29	10.07	1.34	7.77	11.86	6.63	8.38
Breakeven Oil Price	**-**	**-**	**30.89**	**147.21**	**67.64**	**91.17**	**59.11**	**85.95**	**19.20**	**51.98**	**78.82**	**49.18**	**60.67**
Quality Differential	-	-	1.50	15.45	10.53	17.99	27.15	19.31	14.31	15.47	22.89	17.56	19.83
Required Brent Price	**-**	**-**	**32.39**	**162.66**	**78.18**	**109.16**	**86.26**	**105.27**	**33.51**	**67.44**	**101.71**	**66.74**	**80.49**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Operating Costs	-	-	10.45	16.13	12.95	15.20	13.78	11.25	11.20	13.09	15.34	13.45	13.07
Exploration Expense	-	-	-	-	-	-	-	-	-	-	0.14	0.05	0.04
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	-	-	35.64	274.76	69.60	52.77	36.10	28.02	16.89	13.79	21.09	15.38	23.18
Return on Capital	-	-	62.50	481.89	122.06	52.62	26.82	11.83	10.49	12.52	16.30	11.76	15.98
Income Taxes	-	-	15.62	120.47	52.31	22.55	14.06	6.21	5.50	6.56	8.55	6.17	8.38
Breakeven Oil Price	**-**	**-**	**124.21**	**893.25**	**256.91**	**143.15**	**90.76**	**57.31**	**44.09**	**45.96**	**61.41**	**46.82**	**60.65**
Quality Differential	-	-	1.50	15.45	10.53	17.99	27.15	19.31	14.31	15.47	22.89	17.56	19.83
Required Brent Price	**-**	**-**	**125.71**	**908.71**	**267.45**	**161.14**	**117.92**	**76.62**	**58.40**	**61.43**	**84.31**	**64.37**	**80.48**

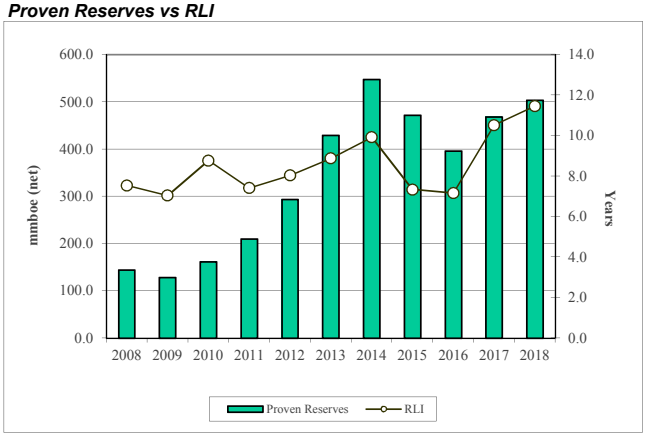
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

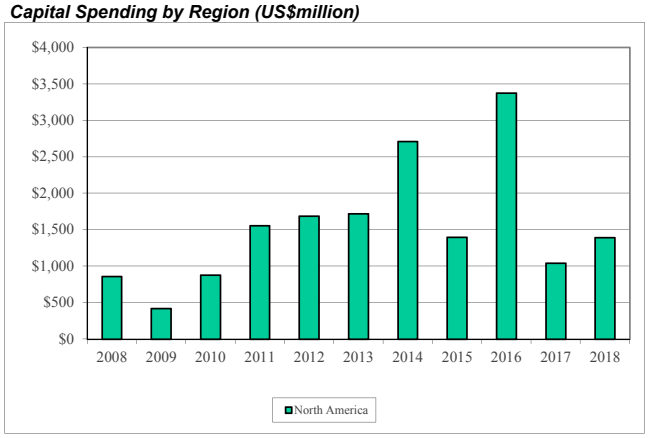
SM Energy Company (SM - NYSE) US$, net

- SM Energy reported results of operations of $5.54/boe in 2018 compared to $0.18/boe in 2017.
- One-year F&D costs came in at $11.62/boe in 2018 compared to $5.40/boe ($14.00/boe ex-revisions) last year. On a realized oil:gas price ratio basis, adjusted F&D costs improved to $13.73/boe versus $24.46/boe in 2017, while costs for PD reserves increased to $18.52/boe from $14.55/boe.
- SM Energy's 2018 results point to a required Brent breakeven oil price of $62.09/boe on total proved reserves, and $71.03/boe on proved developed reserves.
- The company reported a ROCE of 11.3% in 2018.

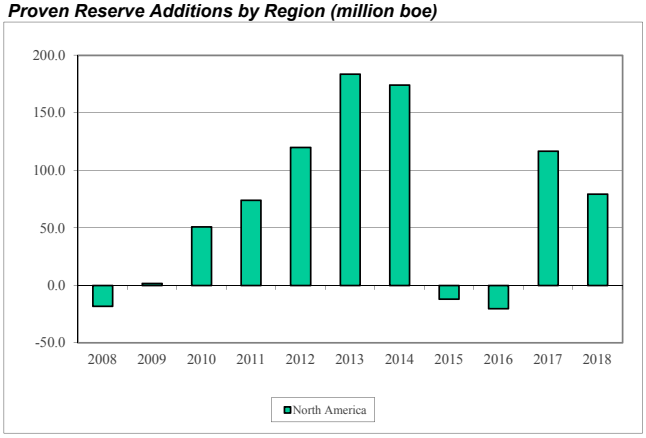
Proven Reserves vs RLI



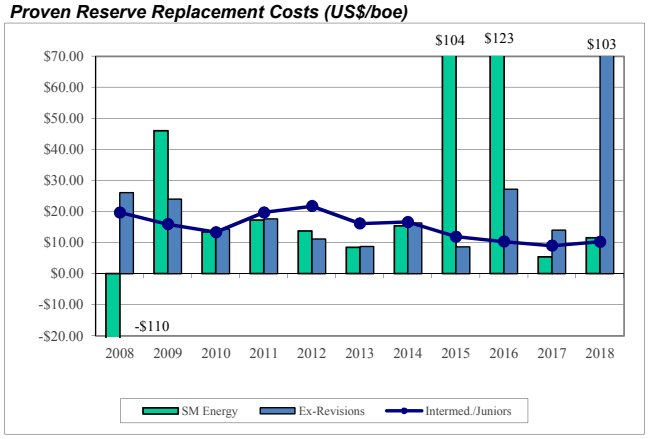
Capital Spending by Region (US$million)



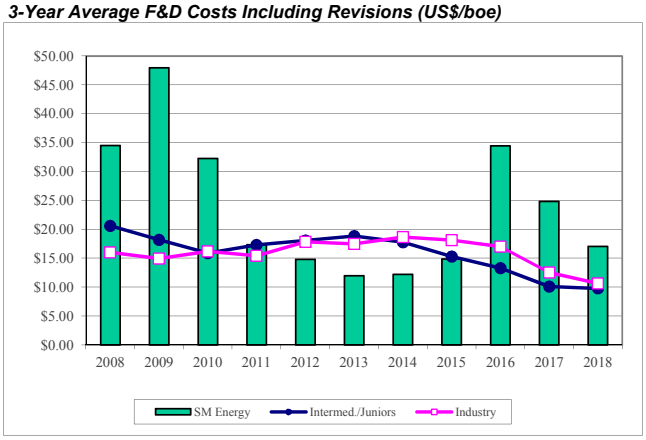
Proven Reserve Additions by Region (million boe)



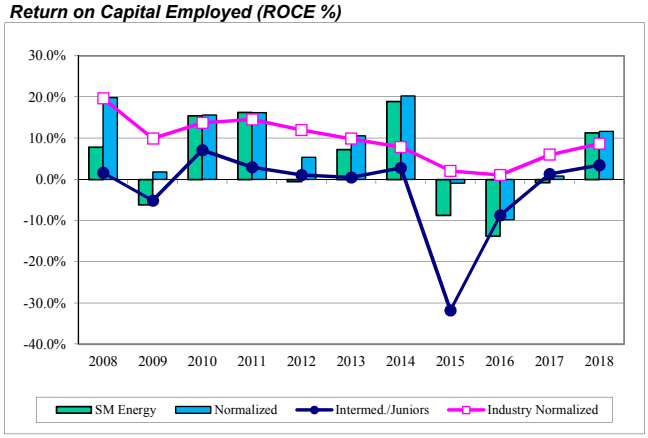
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

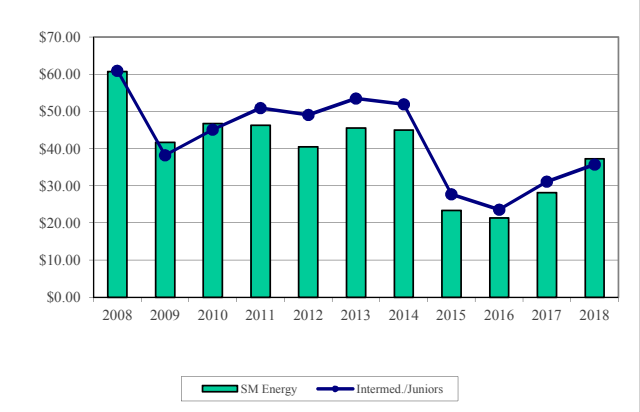
See pages F1 to F4 for analyst coverage.

SM Energy Company (SM - NYSE)

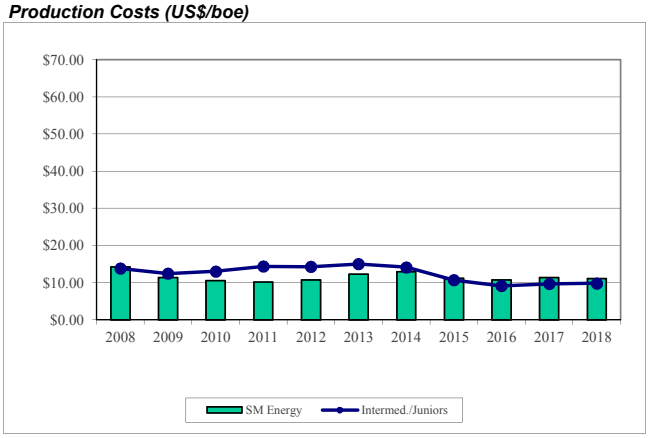
US$/boe, net

North America

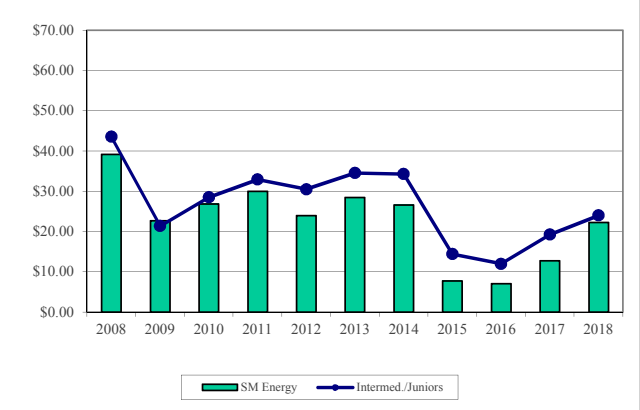
Upstream Net Revenue (US$/boe)



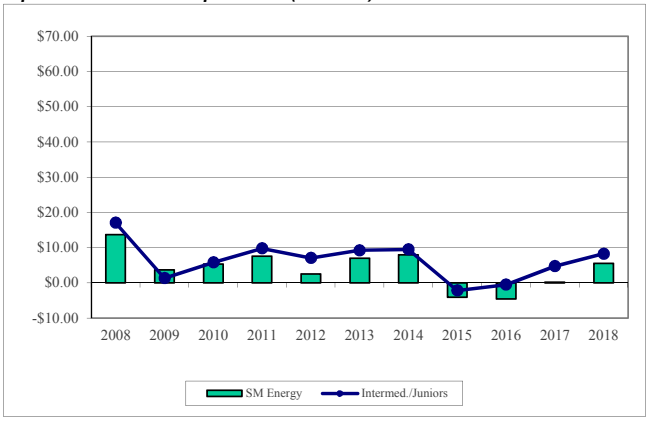
Production Costs (US$/boe)



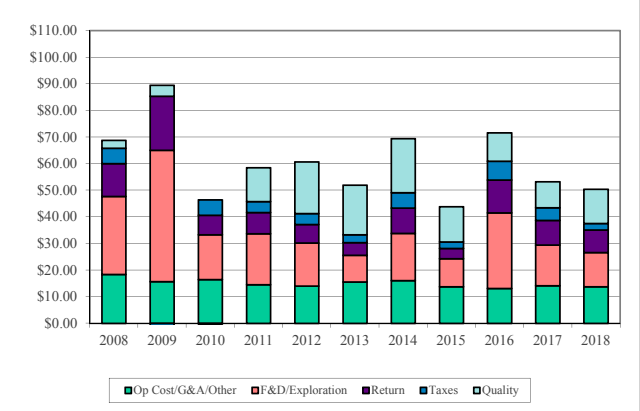
Upstream Operating Earnings (US$/boe)



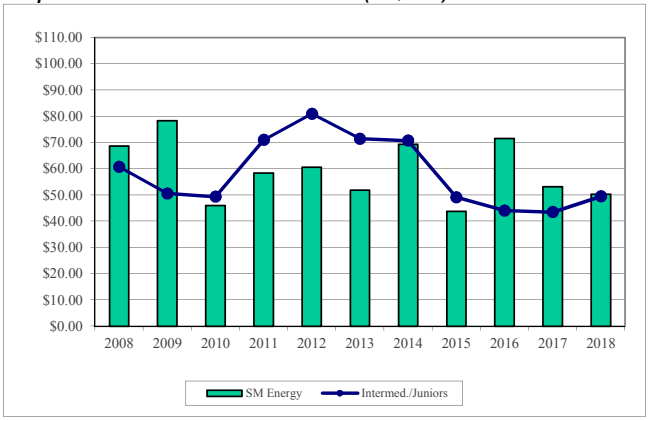
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

SM Energy Company (SM - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,259	616	836	1,332	1,474	2,200	2,482	1,500	1,178	1,254	1,636
Midstream / Downstream Revenue	77	58	70	70	53	60	25	9	-	-	
Other	(35)	158	186	201	(22)	34	16	48	-	(124)	431
Total Revenue and Other Income	1,301	832	1,093	1,603	1,505	2,293	2,522	1,557	1,178	1,129	2,067
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	
Production and Transportation Expenses	271	207	195	290	392	597	716	724	598	508	487
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	60	62	64	54	90	74	130	121	66	56	55
General and Administrative	80	76	107	119	120	150	167	158	126	121	117
Depreciation, Depletion and Amortization	314	304	336	511	728	823	768	921	791	557	665
Interest, net	20	29	24	45	64	90	99	128	159	179	161
Other	405	314	52	246	195	282	(424)	229	641	52	(70)
Earnings Before Income Tax	151	(159)	315	339	(84)	279	1,067	(723)	(1,202)	(344)	652
Current Income Taxes	19	(20)	4	(0)	0	2	1	2	4	9	2
Future Income Taxes	41	(40)	115	124	(30)	106	398	(277)	(449)	(192)	142
Total Income Taxes	60	(60)	118	124	(29)	108	399	(275)	(444)	(183)	143
Minority Interest	-	-	-								
Earnings From Continuing Operations	92	(99)	197	215	(54)	171	669	(448)	(758)	(161)	508
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	92	(99)	197	215	(54)	171	669	(448)	(758)	(161)	508
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	92	(99)	197	215	(54)	171	669	(448)	(758)	(161)	508

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	92	(99)	197	215	(54)	171	669	(448)	(758)	(161)	508
Charges and Credits Not Impacting Cash	710	507	459	854	928	1,107	1,294	1,150	697	371	807
Other	(68)	13	(153)	(268)	38	46	(538)	215	635	235	(608)
Cash Flow From Operations	733	420	503	801	911	1,324	1,425	917	574	446	707
Change in Working Capital / Other	(54)	16	(6)	(41)	10	15	32	62	(21)	70	14
Net Cash From Operating Activities	679	436	497	761	922	1,339	1,457	978	553	515	721
Upstream Spending	(747)	(379)	(668)	(1,633)	(1,508)	(1,554)	(1,975)	(1,494)	(630)	(888)	(1,303)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	
Acquisitions, net	97	40	311	365	50	363	(501)	350	(1,238)	687	715
Other	(24)	35	(4)	4	1	(3)	(3)	(1)	(3)	-	
Net Cash From Investing Activities	(674)	(304)	(362)	(1,265)	(1,457)	(1,193)	(2,479)	(1,145)	(1,871)	(202)	(588)
Net Change in Debt	-	(11)	-	-	105	150	756	177	426	(2)	(353)
Net Change in Common Stock	(65)	3	6	7	6	7	5	5	938	3	3
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	(6)	(6)	(6)	(6)	(7)	(7)	(7)	(7)	(8)	(11)	(11)
Other	29	(113)	(141)	618	318	(20)	(14)	(9)	(30)	(1)	(8)
Net Cash From Financing Activities	(43)	(127)	(141)	618	422	131	740	166	1,327	(12)	(369)
Effect of Exchange Rate on Cash	-	-		-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(37)	5	(6)	114	(113)	276	(282)	(0)	9	302	(236)
Cash and Equivalents, Beginning of Year	44	6	11	5	119	6	282	0	0	12	314
Cash and Equivalents, End of Year	6	11	5	119	6	282	0	0	9	314	78

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

SM Energy Company (SM - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	312	209	275	463	341	648	745	519	225	549	429
Net Property, Plant and Equipment	2,337	2,128	2,434	3,097	3,677	3,860	5,504	4,950	6,081	5,493	5,831
Other Assets	46	24	36	239	182	198	268	152	88	135	92
Total Assets	2,695	2,361	2,744	3,799	4,200	4,705	6,517	5,622	6,394	6,177	6,353
Total Current Liabilities	297	297	502	506	542	639	785	303	415	559	466
Long-term Debt	300	188	48	-	1,440	1,600	2,200	2,316	2,898	2,909	2,596
Deferred Income Taxes	358	308	443	568	537	650	892	758	316	80	223
Other Liabilities and Deferred Credits	613	595	527	1,262	266	209	354	392	268	234	147
Total Liabilities	1,568	1,387	1,520	2,336	2,785	3,098	4,230	3,769	3,896	3,782	3,433
Minority Interests	-	-	-	-	-	-	-	-	-	-	
Common Shares	1	1	1	1	1	1	1	1	1	1	1
Contributed Surplus (Paid-in Capital)	99	161	198	217	232	257	283	306	1,717	1,742	1,766
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	964	852	1,042	1,251	1,190	1,355	2,014	1,560	794	666	1,166
Other / Comprehensive Income (Loss)	63	(39)	(16)	(6)	(9)	(5)	(11)	(13)	(15)	(14)	(12)
Total Shareholders' Equity	1,127	974	1,225	1,463	1,414	1,607	2,287	1,852	2,497	2,395	2,920
Total Liabilities and Shareholders' Equity	2,695	2,361	2,744	3,799	4,200	4,705	6,517	5,622	6,394	6,177	6,353
Return on Capital Employed (ROCE)	**7.8%**	**-6.1%**	**15.4%**	**16.3%**	**-0.6%**	**7.2%**	**18.9%**	**-8.7%**	**-13.8%**	**-0.8%**	**11.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$65.99	$33.94	$45.49	$47.05	$40.38	$45.56	$44.97	$23.35	$21.32	$28.17	$37.27	28.32	30.60
Production Costs	$14.22	$11.39	$10.61	$10.25	$10.74	$12.37	$12.97	$11.27	$10.81	$11.41	$11.10	11.09	11.53
Exploration	$3.15	$3.43	$3.47	$1.89	$2.47	$1.53	$2.35	$1.88	$1.19	$1.26	$1.26	1.23	1.62
DD&A	$16.47	$16.76	$18.29	$18.05	$19.94	$17.04	$13.91	$14.34	$14.30	$12.52	$15.16	14.01	14.07
G&A/Other	$4.17	$4.19	$5.80	$4.19	$3.28	$3.10	$3.03	$2.45	$2.29	$2.71	$2.65	2.53	2.62
Pre-tax Results of Operations	$27.99	-$1.84	$7.32	$12.68	$3.95	$11.51	$12.71	-$6.58	-$7.27	$0.27	$7.11	-0.54	0.76
Income Taxes	$9.00	$2.23	$3.22	$4.36	$1.48	$4.44	$4.76	-$2.51	-$2.69	$0.09	$1.56	-0.17	0.10
Results of Operations	$18.99	-$4.06	$4.10	$8.33	$2.47	$7.08	$7.95	-$4.08	-$4.58	$0.18	$5.54	-0.37	0.66

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$60.70	$41.69	$46.77	$46.32	$40.49	$45.52	$44.97	$23.35	$21.32	$28.17	$37.27	28.32	30.60
Production Costs	$14.22	$11.39	$10.61	$10.25	$10.74	$12.37	$12.97	$11.27	$10.81	$11.41	$11.10	11.09	11.53
Exploration	$3.15	$3.43	$3.47	$1.89	$2.47	$1.53	$2.35	$1.88	$1.19	$1.26	$1.26	1.23	1.62
DD&A	$16.47	$16.76	$18.29	$18.05	$19.94	$17.04	$13.91	$14.34	$14.30	$12.52	$15.16	14.01	14.07
G&A/Other	$4.17	$4.19	$5.80	$4.19	$3.28	$3.10	$3.03	$2.45	$2.29	$2.71	$2.65	2.53	2.62
Pre-tax Results of Operations	$22.69	$5.91	$8.60	$11.95	$4.05	$11.48	$12.71	-$6.58	-$7.27	$0.27	$7.11	-0.54	0.76
Income Taxes	$9.00	$2.23	$3.22	$4.36	$1.48	$4.44	$4.76	-$2.51	-$2.69	$0.09	$1.56	-0.53	0.10
Results of Operations	$13.69	$3.68	$5.37	$7.59	$2.58	$7.04	$7.95	-$4.08	-$4.58	$0.18	$5.54	-0.01	0.66

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

SM Energy Company (SM - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	205.2	194.8	197.0	274.8	328.8	409.0	418.9	475.6	402.5	337.0	282.7	340.7	383.3
Liquids Production (b/d)	18,082	17,260	17,534	31,781	45,205	64,110	81,370	96,712	84,384	65,753	73,151	74,429	80,274
Total Production (boe/d)	52,283	49,726	50,365	77,580	100,000	132,283	151,187	175,982	151,461	121,918	120,274	131,218	144,164
% Gas Production	65%	65%	65%	59%	55%	52%	46%	45%	44%	46%	39%	43%	44%
% Oil Production	35%	35%	35%	41%	45%	48%	54%	55%	56%	54%	61%	57%	56%
Proven Reserves:													
Gas Reserves (bcf)	557.4	444.5	640.0	664.0	833.4	1,189.3	1,466.5	1,264.0	1,111.1	1,280.1	1,321.8	1,237.7	1,288.7
Oil Reserves (mmbbls)	51.0	53.8	54.6	99.2	154.5	230.5	303.2	260.7	210.6	254.7	283.1	249.5	262.5
Total Proven Reserves (mmboe)	143.9	127.9	161.3	209.9	293.4	428.7	547.6	471.4	395.8	468.1	503.4	455.7	477.2
% Gas Reserves	65%	58%	66%	53%	47%	46%	45%	45%	47%	46%	44%	45%	45%
% Oil Reserves	35%	42%	34%	47%	53%	54%	55%	55%	53%	54%	56%	55%	55%
Proven Reserve Life Index	7.5	7.0	8.8	7.4	8.0	8.9	9.9	7.3	7.2	10.5	11.5	9.7	9.3
Proven Reserve Additions:													
Gas Additions (bcf)	18.8	(41.8)	262.4	124.3	289.4	505.2	430.1	-28.9	-6.0	292.0	144.9	430.9	832.1
Oil Additions (mmbbls)	(21.2)	8.7	7.2	53.4	71.8	99.4	102.4	-7.2	-19.3	68.1	55.1	103.9	199.1
Total Additions (mmboe)	(18.1)	1.7	50.9	74.1	120.0	183.6	174.1	-12.0	-20.3	116.8	79.3	175.7	337.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	28.4	17.4	61.2	87.7	150.0	195.5	144.0	160.6	108.2	73.1	13.2	194.4	499.0
Acquisitions	4.5	0.0	0.0	0.0	0.3	1.3	21.8	1.2	15.5	1.3	0.3	17.1	40.1
Dispositions	(10.3)	(7.4)	(14.4)	(15.5)	(2.8)	(18.2)	(2.1)	(25.4)	(47.8)	(76.0)	(40.3)	(164.1)	(191.5)
Revisions of Estimates	(40.7)	(8.3)	4.1	1.9	-27.5	5.0	10.4	-148.4	-96.2	118.4	106.1	128.3	(9.8)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-156.9%	1003.8%	120.2%	118.3%	125.0%	106.5%	82.7%	-1336.1%	-533.0%	62.6%	16.6%	110.7%	147.7%
Acquisitions	-24.9%	0.0%	0.1%	0.0%	0.2%	0.7%	12.5%	-10.0%	-76.4%	1.1%	0.4%	9.7%	11.9%
Dispositions	56.8%	-425.0%	-28.3%	-20.9%	-2.4%	-9.9%	-1.2%	211.1%	235.4%	-65.1%	-50.9%	-93.4%	-56.7%
Revisions of Estimates	225.0%	-478.8%	8.1%	2.6%	-22.9%	2.7%	6.0%	1235.0%	474.1%	101.4%	133.8%	73.0%	-2.9%
Additions as % of Production:													
Gas	25.1%	-58.8%	365.0%	123.9%	241.2%	338.4%	281.3%	-16.6%	-4.1%	237.4%	140.4%	115.5%	118.9%
Oil	-321.2%	138.1%	112.5%	460.3%	435.2%	424.8%	344.8%	-20.4%	-62.7%	283.8%	206.4%	127.5%	135.9%
Total	-94.7%	9.6%	277.1%	261.7%	328.9%	380.3%	315.5%	-18.7%	-36.7%	262.4%	180.5%	122.3%	128.4%
Additions as % of Reserves:													
Gas	3.4%	-9.4%	41.0%	18.7%	34.7%	42.5%	29.3%	-2.3%	-0.5%	22.8%	11.0%	34.8%	64.6%
Oil	-41.6%	16.2%	13.2%	53.8%	46.5%	43.1%	33.8%	-2.8%	-9.2%	26.7%	19.5%	41.6%	75.9%
Total	-12.6%	1.4%	31.6%	35.3%	40.9%	42.8%	31.8%	-2.5%	-5.1%	24.9%	15.7%	38.6%	70.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$92.2	$154.1	$443.9	$177.5	$220.9	$168.6	$288.3	$132.5	$118.2	$271.5	$184.9	$574.7	$995.4
Development	$587.5	$223.1	$379.6	$1,320.6	$1,346.2	$1,350.1	$1,782.3	$1,234.1	$595.3	$675.5	$1,147.6	$2,418.4	$5,434.9
Acquisitions	$177.9	$41.8	$53.9	$55.2	$120.7	$202.4	$641.1	$28.4	$2,660.3	$93.0	$57.0	$2,810.4	$3,479.9
Dispositions	na	na	na	na	na	na	na	na	na	$0.0	$0.0	na	na
Total Expenditures	$857.7	$419.0	$877.4	$1,553.3	$1,687.9	$1,721.1	$2,711.7	$1,395.0	$3,373.9	$1,040.0	$1,389.5	$5,803.4	$9,910.2
Expenditures as % of Total:													
Exploration	10.7%	36.8%	50.6%	11.4%	13.1%	9.8%	10.6%	9.5%	3.5%	26.1%	13.3%	9.9%	10.0%
Development	68.5%	53.3%	43.3%	85.0%	79.8%	78.4%	65.7%	88.5%	17.6%	65.0%	82.6%	41.7%	54.8%
Acquisitions	20.7%	10.0%	6.1%	3.6%	7.2%	11.8%	23.6%	2.0%	78.9%	8.9%	4.1%	48.4%	35.1%
Cashflow (US$million)	$733.5	$420.4	$503.0	$801.3	$911.5	$1,323.7	$1,424.8	$916.6	$573.6	$445.8	$707.0	$1,726.3	$4,067.8
Cashflow (US$/boe)	$38.43	$23.16	$27.36	$28.30	$24.97	$27.41	$25.82	$14.27	$10.37	$10.02	$16.10	$12.01	$15.46
Recycle Ratio	-0.3x	0.5x	2.0x	1.6x	1.8x	3.2x	1.7x	0.1x	0.1x	1.9x	1.4x	0.7x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-$55.26	$41.45	$12.60	$16.71	$12.79	$7.58	$13.41	$112.48	$59.63	$4.95	$11.17	$9.28	$13.14
Acquisition Costs	$39.54	na	$1,615.68	na	$402.48	$155.70	$29.39	$23.69	$171.45	$74.42	$180.00	$164.51	$86.78
All Sources (incl. revisions)	-$109.96	$46.04	$13.42	$17.33	$13.74	$8.53	$15.39	$104.49	$122.76	$5.40	$11.62	$17.08	$18.72
Exploration & Development (excl. revisions)	$23.98	$21.68	$13.45	$17.08	$10.45	$7.77	$14.38	$8.51	$6.59	$12.96	$101.07	$15.39	$12.89
Acquisition Costs	$39.54	na	$1,615.68	na	$402.48	$155.70	$29.39	$23.69	$171.45	$74.42	$180.00	$164.51	$86.78
All Sources (excl. revisions)	$26.11	$24.08	$14.32	$17.71	$11.23	$8.74	$16.36	$8.62	$27.27	$14.00	$102.93	$27.44	$18.38

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

SM Energy Company (SM - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.22	11.39	10.61	10.25	10.74	12.37	12.97	11.27	10.81	11.41	11.10	11.09	11.53
Exploration Expense	3.15	3.43	3.47	1.89	2.47	1.53	2.35	1.88	1.19	1.26	1.26	1.23	1.62
G&A/Other	4.17	4.19	5.80	4.19	3.28	3.10	3.03	2.45	2.29	2.71	2.65	2.53	2.62
F&D Costs (1-Year)	26.11	46.04	13.42	17.33	13.74	8.53	15.39	8.62	27.27	14.00	11.62	17.63	15.38
Return on Capital	12.33	20.29	7.32	7.97	6.87	4.74	9.58	3.93	12.22	9.27	8.43	10.74	8.95
Income Taxes	5.84	(11.13)	5.76	4.17	4.11	2.97	5.73	2.41	7.16	4.78	2.38	4.82	1.32
Breakeven Oil Price	**65.81**	**74.22**	**46.39**	**45.79**	**41.21**	**33.23**	**49.06**	**30.56**	**60.93**	**43.43**	**37.44**	**48.04**	**41.41**
Quality Differential	2.91	4.12	(0.34)	12.66	19.41	18.68	20.33	13.19	10.61	9.73	12.88	8.91	27.16
Required Brent Price	**68.72**	**78.34**	**46.04**	**58.45**	**60.63**	**51.91**	**69.39**	**43.75**	**71.54**	**53.15**	**50.32**	**56.95**	**68.57**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	20.06	18.31	16.88	16.89	17.99	18.70	17.31	14.40	13.84	14.94	14.31	14.32	14.95
Exploration Expense	4.44	5.51	5.53	3.12	4.14	2.32	3.14	2.40	1.52	1.65	1.62	1.59	2.11
G&A/Other	5.88	6.73	9.23	6.90	5.50	4.68	4.04	3.14	2.93	3.55	3.42	3.27	3.39
F&D Costs (1-Year)	40.95	46.04	22.43	21.67	19.62	12.55	19.77	11.32	33.82	24.46	13.73	24.00	20.62
Return on Capital	19.45	21.71	12.20	10.72	10.77	7.30	12.50	5.22	15.02	16.26	9.69	14.31	11.89
Income Taxes	12.78	13.13	7.32	6.15	6.18	4.60	7.48	3.21	8.81	8.37	2.73	6.43	1.75
Breakeven Oil Price	**103.55**	**111.44**	**73.58**	**65.45**	**64.22**	**50.15**	**64.24**	**39.68**	**75.94**	**69.23**	**45.50**	**63.92**	**54.71**
Quality Differential	4.11	6.62	(0.55)	20.87	32.54	28.25	27.14	16.85	13.58	12.73	16.60	14.30	17.38
Required Brent Price	**107.66**	**118.06**	**73.03**	**86.32**	**96.76**	**78.40**	**91.38**	**56.54**	**89.52**	**81.96**	**62.09**	**78.23**	**72.09**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	20.06	18.31	16.88	16.89	17.99	18.70	17.31	14.40	13.84	14.94	14.31	14.32	14.95
Exploration Expense	4.44	5.51	5.53	3.12	4.14	2.32	3.14	2.40	1.52	1.65	1.62	1.59	2.11
G&A/Other	5.88	6.73	9.23	6.90	5.50	4.68	4.04	3.14	2.93	3.55	3.42	3.27	3.39
F&D Costs (1-Year)	31.29	48.18	33.73	32.85	37.60	23.50	26.65	19.78	54.67	14.55	18.52	29.25	26.84
Return on Capital	14.77	22.72	18.36	16.09	20.65	13.73	16.78	9.12	24.08	9.66	12.92	17.54	15.34
Income Taxes	9.71	13.74	11.01	9.23	11.85	8.65	10.05	5.60	14.12	4.98	3.64	7.87	2.26
Breakeven Oil Price	**86.16**	**115.19**	**94.74**	**85.07**	**97.73**	**71.58**	**77.98**	**54.44**	**111.16**	**49.33**	**54.44**	**73.84**	**64.89**
Quality Differential	4.11	6.62	(0.55)	20.87	32.54	28.25	27.14	16.85	13.58	12.73	16.60	14.30	17.38
Required Brent Price	**90.26**	**121.82**	**94.20**	**105.94**	**130.27**	**99.82**	**105.12**	**71.29**	**124.75**	**62.06**	**71.03**	**88.15**	**82.27**

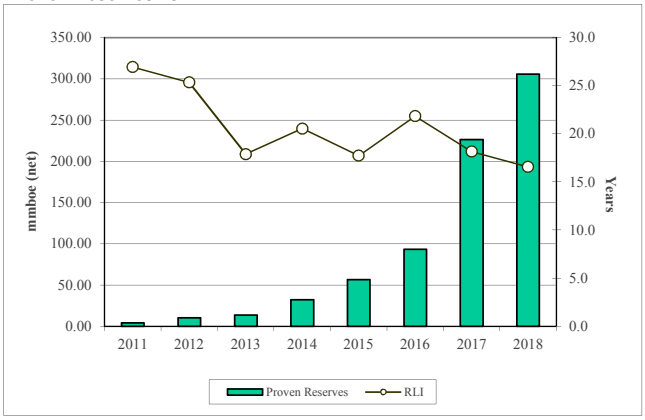
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

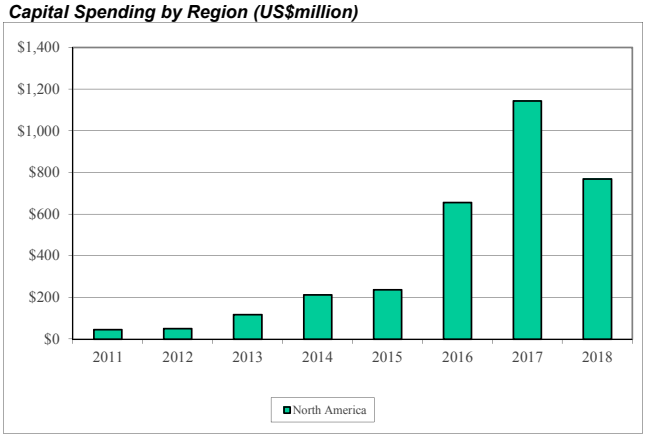
SRC Energy (SRCI - NYSE) US$, net

- Synergy Resources changed its name to SRC Energy in March of 2018.
- The company's results of operations improved to $15.81/boe in 2018 from $8.37/boe in 2017.
- The company reported one-year F&D costs at $7.89/boe compared to $7.76/boe ($8.62/boe ex-revisions) last year. On a realized oil:gas ratio basis, F&D costs were flat at $11.54/boe from $11.68/boe, while the PD reserve costs increased to $18.74/boe from $18.08/boe last year.
- SRC Energy's 2018 costs imply a required Brent breakeven oil price of $58.97/boe on total proved reserves and $74.30/boe on PD reserves.
- The company reported ROCE of 12.0% in 2018.

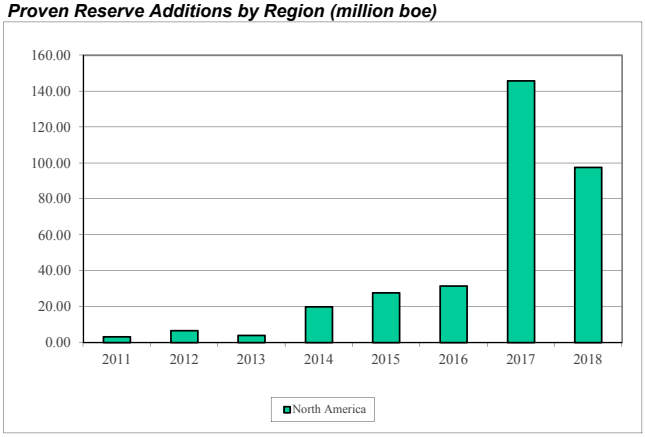
Proven Reserves vs RLI



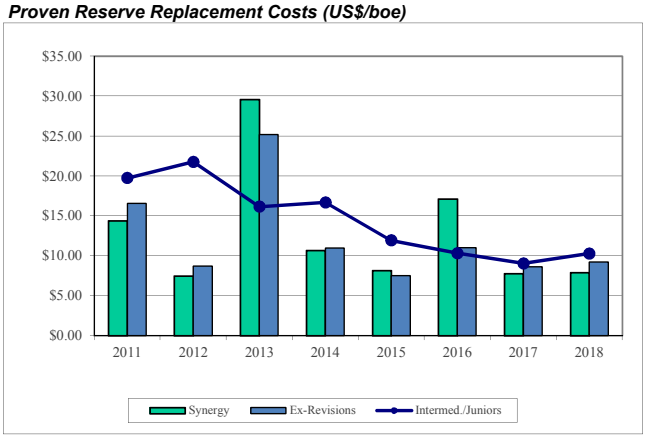
Capital Spending by Region (US$million)



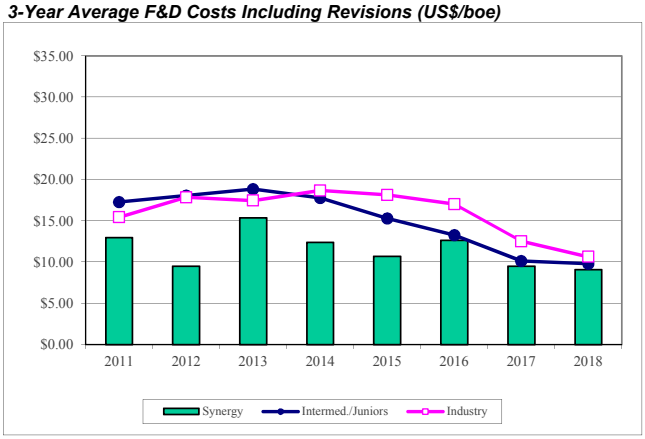
Proven Reserve Additions by Region (million boe)



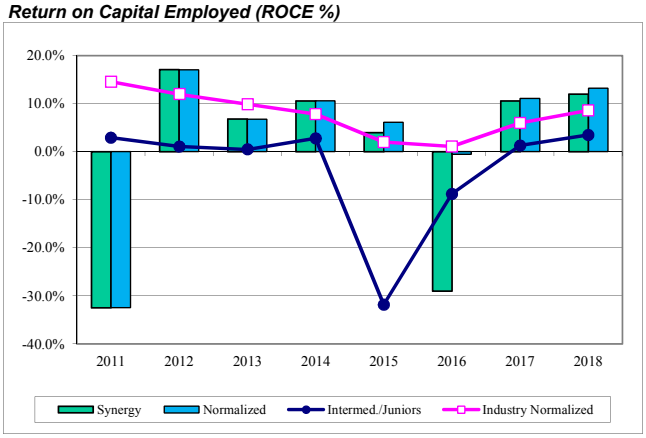
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

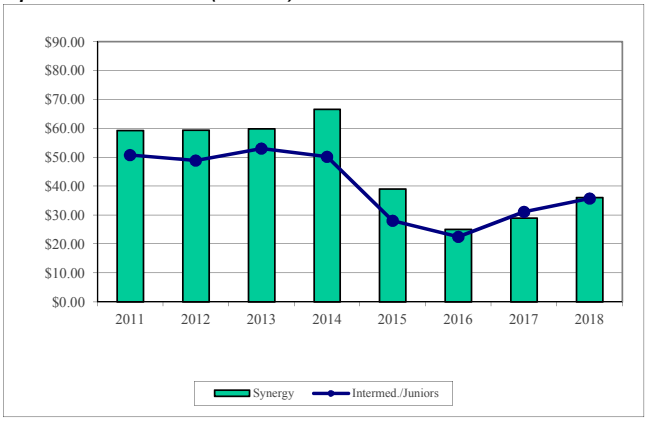
See pages F1 to F4 for analyst coverage.

SRC Energy (SRCI - NYSE)

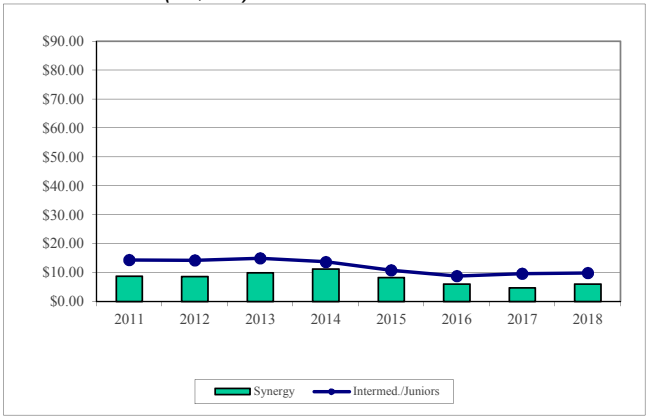
US$/boe, net

North America

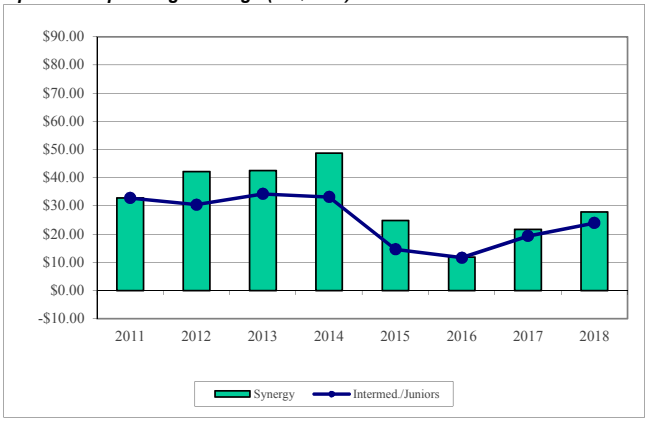
Upstream Net Revenue (US$/boe)



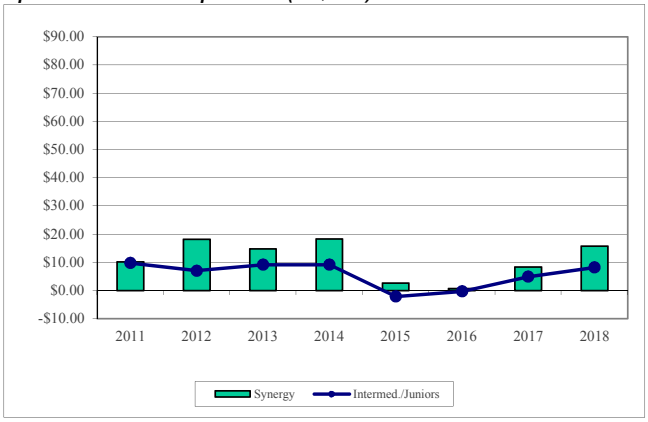
Production Costs (US$/boe)



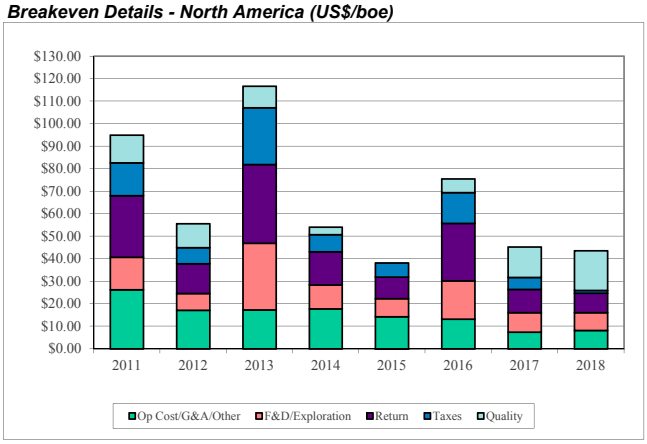
Upstream Operating Earnings (US$/boe)



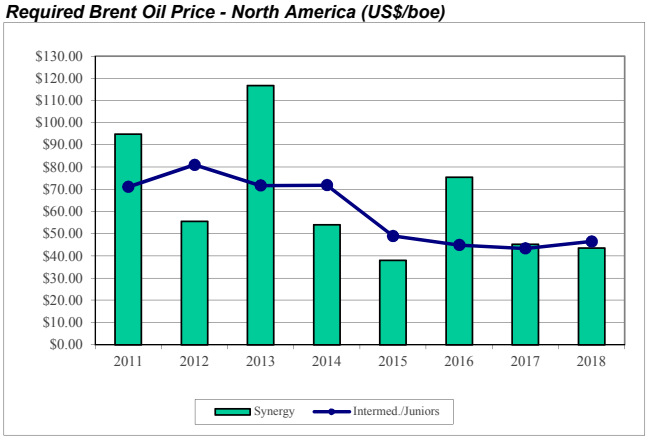
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

SRC Energy (SRCI - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	0	2	10	25	46	104	125	107	363	646
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-		
Other	-	-	-	0	-	-	-	-	-		-
Total Revenue and Other Income	-	0	2	10	25	46	104	125	107	363	646
Crude Oil and Product Purchases		-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	0	0	1	4	8	18	26	26	59	112
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	1	2	3	4	6	10	19	31	33	39
Depreciation, Depletion and Amortization	-	0	1	3	6	13	33	66	47	112	180
Interest, net	-	-	1	4	(0)	0	(0)	0	(0)	11	(0)
Other	-	12	10	10	-	3	(0)	(16)	224	4	17
Earnings Before Income Tax	-	(12)	(11)	(12)	12	16	44	30	(219)	142	298
Current Income Taxes	-	-	-	-	-	-	0	(0)	(0)	(0)	-
Future Income Taxes	-	-	-	-	(0)	7	15	12		-	38
Total Income Taxes	-	-	-	-	(0)	7	15	12	(0)	(0)	38
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	(12)	(11)	(12)	12	10	29	18	(219)	142	260
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(12)	(11)	(12)	12	10	29	18	(219)	142	260
Preferred Stock Dividends	-	-	-							-	-
Net Earnings to Common Shareholders	-	(12)	(11)	(12)	12	10	29	18	(219)	142	260

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	(12)	(11)	(12)	12	10	29	18	(219)	142	260
Charges and Credits Not Impacting Cash	-	1	1	3	6	20	48	94	262	112	220
Other	-	10	10	15	0	4	1	3	22	24	1
Cash Flow From Operations	-	(1)	(0)	6	18	34	77	115	65	278	482
Change in Working Capital / Other	-	1	(2)	2	3	(2)	(2)	10	(17)	13	40
Net Cash From Operating Activities	-	(0)	(2)	8	21	32	75	125	49	291	521
Upstream Spending	-	(3)	(9)	(30)	(47)	(80)	(156)	(276)	(127)	(468)	(564)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	-
Acquisitions, net	-	(0)	-	8	0	-	1	6	(491)	(572)	(151)
Other	-	(0)	-	-	-	(60)	60	-	(18)	-	-
Net Cash From Investing Activities	-	(3)	(9)	(22)	(47)	(140)	(95)	(270)	(636)	(1,040)	(715)
Net Change in Debt	-	1	17	-	(2)	34	-	41	2	449	192
Net Change in Common Stock	-	3	-	18	40	76	-	199	565	312	(0)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	(0)	(1)	(1)	(3)	(1)	35	4	(28)	0	3
Net Cash From Financing Activities	-	4	15	17	35	109	35	244	540	761	195
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	1	4	3	10	0	15	99	(48)	12	1
Cash and Equivalents, Beginning of Year	-	2	3	7	9	19	19	35	66	37	49
Cash and Equivalents, End of Year	-	3	7	9	19	19	35	134	19	49	50

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

SRC Energy (SRCI - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	3	10	15	26	92	68	167	54	160	232
Net Property, Plant and Equipment	-	2	13	49	93	198	379	535	909	1,877	2,519
Other Assets	-	0	2	0	2	1	1	45	61	43	4
Total Assets	-	5	25	64	121	291	449	746	1,024	2,080	2,755
Total Current Liabilities	-	2	4	14	16	41	104	74	92	202	354
Long-term Debt	-	-	12	-	3	37	37	78	76	538	735
Deferred Income Taxes	-	-	-	-	-	7	21	10	-	-	38
Other Liabilities and Deferred Credits	-	-	10	1	1	3	5	12	16	31	42
Total Liabilities	-	2	26	15	20	88	167	174	183	771	1,168
Minority Interests										-	-
Common Shares	-	0	0	0	0	0	0	0	0	0	0
Contributed Surplus (Paid-in Capital)	-	16	22	84	124	216	266	539	1,149	1,474	1,492
Preferred Stock	-	-	-	-	-	-	-	-		-	-
Retained Earnings	-	(13)	(23)	(35)	(23)	(13)	16	34	(308)	(166)	94
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	-	3	(1)	49	101	203	281	572	841	1,308	1,586
Total Liabilities and Shareholders' Equity	-	5	25	64	121	291	449	746	1,024	2,080	2,755
Return on Capital Employed (ROCE)	**0.0% nm**	**nm**		**-32.5%**	**17.1%**	**6.8%**	**10.6%**	**4.0%**	**-29.0%**	**10.6%**	**12.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	$38.25	$48.39	$59.24	$59.37	$59.83	$66.56	$39.09	$25.09	$29.05	$36.05	$32.23	$34.13
Production Costs	-	$4.70	$7.25	$8.72	$8.68	$9.91	$11.28	$8.25	$6.01	$4.73	$6.08	$5.59	$6.03
Exploration	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	$39.54	$15.72	$17.20	$14.29	$17.26	$21.05	$20.62	$10.93	$9.00	$9.74	$9.62	$10.95
G&A/Other	-	$288.20	$37.85	$17.59	$8.46	$7.36	$6.48	$5.95	$7.15	$2.64	$2.09	$2.90	$3.28
Pre-tax Results of Operations	-	-$294.20	-$12.44	$15.73	$27.95	$25.30	$27.76	$4.26	$0.99	$12.68	$18.12	$14.11	$13.86
Income Taxes	-	$0.00	$0.00	$5.50	$9.78	$10.57	$9.50	$1.67	$0.35	$4.31	$2.31	$2.78	$2.96
Results of Operations	-	-$294.20	-$12.44	$10.22	$18.17	$14.73	$18.26	$2.59	$0.65	$8.37	$15.81	$11.33	$10.91

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	$38.25	$48.39	$59.24	$59.37	$59.83	$66.56	$39.09	$25.09	$29.05	$36.05	$32.23	$34.13
Production Costs	-	$4.70	$7.25	$8.72	$8.68	$9.91	$11.28	$8.25	$6.01	$4.73	$6.08	$5.59	$6.03
Exploration	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	$39.54	$15.72	$17.20	$14.29	$17.26	$21.05	$20.62	$10.93	$9.00	$9.74	$9.62	$10.95
G&A/Other	-	$288.20	$37.85	$17.59	$8.46	$7.36	$6.48	$5.95	$7.15	$2.64	$2.09	$2.90	$3.28
Pre-tax Results of Operations	-	-$294.20	-$12.44	$15.73	$27.95	$25.30	$27.76	$4.26	$0.99	$12.68	$18.12	$14.11	$13.86
Income Taxes	-	$0.00	$0.00	$5.50	$9.78	$10.57	$9.50	$1.67	$0.35	$4.31	$2.31	$2.78	$2.96
Results of Operations	-	-$294.20	-$12.44	$10.22	$18.17	$14.73	$18.26	$2.59	$0.65	$8.37	$15.81	$11.33	$10.91

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
International													
Net Revenue	na	na	na	na	na	na	na	na	na	na	na	na	na
Production Costs	na	na	na	na	na	na	na	na	na	na	na	na	na
Exploration	na	na	na	na	na	na	na	na	na	na	na	na	na
DD&A	na	na	na	na	na	na	na	na	na	na	na	na	na
G&A/Other	na	na	na	na	na	na	na	na	na	na	na	na	na
Pre-tax Results of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na
Income Taxes	na	na	na	na	na	na	na	na	na	na	na	na	na
Results of Operations	na	na	na	na	na	na	na	na	na	na	na	na	na

Source: BMO Capital Markets, Company Reports

SRC Energy (SRCI - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	0.0	0.4	1.2	3.0	5.8	10.3	20.1	33.1	68.0	101.7	67.6	46.6
Liquids Production (b/d)	-	5	58	246	646	1,154	2,579	5,397	6,184	22,855	33,592	20,877	14,121
Total Production (boe/d)	-	7	122	452	1,152	2,117	4,290	8,751	11,702	34,195	50,543	32,147	21,896
% Gas Production	-	30%	53%	46%	44%	45%	40%	38%	47%	33%	34%	35%	36%
% Oil Production	-	70%	47%	54%	56%	55%	60%	62%	53%	67%	66%	65%	64%
Proven Reserves:													
Gas Reserves (bcf)	-	0.0	4.5	14.3	33.4	40.7	95.2	174.0	331.9	559.9	771.9	554.6	386.6
Oil Reserves (mmbbls)	-	0.0	0.7	2.1	5.1	7.0	16.3	27.7	38.0	133.3	177.1	116.2	78.5
Total Proven Reserves (mmboe)	-	0.0	1.4	4.4	10.7	13.8	32.2	56.7	93.4	226.7	305.7	208.6	142.9
% Gas Reserves	-	40%	52%	53%	52%	49%	49%	51%	59%	41%	42%	44%	45%
% Oil Reserves	-	60%	48%	47%	48%	51%	51%	49%	41%	59%	58%	56%	55%
Proven Reserve Life Index	-	4.4	31.9	26.9	25.3	17.9	20.6	17.7	21.9	18.2	16.6	18.9	19.0
Proven Reserve Additions:													
Gas Additions (bcf)	-	0.0	4.6	10.2	20.3	9.4	58.2	86.1	105.3	252.8	249.1	607.2	751.6
Oil Additions (mmbbls)	-	0.0	0.7	1.5	3.3	2.4	10.2	13.3	13.9	103.7	56.0	173.6	197.1
Total Additions (mmboe)	-	0.0	1.5	3.2	6.6	3.9	19.9	27.7	31.5	145.8	97.5	274.8	322.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	0.0	1.4	0.4	5.5	2.4	17.4	23.7	3.6	87.5	60.9	152.1	193.1
Acquisitions	-	0.0	0.0	2.4	0.2	2.2	2.0	7.9	56.0	45.1	22.4	123.5	133.4
Dispositions	-	0.0	-	-	-	-	(0.0)	(1.4)	(6.9)	(1.4)	-	(8.4)	(9.8)
Revisions of Estimates	-	0.0	0.0	0.4	1.0	(0.7)	0.6	(2.5)	(21.2)	14.6	14.2	7.6	5.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	100.0%	99.4%	12.0%	83.0%	60.8%	87.1%	85.6%	11.5%	60.0%	62.4%	55.3%	59.9%
Acquisitions	-	0.0%	0.0%	74.6%	2.3%	56.5%	10.1%	28.4%	177.9%	30.9%	23.0%	45.0%	41.4%
Dispositions	-	0.0%	0.0%	0.0%	0.0%	0.0%	-0.2%	-4.9%	-22.1%	-1.0%	0.0%	-3.0%	-3.0%
Revisions of Estimates	-	0.0%	0.6%	13.4%	14.8%	-17.3%	3.0%	-9.1%	-67.4%	10.0%	14.6%	2.8%	1.8%
Additions as % of Production:													
Gas	-	685.5%	3256.4%	2269.4%	1829.8%	443.7%	1554.2%	1172.7%	871.6%	1018.0%	671.0%	820.1%	882.8%
Oil	-	471.7%	3279.6%	1649.2%	1379.7%	565.6%	1085.7%	677.1%	616.3%	1242.6%	456.9%	759.3%	765.0%
Total	-	535.2%	3267.3%	1931.5%	1577.5%	510.2%	1272.6%	867.0%	736.7%	1168.1%	528.7%	780.6%	806.8%
Additions as % of Reserves:													
Gas	-	117.1%	102.6%	71.7%	60.7%	23.0%	61.2%	49.5%	31.7%	45.2%	32.3%	109.5%	194.4%
Oil	-	126.9%	102.2%	71.6%	63.9%	33.8%	62.6%	48.2%	36.6%	77.7%	31.6%	149.4%	251.1%
Total	-	123.0%	102.4%	71.7%	62.2%	28.5%	61.9%	48.9%	33.7%	64.3%	31.9%	131.7%	225.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	-	$0.0	$0.0	$0.0	$0.0	$0.0	$43.1	$146.9	$43.2	$0.0	$0.0	$43.2	$233.1
Development	-	$2.4	$10.4	$15.3	$39.7	$61.1	$120.6	$5.7	$95.3	$465.3	$586.7	$1,147.3	$1,273.5
Acquisitions	-	$0.4	$1.5	$30.4	$9.6	$55.4	$48.8	$84.1	$517.9	$677.6	$182.7	$1,378.2	$1,511.1
Dispositions	-	na	na	na	na	na	na	na	na	$0.0	$0.0	na	na
Total Expenditures	-	$2.8	$11.9	$45.8	$49.3	$116.6	$212.4	$236.7	$656.4	$1,142.9	$769.4	$2,568.7	$3,017.8
Expenditures as % of Total:													
Exploration	-	0.0%	0.0%	0.0%	0.0%	0.0%	20.3%	62.1%	6.6%	0.0%	0.0%	1.7%	7.7%
Development	-	85.1%	87.1%	33.5%	80.5%	52.4%	56.7%	2.4%	14.5%	40.7%	76.3%	44.7%	42.2%
Acquisitions	-	14.9%	12.9%	66.5%	19.5%	47.6%	23.0%	35.5%	78.9%	59.3%	23.7%	53.7%	50.1%
Cashflow (US$million)	-	-$1.0	$0.0	$6.3	$18.3	$33.8	$77.3	$114.6	$65.3	$278.5	$481.6	$825.4	$1,017.4
Cashflow (US$/boe)	-	-$411.49	-$1.03	$38.45	$43.46	$43.75	$49.39	$35.89	$15.29	$22.31	$26.11	$23.45	$25.46
Recycle Ratio	-	-1.9x	-0.1x	2.7x	5.8x	1.5x	4.6x	4.4x	0.9x	2.9x	3.3x	2.6x	2.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	-	$182.83	$7.11	$18.96	$6.13	$35.67	$9.12	$7.20	-$7.87	$4.56	$7.81	$7.46	$7.58
Acquisition Costs	-	na	na	$12.80	$63.54	$24.89	$24.15	$10.70	$9.25	$15.02	$8.14	$11.16	$11.33
All Sources (incl. revisions)	-	$214.75	$8.16	$14.37	$7.44	$29.58	$10.64	$8.15	$17.09	$7.76	$7.89	$9.07	$9.09
Exploration & Development (excl. revisions)	-	$182.83	$7.15	$39.96	$7.22	$25.52	$9.43	$6.44	$38.17	$5.32	$9.63	$7.83	$7.80
Acquisition Costs	-	na	na	$12.80	$63.54	$24.89	$24.15	$10.70	$9.25	$15.02	$8.14	$11.16	$11.33
All Sources (excl. revisions)	-	$214.75	$8.21	$16.58	$8.73	$25.22	$10.96	$7.50	$11.01	$8.62	$9.23	$9.32	$9.24

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

SRC Energy (SRCI - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	4.70	7.25	8.72	8.68	9.91	11.28	8.25	6.01	4.73	6.08	5.59	6.03
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	288.20	37.85	17.59	8.46	7.36	6.48	5.95	7.15	2.64	2.09	2.90	3.28
F&D Costs (1-Year)	-	214.75	8.16	14.37	7.44	29.58	10.64	8.15	17.09	8.62	7.89	11.20	10.48
Return on Capital	-	60.82	18.61	27.29	13.19	35.09	14.66	9.57	25.47	10.38	8.58	14.02	13.24
Income Taxes	-	32.75	10.02	14.69	7.10	25.16	7.63	6.17	13.71	5.35	1.25	5.25	5.96
Breakeven Oil Price	**-**	**601.22**	**81.90**	**82.66**	**44.87**	**107.10**	**50.68**	**38.08**	**69.44**	**31.72**	**25.90**	**38.96**	**38.99**
Quality Differential	-	13.20	3.48	12.20	10.69	9.64	3.38	(0.01)	5.98	13.59	17.66	10.94	14.33
Required Brent Price	**-**	**614.42**	**85.38**	**94.86**	**55.55**	**116.74**	**54.06**	**38.07**	**75.42**	**45.30**	**43.56**	**49.90**	**53.32**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	5.60	10.25	12.23	12.80	14.23	15.25	10.71	8.25	6.01	8.11	7.36	7.93
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	343.50	53.49	24.67	12.48	10.58	8.75	7.72	9.81	3.36	2.79	3.81	4.32
F&D Costs (1-Year)	-	270.54	11.51	21.67	11.87	40.20	15.59	11.83	25.25	11.68	11.54	16.16	15.18
Return on Capital	-	71.45	26.20	38.05	18.91	45.76	19.62	12.30	33.60	13.00	11.34	18.44	17.38
Income Taxes	-	38.47	14.11	20.49	10.18	32.81	10.21	7.93	18.09	6.70	1.66	4.53	4.71
Breakeven Oil Price	**-**	**729.57**	**115.56**	**117.11**	**66.24**	**143.59**	**69.41**	**50.49**	**95.01**	**40.75**	**35.44**	**50.30**	**49.52**
Quality Differential	-	15.74	4.91	17.11	15.76	13.85	4.58	(0.01)	8.21	17.28	23.53	16.34	10.72
Required Brent Price	**-**	**745.31**	**120.47**	**134.22**	**82.00**	**157.44**	**73.99**	**50.48**	**103.22**	**58.04**	**58.97**	**66.64**	**60.23**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	5.60	10.25	12.23	12.80	14.23	15.25	10.71	8.25	6.01	8.11	7.36	7.93
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	343.50	53.49	24.67	12.48	10.58	8.75	7.72	9.81	3.36	2.79	3.81	4.32
F&D Costs (1-Year)	-	270.54	20.05	64.95	17.31	41.01	54.96	38.36	102.81	18.08	18.74	46.54	46.59
Return on Capital	-	71.45	50.27	113.40	26.56	46.67	69.22	39.97	134.41	20.16	18.44	52.96	53.17
Income Taxes	-	38.47	27.07	61.06	14.30	33.47	36.02	25.75	72.38	10.38	2.69	13.00	14.41
Breakeven Oil Price	**-**	**729.57**	**161.13**	**276.31**	**83.44**	**145.96**	**184.21**	**122.52**	**327.66**	**57.99**	**50.77**	**123.67**	**126.42**
Quality Differential	-	15.74	4.91	17.11	15.76	13.85	4.58	(0.01)	8.21	17.28	23.53	16.34	10.72
Required Brent Price	**-**	**745.31**	**166.04**	**293.42**	**99.21**	**159.81**	**188.78**	**122.50**	**335.86**	**75.28**	**74.30**	**140.01**	**137.14**

Source: BMO Capital Markets, Company Reports

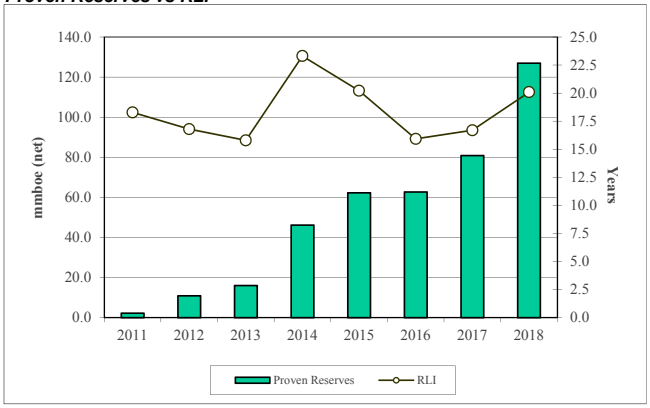
See pages F1 to F4 for analyst coverage.

Storm Resources (SRX - TSX)

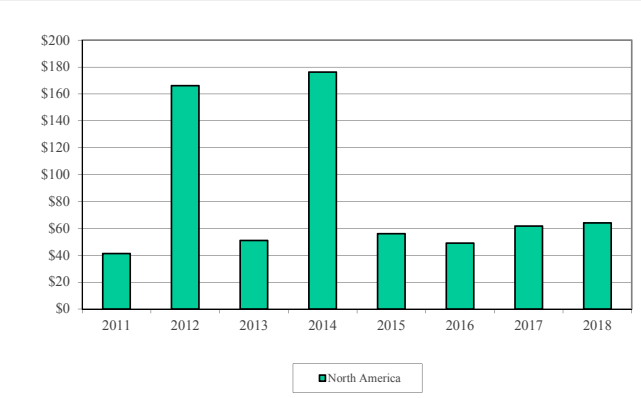
US$, net

- Storm reported results of operations of $5.35/boe in 2018 versus $2.80/boe last year.
- One-year F&D costs came in lower at $1.27/boe compared to $2.83/boe in 2017. Excluding revisions, F&D costs were $1.75/boe. On a realized oil:gas price ratio basis, F&D costs fell to $3.29/boe from $9.97/boe, while costs for PD reserves also improved to $8.66/boe in 2018 from $11.31/boe.
- Storm's 2018 operations imply a required Brent breakeven oil price of $33.33/boe on a realized ratio basis and total proved reserves, while PD costs infer a breakeven oil price of $48.05/boe.
- The company reported ROCE of 9.1% in 2018.

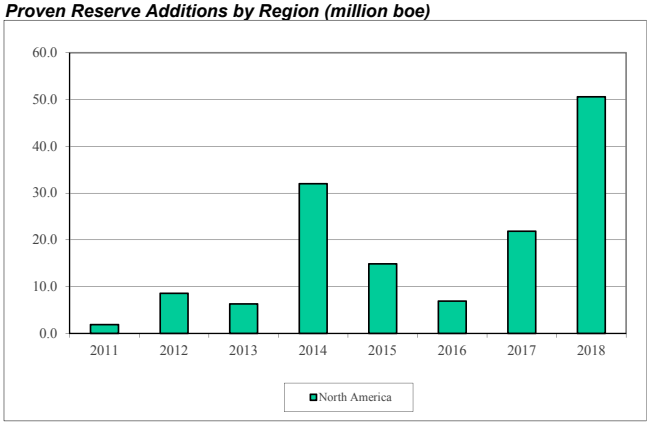
Proven Reserves vs RLI



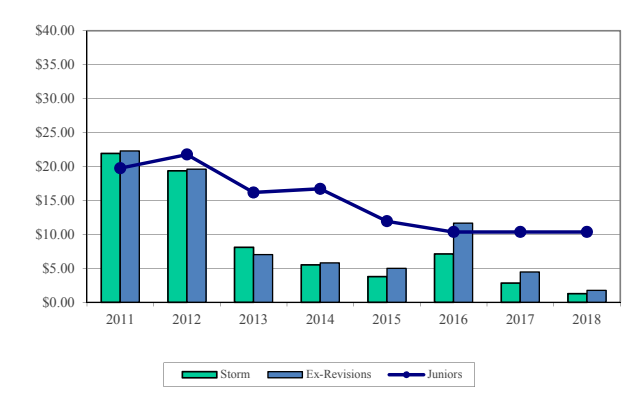
Capital Spending by Region (US$million)



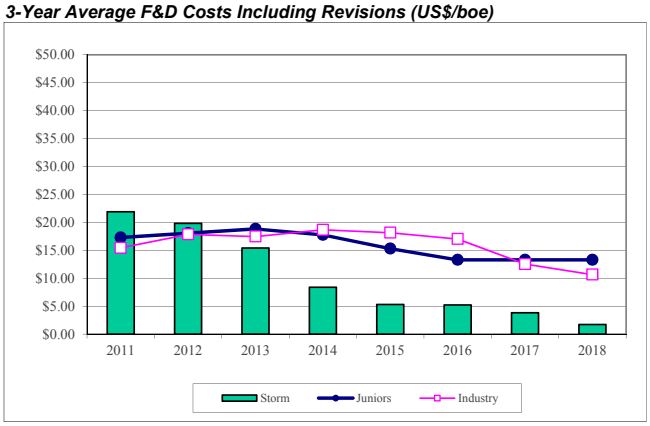
Proven Reserve Additions by Region (million boe)



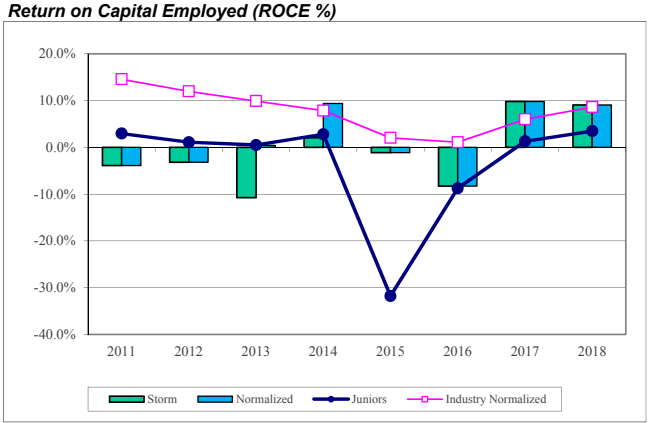
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

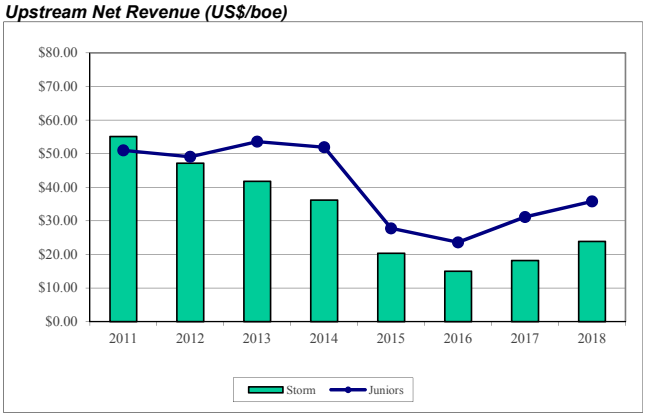
See pages F1 to F4 for analyst coverage.

Storm Resources (SRX - TSX)

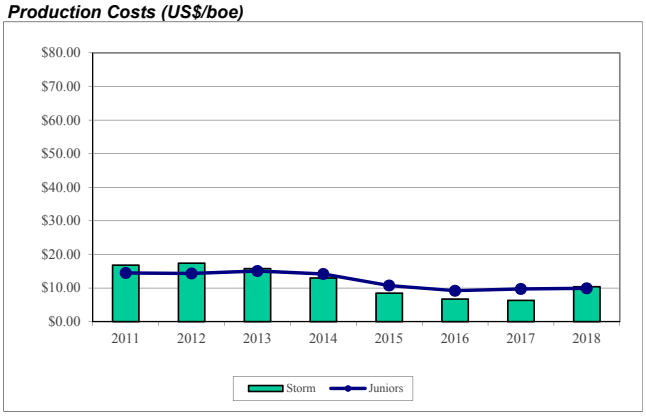
US$/boe, net

North America

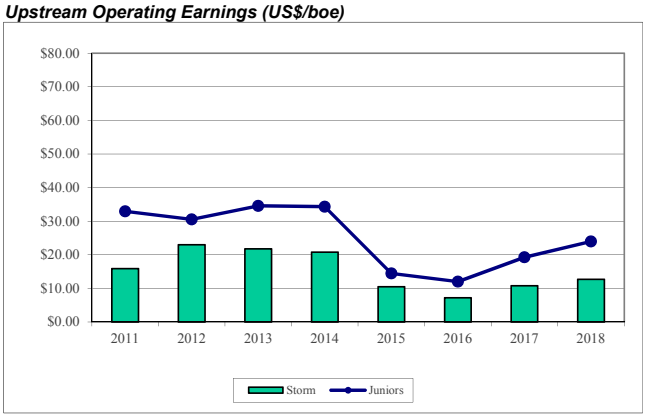
Upstream Net Revenue (US$/boe)



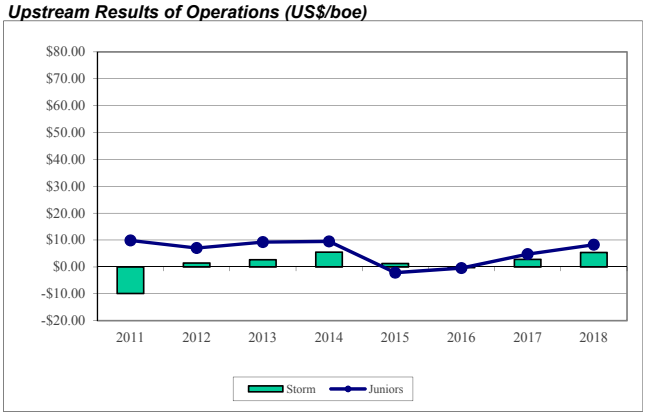
Production Costs (US$/boe)



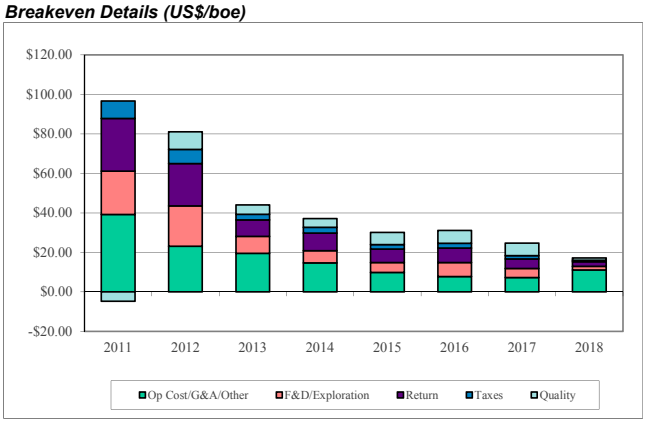
Upstream Operating Earnings (US$/boe)



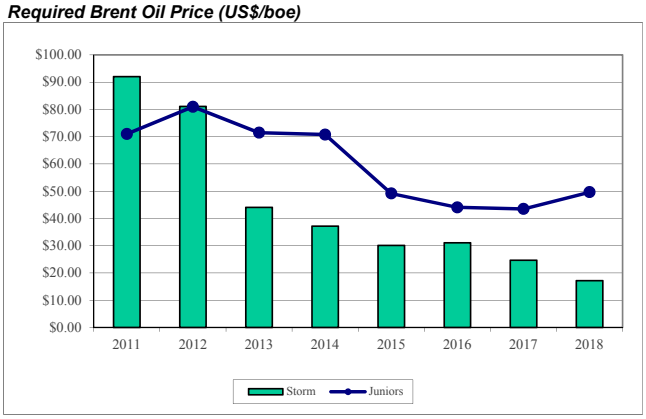
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Storm Resources (SRX - TSX)

Consolidated Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	7	29	42	75	51	55	90	168
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	2	(1)	10	8	(19)	17	(22)
Total Revenue and Other Income	-	-	-	7	31	41	85	59	36	107	146
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	2	11	16	26	26	26	31	66
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	1	0	1	0	0	0	0
General and Administrative	-	-	-	3	4	4	3	4	4	5	5
Depreciation, Depletion and Amortization	-	-	-	3	14	18	27	27	30	34	35
Interest, net	-	-	-	(0)	1	1	1	2	2	3	3
Other	-	-	-	2	6	26	21	5	2	3	3
Earnings Before Income Tax	-	-	-	(4)	(7)	(25)	4	(5)	(29)	31	34
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	-	-	-	-	-	-	-	-	-	-	3
Total Income Taxes	-	-	-	-	-	-	-	-	-	-	3
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	(4)	(7)	(25)	4	(5)	(29)	31	31
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	(4)	(7)	(25)	4	(5)	(29)	31	31
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	(4)	(7)	(25)	4	(5)	(29)	31	31

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	(4)	(7)	(25)	4	(5)	(29)	31	31
Charges and Credits Not Impacting Cash	-	-	-	4	14	44	28	28	30	35	39
Other	-	-	-	2	5	2	8	8	25	(16)	7
Cash Flow From Operations	-	-	-	2	13	21	41	31	26	49	77
Change in Working Capital / Other	-	-	-	(2)	(2)	2	3	(3)	(0)	(0)	(6)
Net Cash From Operating Activities	-	-	-	0	11	24	44	28	26	49	71
Upstream Spending	-	-	-	(41)	(32)	(70)	(97)	(74)	(50)	(63)	(65)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	-
Acquisitions, net	-	-	-	-	0	19	(27)	18	0	-	-
Other	-	-	-	1	3	(0)	13	(7)	5	(4)	5
Net Cash From Investing Activities	-	-	-	(40)	(29)	(51)	(111)	(63)	(44)	(67)	(60)
Net Change in Debt	-	-	-	16	(13)	(30)	32	9	16	17	(11)
Net Issuance of Trust Units	-	-	-	-	23	58	35	27	2	1	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Distributions Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Net Cash From Financing Activities	-	-	-	16	10	28	67	36	18	18	(11)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	(24)	(7)	(0)	-	(0)	-	0	(0)
Cash and Equivalents, Beginning of Year	-	-	-	31	7	-	0	(0)	(0)	(0)	(0)
Cash and Equivalents, End of Year	-	-	-	8	-	(0)	0	(0)	(0)	0	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Storm Resources (SRX - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	12	10	10	21	14	11	17	25
Property, Plant and Equipment:											
Exploration and Production	-	-	-	54	250	290	458	399	436		
Midstream/Other	-	-	-	-	-	-	-	-	-		
Less: Accumulated DD&A and other	-	-	-	3	15	57	100	68	95		
Net Property, Plant and Equipment	-	-	-	50	235	233	358	331	341	380	411
Other Assets	-	-	-	48	4	-	(0)	-	-	0	-
Total Assets	-	-	-	110	249	243	379	345	352	398	436
Total Current Liabilities	-	-	-	15	13	13	25	12	35	19	29
Long-term Debt	-	-	-	13	42	10	42	45	60	78	67
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	-	3
Other Liabilities and Deferred Credits	-	-	-	3	11	8	21	13	16	19	22
Total Liabilities	-	-	-	30	65	32	88	69	110	116	122
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Unitholders' Capital	-	-	-	88	193	246	318	302	294	302	302
Contributed Surplus (Paid-in Capital)	-	-	-	1	2	3	3	5	7	9	12
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	-	-	-	(5)	(12)	(37)	(30)	(31)	(59)	(30)	1
Accumulated Cash Distributions / Other	-	-	-	(4)	-	-	0	-	-	-	-
Total Shareholders' Equity	-	-	-	80	184	212	291	276	242	281	315
Total Liabilities and Shareholders' Equity	-	-	-	110	249	243	379	345	352	398	436
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**-3.9%**	**-3.2%**	**-10.7%**	**2.1%**	**-1.1%**	**-8.3%**	**9.8%**	**9.1%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue				$55.11	$47.16	$41.77	$36.17	$20.35	$14.97	$18.15	$23.87	$19.72	$21.43
Production Costs				$16.77	$17.40	$15.75	$12.97	$8.44	$6.72	$6.33	$10.38	$8.13	$8.65
Exploration				$0.00	$1.03	$0.46	$0.65	$0.04	$0.01	$0.06	$0.03	$0.04	$0.10
DD&A				$29.12	$21.07	$18.18	$13.48	$8.80	$7.59	$7.04	$5.57	$6.57	$7.59
G&A / Other				$22.43	$5.74	$3.80	$1.74	$1.40	$1.03	$0.98	$0.75	$0.89	$1.05
Pre-tax Results of Operations				-$13.22	$1.91	$3.58	$7.32	$1.67	-$0.37	$3.74	$7.14	$4.09	$4.04
Income Taxes				-$3.31	$0.48	$0.89	$1.83	$0.42	-$0.09	$0.93	$1.78	$1.02	$1.01
Results of Operations				-$9.92	$1.43	$2.68	$5.49	$1.25	-$0.27	$2.80	$5.35	$3.07	$3.03

Source: BMO Capital Markets, Company Reports

Storm Resources (SRX - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)				1.4	6.5	12.0	25.3	41.4	53.2	65.0	85.6	68.0	54.1
Liquids Production (b/d)				99	682	777	1,210	1,535	1,904	2,431	3,038	2,458	2,024
Total Production (boe/d)				326	1,766	2,771	5,429	8,436	10,777	13,264	17,313	13,784	11,044
% Gas Production				70%	61%	72%	78%	82%	82%	82%	82%	82%	82%
% Oil Production				30%	39%	28%	22%	18%	18%	18%	18%	18%	18%
Proven Reserves:													
Closing Gas Reserves (bcf)				9.2	45.6	74.7	226.3	313.6	316.6	402.5	621.7	447.0	376.2
Closing Oil Reserves (mmbbls)				0.6	3.2	3.5	8.5	10.0	9.9	13.7	23.4	15.7	13.1
Closing Total Proven Reserves (mmboe)				2.2	10.8	16.0	46.2	62.3	62.7	80.8	127.0	90.2	75.8
% Gas Reserves				71%	70%	78%	82%	84%	84%	83%	82%	83%	83%
% Oil Reserves				29%	30%	22%	18%	16%	16%	17%	18%	17%	17%
Proven Reserve Life Index				18.4	16.9	15.9	23.4	20.2	15.9	16.7	20.1	17.6	19.3
Proven Reserve Additions:													
Gas Additions (bcf)				7.7	34.1	34.4	160.1	77.1	37.3	103.0	239.6	379.9	617.1
Oil Additions (mmbbls)				0.6	2.9	0.6	5.3	2.0	0.7	4.7	10.7	16.0	23.4
Total Additions (mmboe)				1.9	8.6	6.3	32.0	14.9	6.9	21.8	50.6	79.3	126.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions				1.4	3.2	7.9	30.0	12.7	4.2	13.8	36.7	54.7	97.4
Net Acquisitions				0.5	5.3	(0.7)	0.4	(1.5)	-	-	-	-	(1.0)
Revisions of Estimates				0.0	0.1	-1.0	1.6	3.7	2.7	8.0	13.9	24.6	29.9
Components as % of Total Additions:													
Extensions, Discoveries and Additions				72.5%	37.1%	126.2%	93.7%	85.3%	60.9%	63.3%	72.6%	69.0%	77.2%
Net Acquisitions				25.9%	61.7%	-11.0%	1.4%	-9.9%	0.0%	0.0%	0.0%	0.0%	-0.8%
Revisions of Estimates				1.6%	1.2%	-15.2%	5.0%	24.6%	39.1%	36.7%	27.4%	31.0%	23.7%
Additions as % of Production:													
Gas				1549.9%	1436.8%	787.2%	1732.8%	510.0%	191.9%	434.3%	766.3%	510.5%	624.8%
Oil				1654.8%	1161.8%	197.9%	1208.1%	359.4%	98.9%	525.6%	960.8%	594.7%	632.4%
Total				1581.6%	1330.7%	621.9%	1615.8%	482.6%	175.5%	451.0%	800.4%	525.5%	626.1%
Additions as % of Reserves:													
Gas				83.7%	74.8%	46.0%	70.7%	24.6%	11.8%	25.6%	38.5%	85.0%	164.0%
Oil				93.3%	89.5%	16.0%	63.1%	20.2%	6.9%	33.9%	45.6%	102.2%	178.4%
Total				86.5%	79.2%	39.4%	69.3%	23.9%	11.0%	27.0%	39.8%	88.0%	166.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic				$4.8	$2.1	$15.0	$1.6	$0.7	$1.1	$1.4	$2.9	$5.4	$7.7
Exploration & Development				$20.8	$24.8	$50.4	$95.0	$70.3	$48.4	$60.3	$61.1	$169.9	$335.1
Net Acquisitions				$15.6	$139.3	-$14.5	$79.7	-$15.0	-$0.5	$0.0	$0.0	-$0.5	$64.2
Total Expenditures				$41.3	$166.2	$50.9	$176.2	$56.0	$49.1	$61.7	$64.0	$174.8	$407.0
Expenditures as % of Total:													
Land & Seismic				11.6%	1.3%	29.5%	0.9%	1.3%	2.2%	2.3%	4.5%	3.1%	1.9%
Exploration & Development				50.5%	14.9%	99.0%	53.9%	125.5%	98.7%	97.7%	95.5%	97.2%	82.3%
Net Acquisitions				37.8%	83.8%	-28.5%	45.2%	-26.8%	-0.9%	0.0%	0.0%	-0.3%	15.8%
Cashflow (US$million)				1.9	13.4	21.3	41.1	30.6	26.0	48.4	75.6	150.0	221.7
Cashflow (US$/boe)				$15.92	$20.78	$21.07	$20.76	$9.93	$6.60	$10.00	$11.97	$9.94	$11.00
Recycle Ratio				0.7x	1.1x	2.6x	3.8x	2.6x	0.9x	3.5x	9.5x	4.5x	3.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)				$18.38	$8.18	$9.38	$3.06	$4.35	$7.17	$2.83	$1.27	$2.21	$2.69
Net Acquisition Costs				$32.06	$26.32	$21.04	$184.13	$10.18	na	na	na	na	-$61.57
All Sources (incl. revisions)				$21.92	$19.37	$8.10	$5.50	$3.77	$7.11	$2.83	$1.27	$2.20	$3.23
Exploration & Development (excl. revisions)				$18.79	$8.45	$8.25	$3.22	$5.60	$11.77	$4.47	$1.75	$3.20	$3.52
Net Acquisition Costs				$32.06	$26.32	$21.04	$184.13	$10.18	na	na	na	na	-$61.57
All Sources (excl. revisions)				$22.28	$19.61	nm	nm	$5.00	$11.67	$4.47	$1.75	$3.19	$4.22

Source: BMO Capital Markets, Company Reports

Storm Resources (SRX - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	16.77	17.40	15.75	12.97	8.44	6.72	6.33	10.38	8.13	8.65
Exploration Expense	-	-	-	-	1.03	0.46	0.65	0.04	0.01	0.06	0.03	0.04	0.10
G&A/Other	-	-	-	22.43	5.74	3.80	1.74	1.40	1.03	0.98	0.75	0.89	1.05
F&D Costs (1-Year)	-	-	-	21.92	19.37	8.10	5.50	5.00	7.11	4.47	1.75	3.11	3.23
Return on Capital	-	-	-	26.68	21.45	8.37	8.91	6.79	7.31	4.89	2.36	3.57	4.16
Income Taxes	-	-	-	8.89	7.15	2.79	2.97	2.26	2.44	1.63	0.79	1.19	1.39
Breakeven Oil Price	**-**	**-**	**-**	**96.70**	**72.15**	**39.28**	**32.74**	**23.94**	**24.61**	**18.36**	**16.06**	**16.93**	**18.58**
Quality Differential	-	-	-	(4.70)	8.96	4.80	4.41	6.18	6.48	6.32	1.10	4.63	4.90
Required Brent Price	**-**	**-**	**-**	**92.00**	**81.11**	**44.08**	**37.15**	**30.12**	**31.09**	**24.68**	**17.16**	**21.56**	**23.48**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	36.52	33.94	32.81	25.53	17.07	13.98	13.85	20.34	16.74	17.69
Exploration Expense	-	-	-	-	2.01	0.96	1.28	0.08	0.02	0.13	0.07	0.07	0.20
G&A/Other	-	-	-	48.84	11.20	7.91	3.43	2.83	2.13	2.15	1.46	1.84	2.16
F&D Costs (1-Year)	-	-	-	46.62	40.87	23.68	11.65	8.09	16.45	9.97	3.29	6.63	18.64
Return on Capital	-	-	-	55.39	38.31	21.91	17.70	10.69	16.64	10.68	4.51	7.62	23.36
Income Taxes	-	-	-	18.46	12.77	7.30	5.90	3.56	5.55	3.56	1.50	2.54	7.79
Breakeven Oil Price	**-**	**-**	**-**	**205.84**	**139.10**	**94.57**	**65.50**	**42.32**	**54.77**	**40.35**	**31.17**	**35.45**	**69.83**
Quality Differential	-	-	-	(10.23)	17.47	10.01	8.68	12.49	13.48	13.83	2.16	9.82	10.13
Required Brent Price	**-**	**-**	**-**	**195.61**	**156.57**	**104.57**	**74.18**	**54.81**	**68.25**	**54.18**	**33.33**	**45.28**	**79.96**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	36.52	33.94	32.81	25.53	17.07	13.98	13.85	20.34	16.74	17.69
Exploration Expense	-	-	-	-	2.01	0.96	1.28	0.08	0.02	0.13	0.07	0.07	0.20
G&A/Other	-	-	-	48.84	11.20	7.91	3.43	2.83	2.13	2.15	1.46	1.84	2.16
F&D Costs (1-Year)	-	-	-	60.31	69.92	13.49	26.54	16.50	15.24	11.31	8.66	9.79	15.65
Return on Capital	-	-	-	72.01	65.57	12.47	38.20	21.47	15.42	12.11	11.52	11.23	19.64
Income Taxes	-	-	-	24.00	21.86	4.16	12.73	7.16	5.14	4.04	3.84	3.74	6.55
Breakeven Oil Price	**-**	**-**	**-**	**241.69**	**204.50**	**71.79**	**107.72**	**65.11**	**51.93**	**43.59**	**45.89**	**43.41**	**61.89**
Quality Differential	-	-	-	(10.23)	17.47	10.01	8.68	12.49	13.48	13.83	2.16	9.82	10.13
Required Brent Price	**-**	**-**	**-**	**231.47**	**221.97**	**81.80**	**116.39**	**77.61**	**65.41**	**57.42**	**48.05**	**53.24**	**72.02**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

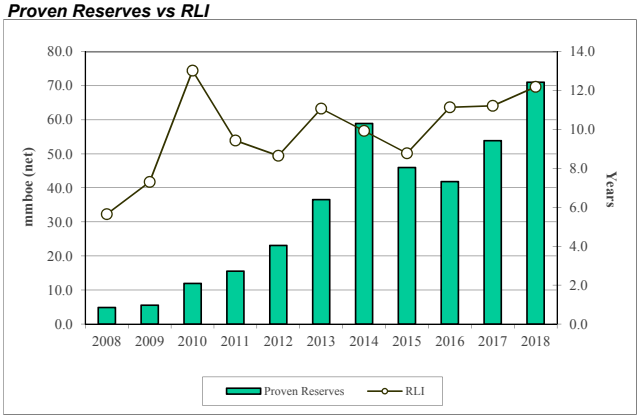
Surge Energy (SGY - TSX)

US$, net

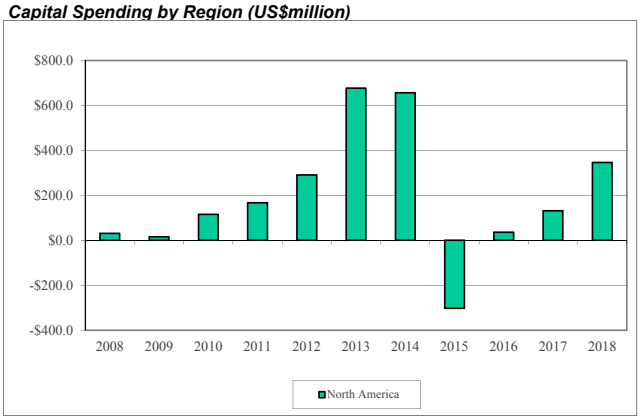
- Surge reported results of operations of $1.41/boe compared to $3.31/boe in 2017.
- One-year F&D costs came in at $15.13/boe versus 10.65/boe last year. F&D costs were $16.43/boe on a realized ratio basis while the costs for PD reserves were $24.07/boe.
- The company's 2018 operations imply a required Brent breakeven oil price of $84.30/boe on a realized ratio basis on total proved reserves, while the PD costs suggest a breakeven of $99.47/boe.
- Surge reported a loss on capital employed of 4.6% in 2018 compared to a normalized ROCE of 2.5% last year.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

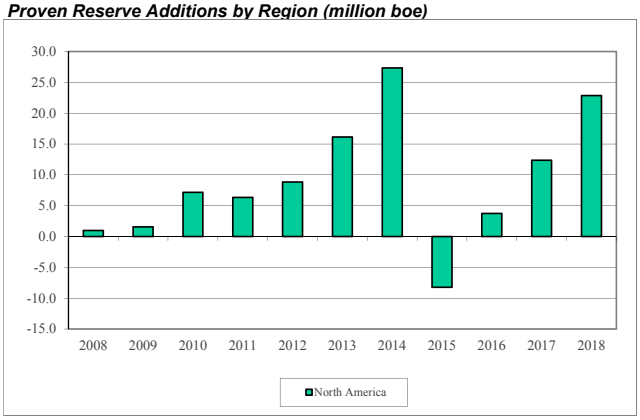
Proven Reserves vs RLI



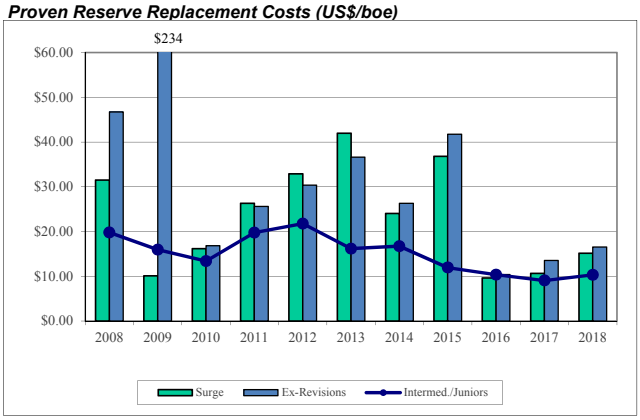
Capital Spending by Region (US$million)



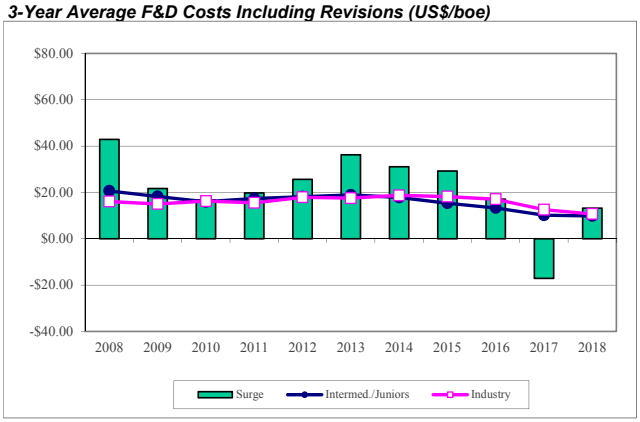
Proven Reserve Additions by Region (million boe)



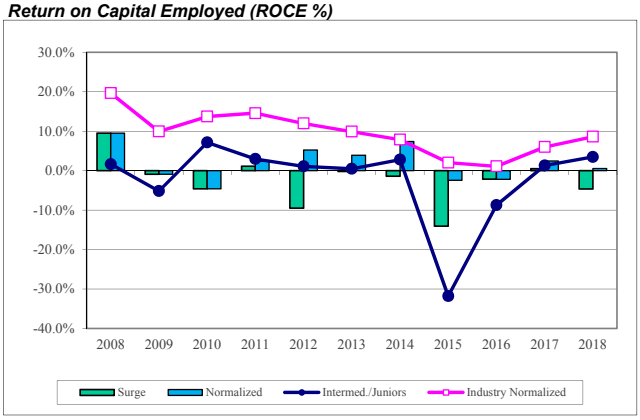
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

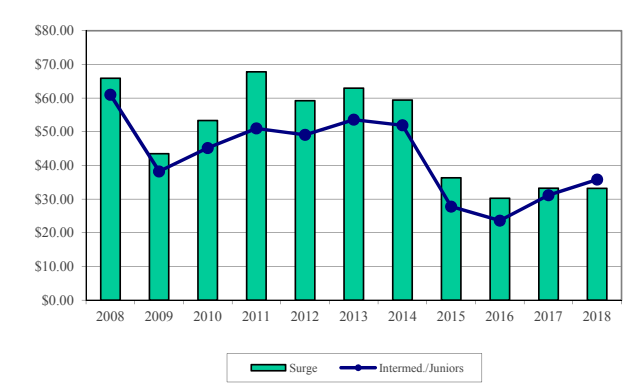
See pages F1 to F4 for analyst coverage.

Surge Energy (SGY - TSX)

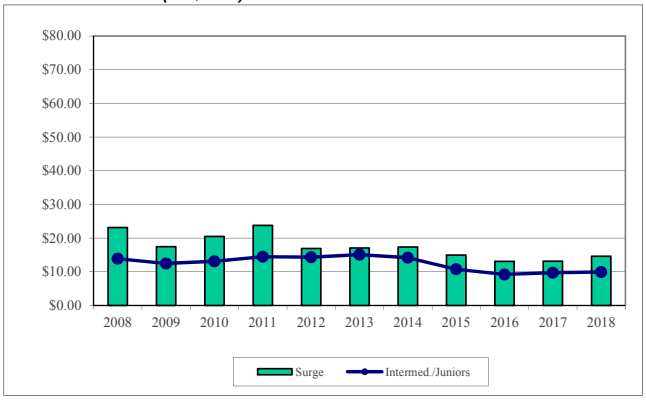
US$/boe, net

North America

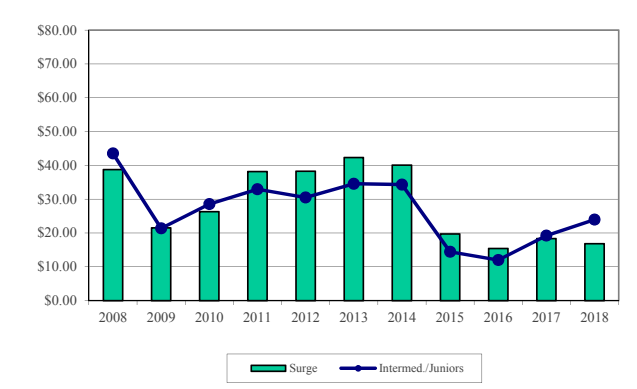
Upstream Net Revenue (US$/boe)



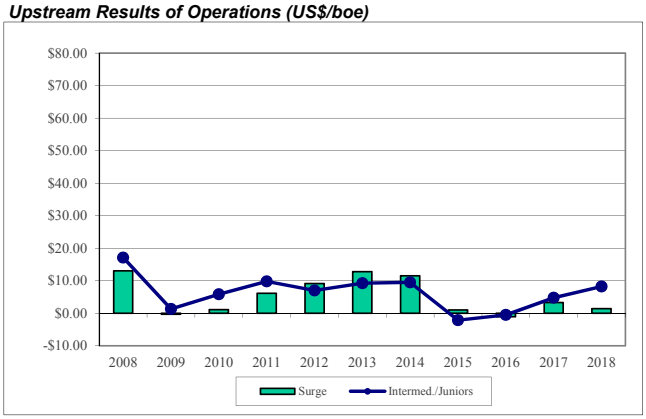
Production Costs (US$/boe)



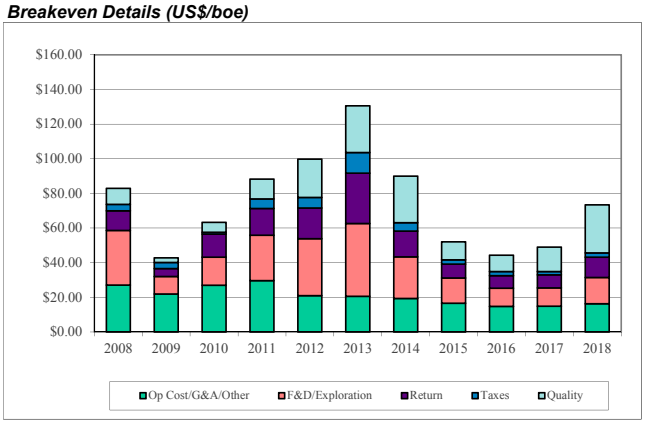
Upstream Operating Earnings (US$/boe)



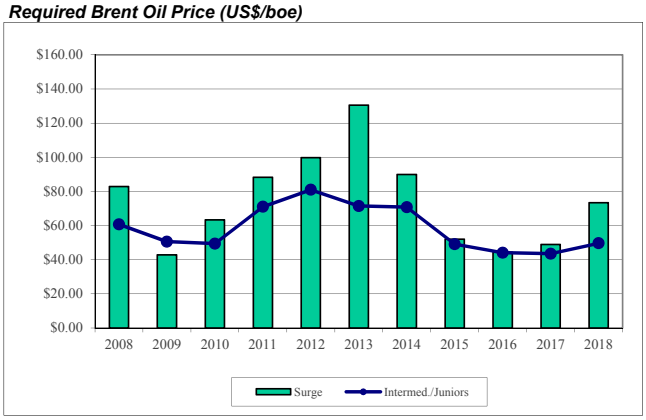
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Surge Energy (SGY - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	55	34	48	115	158	216	361	156	111	163	202
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	2
Other	2	(1)	0	(6)	6	(22)	41	(5)	(0)	5	(5)
Total Revenue and Other Income	57	33	49	109	163	194	402	152	110	167	198
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	20	13	19	39	45	56	103	78	49	63	85
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	3	3	6	10	11	12	12	9	7	8	10
Depreciation, Depletion and Amortization	18	17	23	49	69	80	146	96	63	68	88
Interest, net	2	2	1	4	8	11	20	13	7	11	17
Other	3	1	11	3	102	48	171	175	8	23	65
Earnings Before Income Tax	10	(3)	(11)	4	(72)	(14)	(50)	(220)	(24)	(6)	(67)
Current Income Taxes	-	-	-	-	-	1	-	-	-	-	-
Future Income Taxes	2	(1)	(1)	2	(18)	(5)	(20)	(52)	(1)	(1)	(12)
Total Income Taxes	2	(1)	(1)	2	(18)	(4)	(20)	(52)	(1)	(1)	(12)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	7	(2)	(10)	2	(53)	(10)	(30)	(168)	(23)	(5)	(55)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	7	(2)	(10)	2	(53)	(10)	(30)	(168)	(23)	(5)	(55)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	7	(2)	(10)	2	(53)	(10)	(30)	(168)	(23)	(5)	(55)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	7	(2)	(10)	2	(53)	(10)	(30)	(168)	(23)	(5)	(55)
Charges and Credits Not Impacting Cash	21	15	22	51	150	124	318	215	65	86	132
Other	2	2	8	5	(4)	1	(77)	35	8	(5)	(2)
Cash Flow From Operations	30	16	20	58	92	116	211	82	50	76	75
Change in Working Capital / Other	(3)	(1)	(3)	(1)	1	(6)	(23)	3	(8)	(4)	19
Net Cash From Operating Activities	27	14	17	57	93	110	188	84	42	72	94
Total Capital Expenditures	(31)	(16)	(41)	(152)	(181)	(122)	(135)	(60)	(56)	(76)	(93)
Acquisitions, net	-	-	(74)	(15)	(24)	(317)	(169)	363	20	(56)	(134)
Other	4	(3)	15	9	3	(4)	8	(9)	(1)	(1)	2
Net Cash From Investing Activities	(27)	(19)	(100)	(159)	(202)	(443)	(297)	294	(37)	(133)	(226)
Net Change in Debt	2	2	(27)	43	108	59	126	(325)	9	69	154
Net Change in Common Stock	(2)	3	111	57	1	293	84	1	3	7	(4)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	(19)	(101)	(54)	(17)	(16)	(18)
Other	-	-	-	-	-	-	-	(0)	(0)	-	-
Net Cash From Financing Activities	0	5	84	100	109	333	109	(378)	(5)	61	132
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	0	(0)	1	(1)	-	-	-	0	0	-	(0)
Cash and Equivalents, Beginning of Year	(0)	(0)	(0)	1	(0)	(0)	(0)	(0)	(0)	(0)	(0)
Cash and Equivalents, End of Year	(0)	(0)	1	(0)	(0)	(0)	(0)	(0)	(0)	(0)	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Surge Energy (SGY - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	7	5	16	25	30	38	105	24	24	38	27
Net Property, Plant and Equipment	120	112	351	491	647	1,299	1,693	847	792	886	1,180
Other Assets	-	-	-	6	5	-	-	26	26	26	2
Total Assets	128	117	367	522	682	1,337	1,798	897	843	950	1,209
Total Current Liabilities	53	46	33	52	55	77	92	37	35	31	38
Long-term Debt	-	-	29	73	195	272	511	117	121	190	345
Deferred Income Taxes	18	16	34	28	41	71	30	-	-	-	-
Other Liabilities and Deferred Credits	5	5	12	41	41	88	191	107	97	131	182
Total Liabilities	76	67	108	194	331	507	824	261	254	352	565
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	12	14	221	282	352	859	1,134	984	963	999	1,113
Contributed Surplus (Paid-in Capital)	3	3	5	13	21	26	29	32	31	31	40
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	37	33	26	25	(28)	(63)	(194)	(382)	(408)	(437)	(512)
Other / Comprehensive Income (Loss)	-	-	7	8	7	7	5	3	3	5	3
Total Shareholders' Equity	52	50	258	328	351	830	974	636	589	598	644
Total Liabilities and Shareholders' Equity	128	117	367	522	682	1,337	1,798	897	843	950	1,209
Return on Capital Employed (ROCE)	**9.5%**	**-0.9%**	**-4.6%**	**1.2%**	**-9.5%**	**-0.2%**	**-1.4%**	**-14.0%**	**-2.2%**	**0.5%**	**-4.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$65.86	$43.46	$53.34	$67.76	$59.21	$62.93	$59.39	$36.33	$30.23	$33.20	$33.17	$32.41	$39.48
Production Costs	$23.12	$17.41	$20.45	$23.77	$16.88	$17.04	$17.36	$14.93	$13.06	$13.14	$14.57	$13.70	$14.80
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$21.43	$22.07	$25.14	$29.75	$25.97	$24.25	$24.67	$18.37	$16.87	$14.22	$15.14	$15.28	$18.10
G&A / Other	$4.00	$4.51	$6.57	$5.84	$4.06	$3.59	$1.97	$1.64	$1.75	$1.70	$1.75	$1.73	$1.77
Pre-tax Results of Operations	$17.32	-$0.53	$1.19	$8.40	$12.29	$18.06	$15.39	$1.37	-$1.44	$4.14	$1.71	$1.70	$4.81
Income Taxes	$4.29	-$0.23	$0.09	$2.23	$3.14	$5.25	$3.85	$0.33	-$0.36	$0.83	$0.30	$0.32	$1.04
Results of Operations	$13.03	-$0.30	$1.10	$6.17	$9.15	$12.81	$11.54	$1.05	-$1.08	$3.31	$1.41	$1.38	$3.77

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Surge Energy (SGY - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	7.3	5.5	5.9	9.9	14.1	11.8	17.4	15.7	11.3	16.1	19.1	15.5	15.9
Liquids Production (b/d)	1,142	1,169	1,518	2,863	4,961	7,073	13,358	11,734	8,414	10,471	12,780	10,555	11,352
Total Production (boe/d)	2,362	2,080	2,506	4,517	7,311	9,044	16,263	14,349	10,292	13,159	15,958	13,136	14,004
% Gas Production	52%	44%	39%	37%	32%	22%	18%	18%	18%	20%	20%	20%	19%
% Oil Production	48%	56%	61%	63%	68%	78%	82%	82%	82%	80%	80%	80%	81%
Proven Reserves:													
Closing Gas Reserves (bcf)	14.8	12.8	31.0	34.1	49.2	55.1	74.5	67.4	44.7	61.2	66.9	57.6	62.9
Closing Oil Reserves (mmbbls)	2.4	3.4	6.7	9.9	14.9	27.4	46.5	34.7	34.4	43.7	59.9	46.0	43.9
Closing Total Proven Reserves (mmboe)	4.9	5.5	11.9	15.6	23.1	36.6	58.9	46.0	41.9	53.9	71.0	55.6	54.3
% Gas Reserves	51%	38%	43%	37%	36%	25%	21%	24%	18%	19%	16%	17%	19%
% Oil Reserves	49%	62%	57%	63%	64%	75%	79%	76%	82%	81%	84%	83%	81%
Proven Reserve Life Index	5.6	7.3	13.0	9.4	8.6	11.1	9.9	8.8	11.1	11.2	12.2	11.5	10.7
Proven Reserve Additions:													
Gas Additions (bcf)	2.6	0.4	19.5	12.2	12.2	10.4	25.2	-3.3	-2.0	7.1	12.3	17.3	39.2
Oil Additions (mmbbls)	0.6	1.5	3.9	4.3	6.8	14.4	23.1	-7.7	4.1	11.2	20.8	36.1	51.6
Total Additions (mmboe)	1.0	1.6	7.2	6.4	8.8	16.1	27.3	-8.2	3.7	12.4	22.9	39.0	58.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.7	0.0	2.7	7.2	7.1	6.8	2.5	5.3	4.7	4.5	4.9	14.2	21.9
Net Acquisitions	0.0	0.0	4.2	-0.7	2.5	11.6	22.5	-12.5	-1.2	5.2	16.0	19.9	29.9
Revisions of Estimates	0.3	1.5	0.3	-0.2	-0.7	-2.3	2.4	-1.0	0.3	2.6	2.0	4.9	6.3
Components as % of Total Additions:													
Extensions, Discoveries and Additions	70.2%	2.3%	37.8%	113.2%	80.5%	42.4%	9.1%	-63.9%	125.6%	36.6%	21.6%	36.4%	37.8%
Net Acquisitions	-2.7%	2.0%	58.3%	-10.5%	27.8%	72.1%	82.2%	152.1%	-32.9%	42.1%	69.9%	51.2%	51.5%
Revisions of Estimates	32.6%	95.7%	3.9%	-2.7%	-8.4%	-14.5%	8.7%	11.8%	7.3%	21.3%	8.6%	12.5%	10.8%
Additions as % of Production:													
Gas	99.1%	19.5%	nm	338.1%	238.1%	240.2%	396.1%	-58.2%	-49.5%	120.1%	176.6%	102.2%	134.9%
Oil	132.2%	350.6%	nm	412.9%	375.1%	558.1%	474.5%	-179.1%	133.1%	292.9%	446.3%	312.3%	248.9%
Total	115.1%	205.6%	nm	385.5%	331.1%	488.8%	460.5%	-157.1%	99.8%	257.6%	392.6%	271.0%	227.3%
Additions as % of Reserves:													
Gas	17.9%	3.0%	62.9%	35.9%	24.9%	18.8%	33.8%	-4.9%	-4.6%	11.6%	18.4%	30.1%	62.3%
Oil	22.9%	43.8%	57.9%	43.7%	45.6%	52.6%	49.7%	-22.1%	11.9%	25.6%	34.8%	78.5%	117.6%
Total	20.4%	28.1%	60.1%	40.9%	38.2%	44.1%	46.4%	-17.9%	9.0%	23.0%	32.2%	70.1%	106.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$4.9	$2.1	$5.7	$25.3	$14.7	$8.5	$3.3	$2.7	$1.5	$5.1	$5.2	$11.8	$17.9
Exploration & Development	$26.4	$13.7	$35.6	$126.6	$166.1	$113.5	$132.1	$57.4	$54.4	$70.8	$87.8	$213.0	$402.5
Net Acquisitions	$0.0	$0.0	$74.4	$15.2	$109.8	$555.0	$521.4	-$363.0	-$19.8	$55.9	$253.0	$289.0	$447.4
Total Expenditures	$31.3	$15.8	$115.7	$167.1	$290.6	$676.9	$656.9	-$302.9	$36.1	$131.8	$346.0	$513.9	$867.8
Expenditures as % of Total:													
Land & Seismic	15.6%	13.3%	4.9%	15.1%	5.1%	1.3%	0.5%	-0.9%	4.2%	3.9%	1.5%	2.3%	2.1%
Exploration & Development	84.4%	86.7%	30.8%	75.7%	57.2%	16.8%	20.1%	-18.9%	150.7%	53.7%	25.4%	41.4%	46.4%
Net Acquisitions	0.0%	0.0%	64.3%	9.1%	37.8%	82.0%	79.4%	119.8%	-54.9%	42.4%	73.1%	56.2%	51.6%
Cashflow (US$million)	$29.7	$15.6	$20.1	$58.5	$92.3	$129.3	$222.1	$81.5	$50.3	$51.3	$51.4	$153.0	$456.6
Cashflow (US$/boe)	$34.48	$20.60	$22.02	$35.46	$34.59	$39.18	$37.42	$15.56	$13.38	$10.68	$8.82	$10.63	$17.87
Recycle Ratio	1.1x	2.0x	1.4x	1.3x	1.1x	0.9x	1.6x	0.4x	1.4x	1.0x	0.6x	1.0x	1.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$30.67	$10.30	$13.83	$21.62	$28.36	$27.10	$27.81	$14.01	$11.21	$10.60	$13.50	$11.81	$14.91
Net Acquisition Costs	$0.00	$0.00	$17.82	-$22.87	$44.65	$47.69	$23.21	$29.00	$16.04	$10.73	$15.84	$14.49	$14.97
All Sources (incl. revisions)	$31.51	$10.10	$16.16	$26.29	$32.90	$41.95	$24.03	$36.82	$9.62	$10.65	$15.13	$13.18	$14.94
Exploration & Development (excl. revisions)	$44.91	$433.63	$15.26	$21.11	$25.42	$17.83	$54.17	$11.43	$11.86	$16.77	$18.85	$15.86	$19.17
Net Acquisition Costs	$0.00	$0.00	$17.82	-$22.87	$44.65	$47.69	$23.21	$29.00	$16.04	$10.73	$15.84	$14.49	$14.97
All Sources (excl. revisions)	$46.74	$233.89	$16.81	$25.59	$30.36	$36.64	$26.31	$41.73	$10.38	$13.54	$16.55	$15.06	$16.74

Source: BMO Capital Markets, Company Reports

Surge Energy (SGY - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	23.12	17.41	20.45	23.77	16.88	17.04	17.36	14.93	13.06	13.14	14.57	13.70	14.80
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	4.00	4.51	6.57	5.84	4.06	3.59	1.97	1.64	1.75	1.70	1.75	1.73	1.77
F&D Costs (1-Year)	31.51	10.10	16.16	26.29	32.90	41.95	24.03	14.58	10.41	10.65	15.13	12.07	14.96
Return on Capital	11.30	4.62	13.37	15.40	17.78	29.08	14.84	7.99	7.26	7.48	11.74	8.96	10.21
Income Taxes	3.72	3.51	1.06	5.55	6.09	11.92	4.95	2.50	2.42	1.88	2.47	2.07	2.81
Breakeven Oil Price	**73.64**	**40.14**	**57.61**	**76.85**	**77.72**	**103.57**	**63.14**	**41.65**	**34.90**	**34.86**	**45.66**	**38.53**	**44.55**
Quality Differential	9.23	2.69	5.72	11.42	22.04	26.99	26.82	10.35	9.45	14.10	27.77	20.93	15.42
Required Brent Price	**82.87**	**42.83**	**63.33**	**88.27**	**99.76**	**130.56**	**89.95**	**52.00**	**44.35**	**48.96**	**73.43**	**59.46**	**59.97**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	28.99	22.27	27.64	32.48	22.63	20.28	19.61	17.10	15.06	15.49	17.69	16.24	17.23
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	5.01	5.77	8.87	7.98	5.45	4.27	2.23	1.88	2.02	2.00	2.13	2.06	2.06
F&D Costs (1-Year)	38.18	10.31	23.07	34.36	40.24	45.52	26.67	14.08	10.41	11.46	16.43	12.77	15.81
Return on Capital	13.72	4.88	18.47	20.35	21.01	30.56	16.23	7.31	7.29	8.24	13.32	9.52	10.62
Income Taxes	4.52	3.70	1.47	7.34	7.20	12.53	5.41	2.29	2.43	2.07	2.80	2.50	3.04
Breakeven Oil Price	**90.42**	**46.93**	**79.52**	**102.51**	**96.53**	**113.16**	**70.15**	**42.66**	**37.22**	**39.27**	**52.37**	**43.09**	**48.76**
Quality Differential	11.58	3.44	7.73	12.65	29.72	29.19	28.66	19.24	11.82	15.86	31.93	19.87	21.50
Required Brent Price	**102.00**	**50.37**	**87.25**	**115.15**	**126.25**	**142.35**	**98.81**	**61.90**	**49.03**	**55.14**	**84.30**	**62.96**	**70.26**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	28.99	22.27	27.64	32.48	22.63	20.28	19.61	17.10	15.06	15.49	17.69	16.24	17.23
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	5.01	5.77	8.87	7.98	5.45	4.27	2.23	1.88	2.02	2.00	2.13	2.06	2.06
F&D Costs (1-Year)	44.46	19.44	31.46	69.96	49.46	62.70	33.38	18.78	7.29	37.50	24.07	20.05	24.20
Return on Capital	15.90	9.20	25.15	41.43	25.81	42.49	20.31	9.81	5.15	26.89	19.55	14.82	16.27
Income Taxes	5.23	6.99	2.00	14.94	8.85	17.42	6.77	3.07	1.72	6.75	4.11	3.90	4.66
Breakeven Oil Price	**99.60**	**63.66**	**95.12**	**166.78**	**112.19**	**147.16**	**82.30**	**50.65**	**31.23**	**88.63**	**67.54**	**57.07**	**64.43**
Quality Differential	11.58	3.44	7.73	12.65	29.72	29.19	28.66	19.24	11.82	15.86	31.93	19.87	21.50
Required Brent Price	**111.17**	**67.10**	**102.85**	**179.42**	**141.91**	**176.35**	**110.95**	**69.89**	**43.05**	**104.50**	**99.47**	**76.94**	**85.93**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

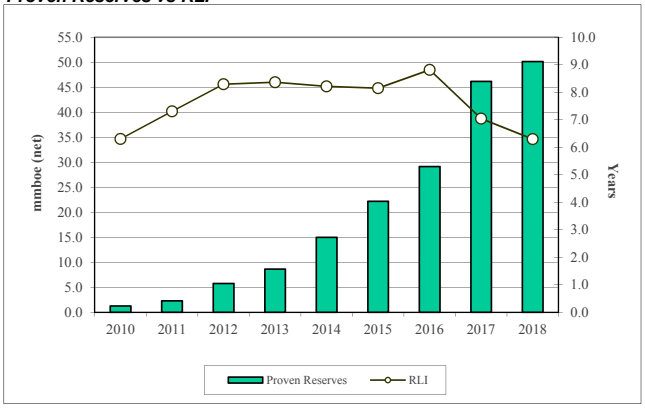
Tamarack Valley Energy Ltd. (TVE - TSX)

US$, net

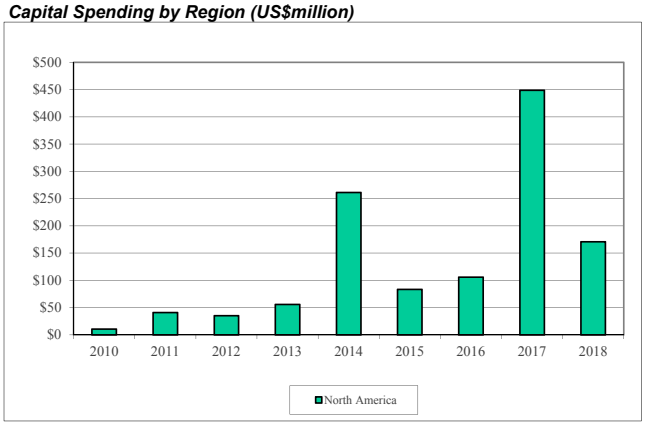
- Tamarack reported results of operations of $4.14/boe in 2018 versus $1.57/boe in 2017.
- One-year F&D costs came in higher at $14.94/boe compared to $19.53/boe last year. On a realized oil:gas price ratio basis, F&D costs decreased to $18.81/boe from $28.64/boe, while costs for PD reserves also dropped to $25.30/boe from $37.40/boe.
- The company's 2018 operations imply a required Brent breakeven oil price of $67.20/boe on a realized ratio basis on total proved reserves, while PD costs suggest a Brent breakeven oil price of $77.08/boe.
- Tamarack reported ROCE of 4.8% in 2018 compared to a normalized 2017 ROCE of 1.1%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

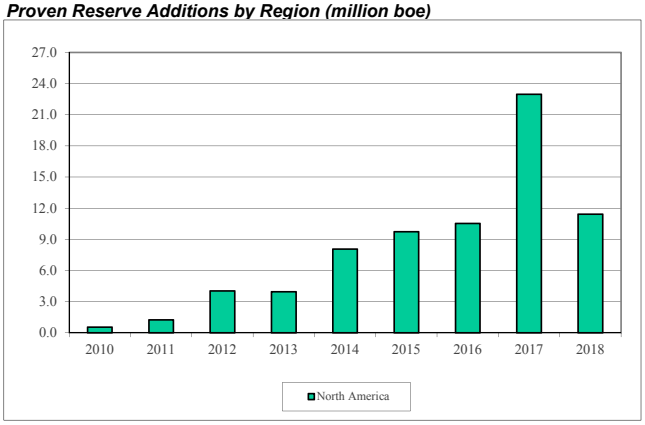
Proven Reserves vs RLI



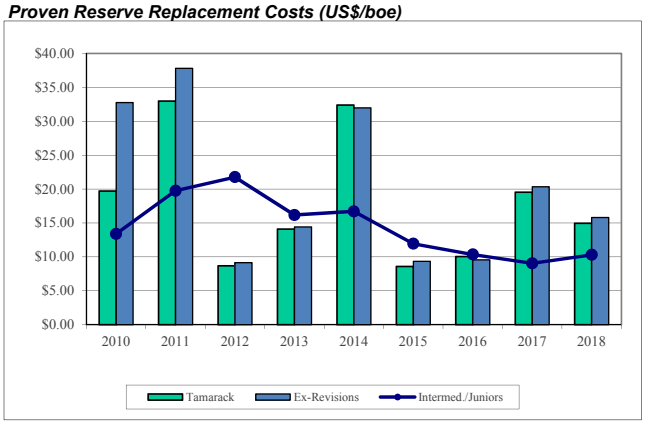
Capital Spending by Region (US$million)



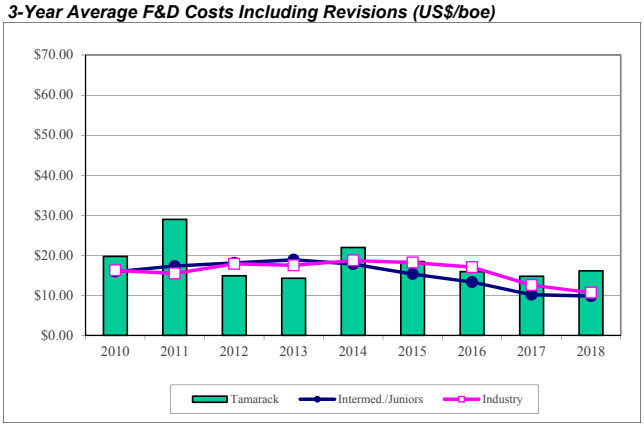
Proven Reserve Additions by Region (million boe)



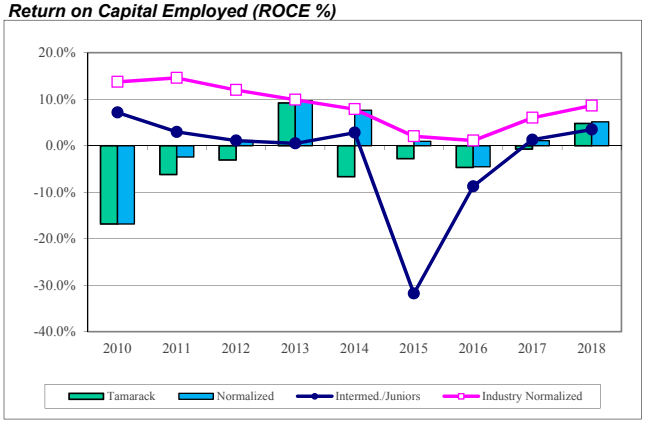
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

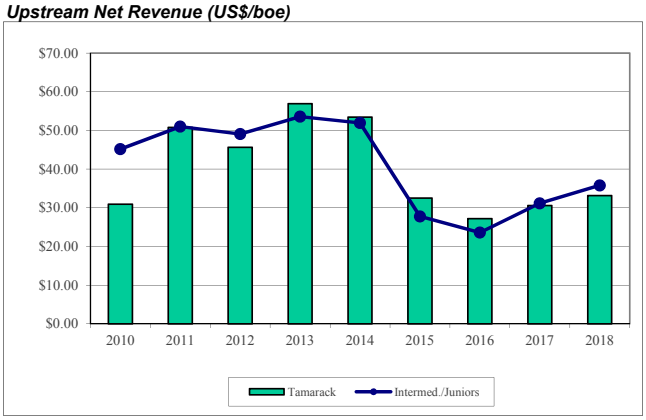
See pages F1 to F4 for analyst coverage.

Tamarack Valley Energy Ltd. (TVE - TSX)

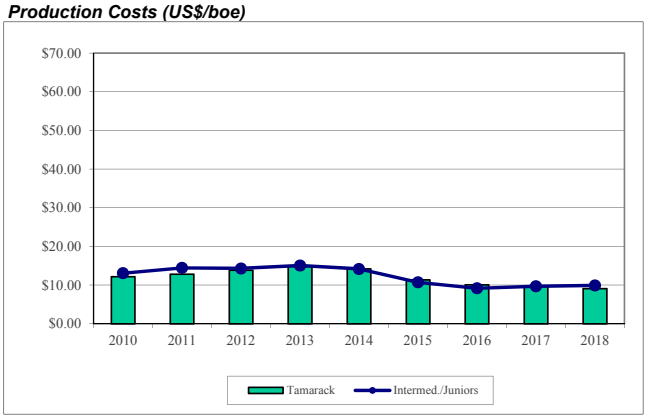
US$/boe, net

North America

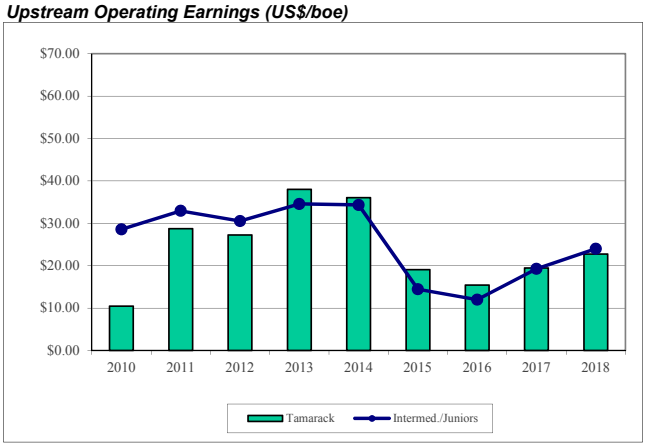
Upstream Net Revenue (US$/boe)



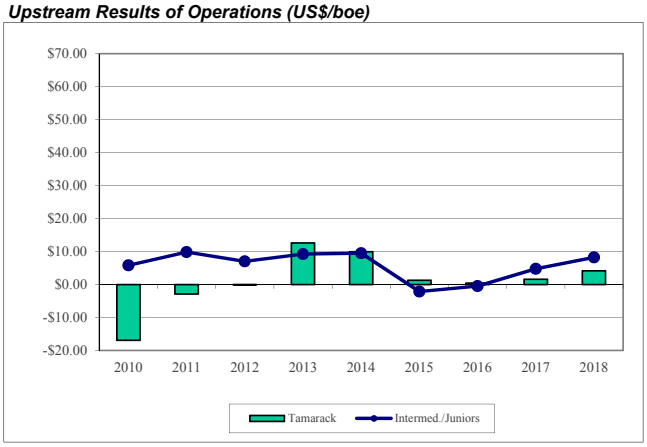
Production Costs (US$/boe)



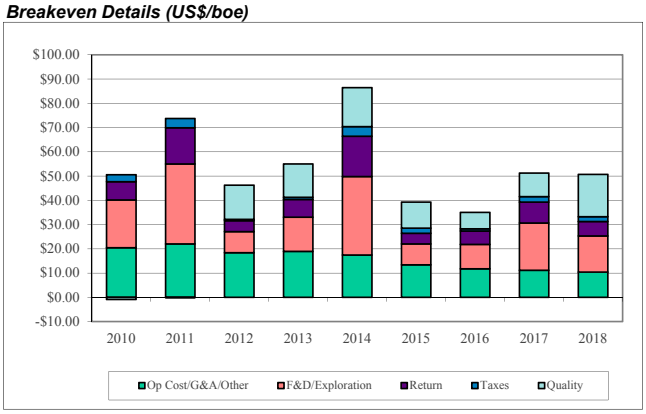
Upstream Operating Earnings (US$/boe)



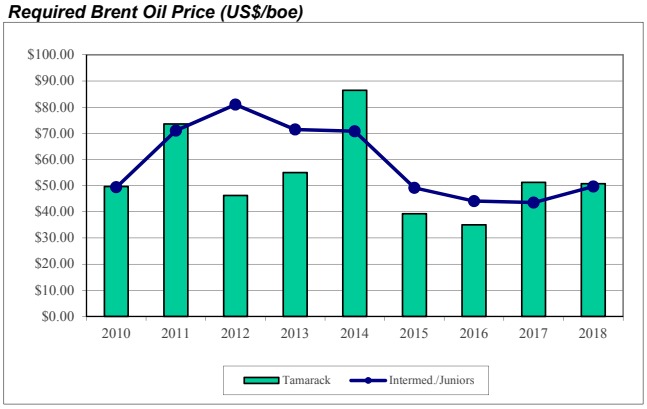
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Tamarack Valley Energy Ltd. (TVE - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	6	16	32	61	99	75	81	196	277
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	(1)	2	(5)	8	17	(8)	7	8
Total Revenue and Other Income	-	-	6	16	34	56	108	92	72	203	285
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	2	4	10	15	26	31	33	63	72
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	2	3	3	4	6	6	6	10	10
Depreciation, Depletion and Amortization	-	-	7	10	19	25	43	47	49	115	137
Interest, net	-	-	0	0	1	2	3	5	4	8	9
Other	-	-	4	2	6	(6)	58	24	5	21	10
Earnings Before Income Tax	-	-	(9)	(4)	(5)	16	(28)	(20)	(25)	(14)	46
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	-	-	(2)	(1)	(1)	2	(5)	(7)	(3)	(3)	16
Total Income Taxes	-	-	(2)	(1)	(1)	2	(5)	(7)	(3)	(3)	16
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	(6)	(3)	(4)	14	(23)	(14)	(21)	(11)	30
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	(6)	(3)	(4)	14	(23)	(14)	(21)	(11)	30
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	(6)	(3)	(4)	14	(23)	(14)	(21)	(11)	30

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	(6)	(3)	(4)	14	(23)	(14)	(21)	(11)	30
Charges and Credits Not Impacting Cash	-	-	4	12	23	27	92	61	46	125	157
Other	-	-	2	0	(2)	(6)	(9)	0	23	3	(13)
Cash Flow From Operations	-	-	(0)	9	17	36	60	47	48	117	173
Change in Working Capital / Other	-	-	(0)	1	(3)	(4)	1	1	(2)	(6)	9
Net Cash From Operating Activities	-	-	(0)	10	14	32	61	48	46	111	183
Total Capital Expenditures	-	-	(11)	(43)	(37)	(56)	(139)	(49)	(43)	(148)	(175)
Acquisitions, net	-	-	7	2	(9)	0	(122)	(36)	(63)	(86)	5
Other	-	-	5	1	(1)	6	17	(12)	(4)	30	(2)
Net Cash From Investing Activities	-	-	1	(40)	(47)	(50)	(245)	(97)	(109)	(204)	(172)
Net Change in Debt	-	-	(1)	1	18	18	26	(14)	(28)	91	(2)
Net Change in Common Stock	-	-	4	26	15	-	159	62	92	1	(9)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Net Cash From Financing Activities	-	-	3	27	33	18	185	48	63	93	(11)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	4	(4)	(0)	-	1	(1)	(0)	0	(0)
Cash and Equivalents, Beginning of Year	-	-	0	4	-	(0)	(0)	1	(0)	(0)	(0)
Cash and Equivalents, End of Year	-	-	4	(0)	(0)	(0)	1	(0)	(0)	0	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tamarack Valley Energy Ltd. (TVE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	6	3	8	17	28	23	14	34	34
Net Property, Plant and Equipment	-	-	38	60	134	226	398	379	456	898	940
Other Assets	-	-	-	3	10	19	25	28	32	0	2
Total Assets	-	-	44	66	152	262	451	430	501	931	976
Total Current Liabilities	-	-	7	11	56	99	47	25	27	45	34
Long-term Debt	-	-	-	-	-	-	91	65	34	126	125
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	25	41
Other Liabilities and Deferred Credits	-	-	1	2	12	19	37	50	85	138	149
Total Liabilities	-	-	8	13	68	118	175	139	146	335	348
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	44	77	111	153	304	326	406	656	655
Contributed Surplus (Paid-in Capital)	-	-	4	6	8	9	12	13	17	21	27
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	(12)	(30)	(34)	(19)	(40)	(49)	(68)	(80)	(52)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	(3)
Total Shareholders' Equity	-	-	36	53	84	144	276	291	355	597	627
Total Liabilities and Shareholders' Equity	-	-	44	66	152	262	451	430	501	931	976
Return on Capital Employed (ROCE)			**-16.8%**	**-6.2%**	**-3.1%**	**9.2%**	**-6.7%**	**-2.8%**	**-4.7%**	**-0.7%**	**4.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue			$30.89	$50.78	$45.64	$56.90	$53.43	$32.48	$27.19	$30.59	$33.13	$31.09	$33.08
Production Costs			$12.15	$12.80	$13.86	$14.81	$14.18	$11.35	$10.07	$9.67	$9.08	$9.48	$10.09
Exploration			$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A			$33.80	$32.36	$27.30	$23.80	$23.76	$17.11	$14.95	$17.48	$17.22	$16.89	$17.48
G&A / Other			$8.29	$9.25	$4.55	$4.10	$3.22	$2.08	$1.69	$1.47	$1.30	$1.43	$1.66
Pre-tax Results of Operations			-$23.34	-$3.63	-$0.07	$14.19	$12.27	$1.94	$0.49	$1.98	$5.52	$3.29	$3.85
Income Taxes			-$6.42	-$0.75	-$0.01	$1.60	$2.35	$0.64	$0.07	$0.41	$1.38	$0.66	$0.86
Results of Operations			-$16.92	-$2.88	-$0.06	$12.59	$9.92	$1.31	$0.42	$1.57	$4.14	$2.63	$2.99

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tamarack Valley Energy Ltd. (TVE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	3.1	3.5	6.2	7.0	11.7	18.1	25.5	44.4	47.2	39.0	29.4
Liquids Production (b/d)	-	-	37	268	861	1,655	3,047	4,443	4,814	10,564	13,939	9,772	7,362
Total Production (boe/d)	-	-	554	858	1,898	2,823	4,994	7,468	9,059	17,969	21,806	16,278	12,259
% Gas Production	-	-	93%	69%	55%	41%	39%	41%	47%	41%	36%	40%	40%
% Oil Production	-	-	7%	31%	45%	59%	61%	59%	53%	59%	64%	60%	60%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	5.7	7.3	12.5	21.2	37.8	64.3	69.6	112.9	115.6	99.4	80.0
Closing Oil Reserves (mmbbls)	-	-	0.3	1.1	3.7	5.1	8.7	11.5	17.5	27.4	30.9	25.3	19.2
Closing Total Proven Reserves (mmboe)	-	-	1.3	2.3	5.7	8.6	15.0	22.2	29.1	46.2	50.1	41.8	32.5
% Gas Reserves	-	-	75%	53%	36%	41%	42%	48%	40%	41%	38%	40%	41%
% Oil Reserves	-	-	25%	47%	64%	59%	58%	52%	60%	59%	62%	60%	59%
Proven Reserve Life Index	-	-	6.1	7.2	8.3	8.4	8.2	8.1	8.8	7.0	6.3	7.4	7.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	1.4	2.3	6.8	11.4	20.4	32.3	14.8	58.6	18.1	91.5	144.1
Oil Additions (mmbbls)	-	-	0.3	0.9	2.9	2.1	4.7	4.4	8.1	13.2	8.4	29.7	38.7
Total Additions (mmboe)	-	-	0.5	1.2	4.0	4.0	8.1	9.7	10.5	23.0	11.4	44.9	62.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	0.3	1.1	1.6	1.0	3.5	3.4	2.6	9.0	9.8	21.4	28.4
Net Acquisitions	-	-	-	-	2.3	2.9	4.6	5.5	8.5	13.0	1.0	22.5	32.7
Revisions of Estimates	-	-	0.2	0.2	0.2	0.1	(0.1)	0.8	(0.5)	0.9	0.6	1.0	1.7
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	60.1%	87.2%	38.9%	25.3%	43.9%	35.4%	24.7%	39.3%	85.5%	47.6%	45.3%
Net Acquisitions	-	-	0.0%	0.0%	56.3%	72.5%	57.4%	56.6%	80.3%	56.7%	9.0%	50.1%	52.1%
Revisions of Estimates	-	-	39.9%	12.8%	4.8%	2.2%	-1.3%	8.0%	-5.0%	4.0%	5.5%	2.2%	2.7%
Additions as % of Production:													
Gas	-	-	125.8%	181.9%	300.7%	446.1%	477.3%	487.1%	158.8%	361.3%	105.1%	214.0%	268.7%
Oil	-	-	2178.3%	867.9%	921.1%	339.5%	420.2%	268.3%	459.4%	342.7%	165.1%	277.4%	288.1%
Total	-	-	263.9%	396.6%	582.0%	383.6%	442.5%	356.9%	318.5%	350.4%	143.4%	252.1%	280.3%
Additions as % of Reserves:													
Gas	-	-	24.8%	32.0%	54.7%	53.9%	53.9%	50.2%	21.2%	51.9%	15.7%	92.1%	180.0%
Oil	-	-	93.5%	79.8%	79.0%	40.3%	53.9%	37.9%	46.0%	48.3%	27.2%	117.5%	201.8%
Total	-	-	41.9%	54.3%	70.2%	45.9%	53.9%	43.8%	36.1%	49.8%	22.8%	107.5%	192.9%

			2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	$2.4	$13.6	$0.5	$3.2	$6.4	$1.0	$1.9	$2.9	$3.6	$8.4	$15.9
Exploration & Development	-	-	$8.2	$29.2	$35.8	$52.8	$132.7	$47.0	$40.3	$143.3	$168.8	$352.5	$532.1
Net Acquisitions	-	-	$0.0	-$1.9	-$1.3	-$0.3	$122.2	$35.4	$63.4	$302.5	-$1.8	$364.1	$521.8
Total Expenditures	-	-	$10.5	$40.9	$35.0	$55.7	$261.3	$83.5	$105.7	$448.8	$170.6	$725.0	$1,069.8
Expenditures as % of Total:													
Land & Seismic	-	-	22.4%	33.2%	1.5%	5.7%	2.4%	1.2%	1.8%	0.6%	2.1%	1.2%	1.5%
Exploration & Development	-	-	77.6%	71.4%	102.1%	94.8%	50.8%	56.3%	38.2%	31.9%	98.9%	48.6%	49.7%
Net Acquisitions	-	-	0.0%	-4.6%	-3.6%	-0.5%	46.8%	42.4%	60.0%	67.4%	-1.1%	50.2%	48.8%
Cashflow (US$million)	-	-	-$0.2	$8.9	$16.7	$35.5	$59.9	$47.1	$48.0	$117.1	$173.3	$338.4	$445.5
Cashflow (US$/boe)	-	-	-$0.80	$28.48	$24.08	$34.50	$32.88	$17.29	$14.52	$17.85	$21.78	$18.99	$19.91
Recycle Ratio	-	-	0.0x	0.9x	2.8x	2.4x	1.0x	2.0x	1.4x	0.9x	1.5x	1.2x	1.2x
	-	-											

			2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	$19.70	$34.48	$20.61	$51.53	$40.51	$11.37	$20.34	$14.71	$16.59	$16.10	$18.22
Net Acquisition Costs	-	-	na	na	-$0.56	-$0.10	$26.38	$6.44	$7.50	$23.21	-$1.77	$16.17	$15.98
All Sources (incl. revisions)	-	-	$19.70	$32.98	$8.69	$14.09	$32.39	$8.58	$10.03	$19.53	$14.94	$16.14	$17.06
Exploration & Development (excl. revisions)	-	-	$32.76	$39.54	$23.16	$56.09	$39.29	$13.95	$16.23	$16.19	$17.66	$16.86	$19.30
Net Acquisition Costs	-	-	na	na	-$0.56	-$0.10	$26.38	$6.44	$7.50	$23.21	-$1.77	$16.17	$15.98
All Sources (excl. revisions)	-	-	$32.76	$37.81	$9.13	$14.41	$31.97	$9.33	$9.56	$20.33	$15.81	$16.51	$17.53

Source: BMO Capital Markets, Company Reports

Tamarack Valley Energy Ltd. (TVE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	12.15	12.80	13.86	14.81	14.18	11.35	10.07	9.67	9.08	9.48	10.09
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	8.29	9.25	4.55	4.10	3.22	2.08	1.69	1.47	1.30	1.43	1.66
F&D Costs (1-Year)	-	-	19.70	32.98	8.69	14.09	32.39	8.58	10.03	19.53	14.94	16.14	17.06
Return on Capital	-	-	7.56	14.87	4.51	7.33	16.64	4.36	5.54	8.60	5.92	7.43	8.23
Income Taxes	-	-	2.87	3.88	0.55	0.93	3.94	2.12	0.92	2.23	1.97	1.85	2.36
Breakeven Oil Price	**-**	**-**	**50.56**	**73.77**	**32.15**	**41.26**	**70.37**	**28.49**	**28.26**	**41.50**	**33.22**	**36.33**	**39.40**
Quality Differential	-	-	(0.91)	(0.18)	14.09	13.73	16.08	10.79	6.77	9.76	17.49	11.34	12.18
Required Brent Price	**-**	**-**	**49.65**	**73.59**	**46.24**	**55.00**	**86.46**	**39.28**	**35.03**	**51.25**	**50.72**	**47.67**	**51.57**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	32.87	4.62	24.89	21.62	19.38	15.20	14.69	13.98	12.63	13.49	14.20
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	22.40	3.34	8.17	5.98	4.40	2.79	2.47	2.12	1.80	2.04	2.33
F&D Costs (1-Year)	-	-	28.16	18.20	15.09	22.23	45.59	13.12	11.90	28.64	18.81	21.57	23.40
Return on Capital	-	-	14.70	7.16	9.99	11.69	22.70	6.25	7.00	12.67	7.24	10.19	11.20
Income Taxes	-	-	5.57	1.87	1.21	1.49	5.37	3.04	1.16	3.29	2.41	2.54	3.22
Breakeven Oil Price	**-**	**-**	**103.70**	**35.20**	**59.35**	**63.01**	**97.44**	**40.41**	**37.22**	**60.70**	**42.89**	**49.83**	**54.36**
Quality Differential	-	-	(2.46)	(0.07)	25.31	20.04	21.98	14.46	9.89	14.11	24.31	16.10	16.95
Required Brent Price	**-**	**-**	**101.24**	**35.13**	**84.66**	**83.05**	**119.42**	**54.87**	**47.11**	**74.81**	**67.20**	**65.93**	**71.31**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	32.87	4.62	24.89	21.62	19.38	15.20	14.69	13.98	12.63	13.49	14.20
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	22.40	3.34	8.17	5.98	4.40	2.79	2.47	2.12	1.80	2.04	2.33
F&D Costs (1-Year)	-	-	19.78	28.71	20.35	28.96	61.29	23.85	15.73	37.40	25.30	28.44	32.71
Return on Capital	-	-	10.39	11.34	13.44	15.13	30.31	11.37	9.29	16.39	9.78	13.42	15.53
Income Taxes	-	-	3.94	2.96	1.63	1.92	7.18	5.52	1.54	4.25	3.26	3.34	4.46
Breakeven Oil Price	**-**	**-**	**89.38**	**50.97**	**68.48**	**73.61**	**122.55**	**58.73**	**43.72**	**74.15**	**52.77**	**60.73**	**69.25**
Quality Differential	-	-	(2.46)	(0.07)	25.31	20.04	21.98	14.46	9.89	14.11	24.31	16.10	16.95
Required Brent Price	**-**	**-**	**86.92**	**50.90**	**93.79**	**93.66**	**144.53**	**73.19**	**53.61**	**88.26**	**77.08**	**76.83**	**86.20**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

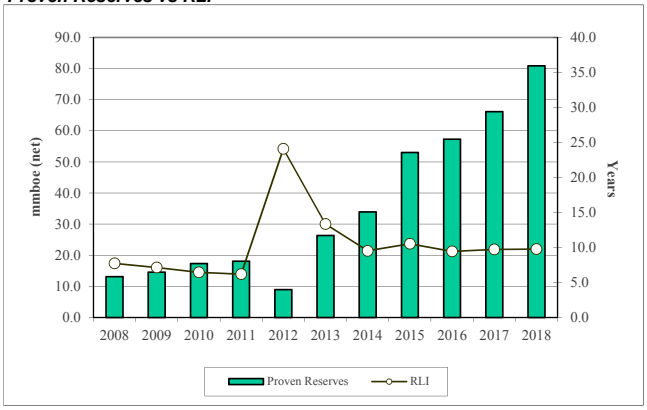
TORC Oil & Gas Ltd. (TOG - TSX)

US$, net

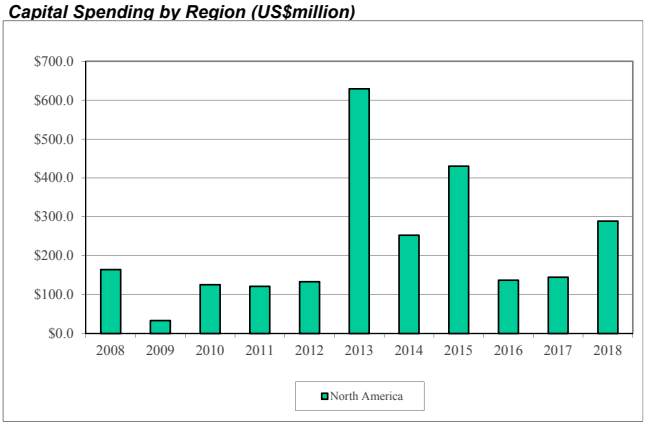
- TORC reported results of operations of $5.08/boe in 2018 versus $3.13/boe in 2017.
- F&D costs came in at $12.69/boe in 2018 compared to $9.36/boe in 2017. Excluding revisions, F&D costs came in at $16.06/boe. On a realized oil:gas price ratio basis, F&D costs were stable at $14.07/boe versus $10.63/boe the previous year, while costs for PD reserves increased to $18.96/boe from $13.65/boe last year.
- The company's 2018 operations imply a required Brent breakeven oil price of $67.75/boe on a realized ratio basis, while PD costs suggest a breakeven of $77.09/boe.
- TORC reported a return on capital employed of 1.7 % in 2018 compared to a normalized 2017 ROCE of 1.3%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

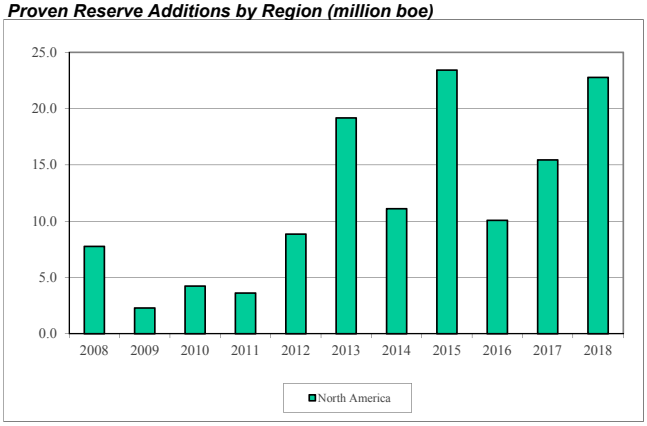
Proven Reserves vs RLI



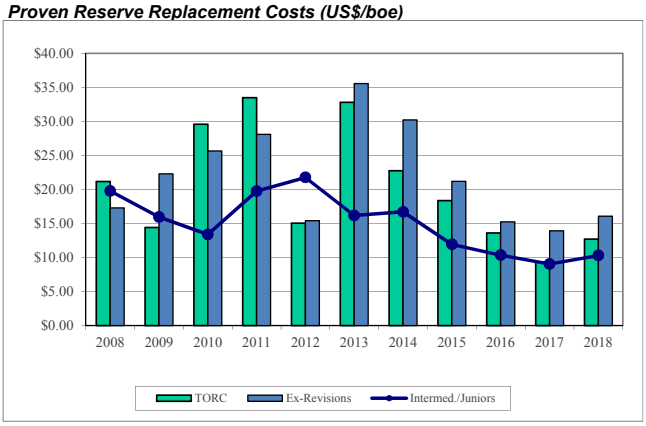
Capital Spending by Region (US$million)



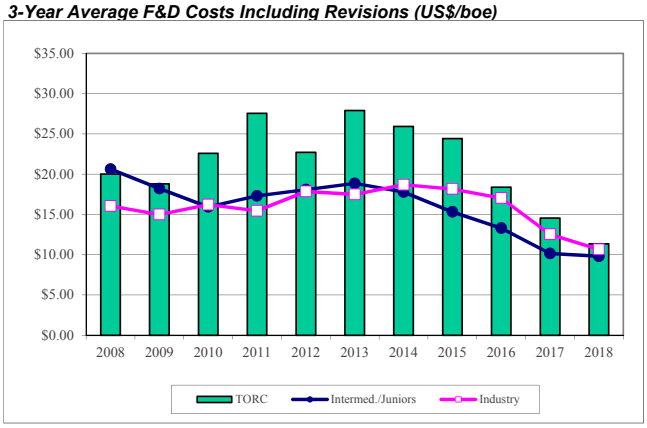
Proven Reserve Additions by Region (million boe)



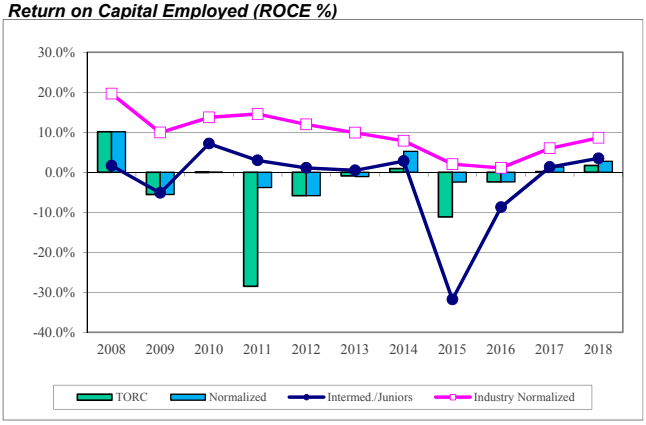
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

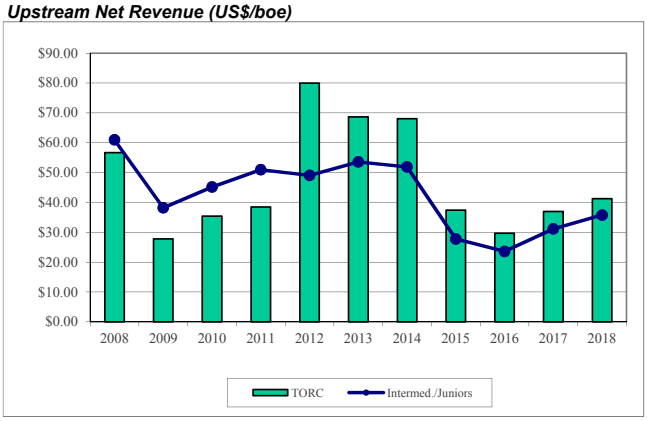
See pages F1 to F4 for analyst coverage.

TORC Oil & Gas Ltd. (TOG - TSX)

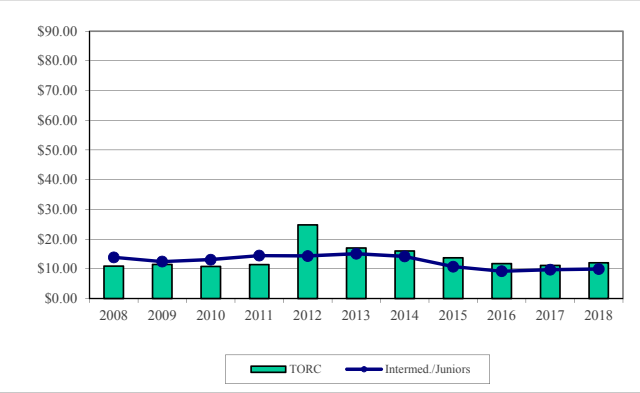
US$/boe, net

North America

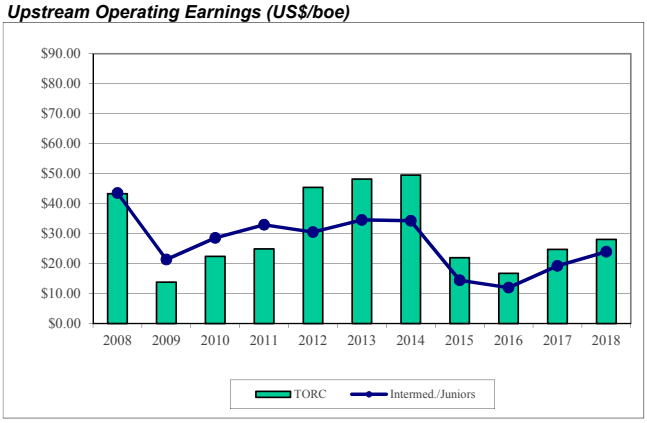
Upstream Net Revenue (US$/boe)



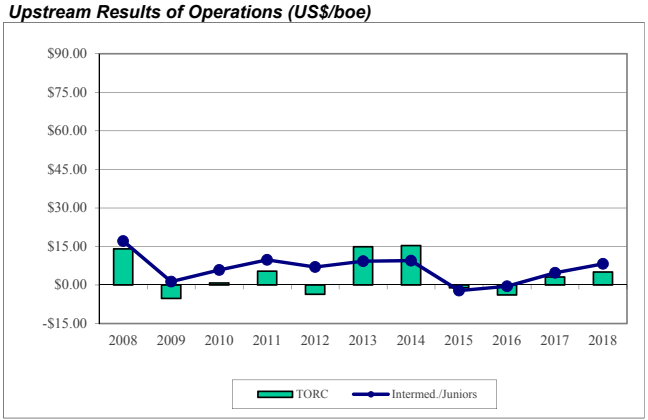
Production Costs (US$/boe)



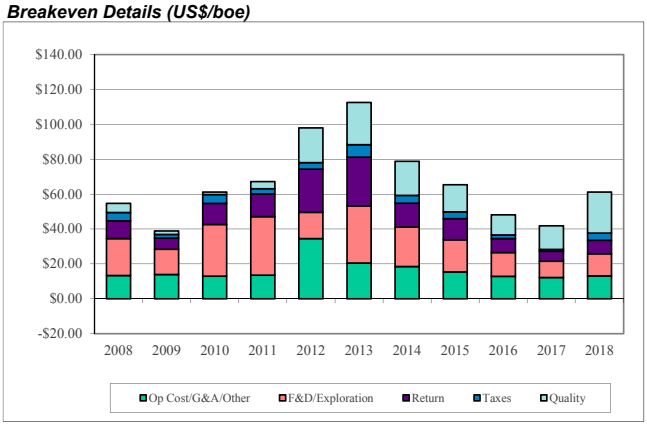
Upstream Operating Earnings (US$/boe)



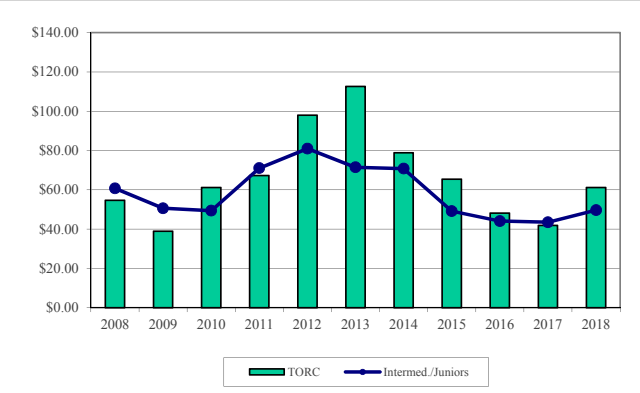
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

TORC Oil & Gas Ltd. (TOG - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	97	59	94	114	29	136	243	168	180	252	344
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(1)	(3)	1	(0)	(1)	(0)	22	1	(1)	1	(2)
Total Revenue and Other Income	96	56	95	114	29	135	265	169	179	252	342
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	19	23	29	33	9	34	57	69	71	76	100
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	4	5	6	6	4	7	9	9	7	7	9
Depreciation, Depletion and Amortization	39	42	57	53	18	58	104	118	132	143	169
Interest, net	2	4	5	7	(0)	2	8	10	11	12	16
Other	2	4	3	106	15	42	75	142	7	23	28
Earnings Before Income Tax	30	(23)	(5)	(93)	(17)	(8)	12	(178)	(48)	(10)	20
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes	10	(6)	(2)	(17)	(2)	2	6	(43)	(10)	(1)	7
Total Income Taxes	10	(6)	(2)	(17)	(2)	2	6	(43)	(10)	(1)	7
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	21	(18)	(4)	(76)	(15)	(10)	6	(135)	(38)	(8)	13
Discontinued Operations/Extraordinary Items	-	-	-	-	(4)	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	21	(18)	(4)	(76)	(19)	(10)	6	(135)	(38)	(8)	13
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	21	(18)	(4)	(76)	(19)	(10)	6	(135)	(38)	(8)	13

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	21	(18)	(4)	(76)	(15)	(10)	6	(135)	(38)	(8)	13
Charges and Credits Not Impacting Cash	48	37	55	132	16	60	176	206	122	160	196
Other	2	5	3	10	12	36	(10)	29	11	9	13
Cash Flow From Operations	71	24	55	67	13	87	171	100	94	161	222
Change in Working Capital / Other	0	(22)	5	15	(5)	(10)	9	7	1	(16)	6
Net Cash From Operating Activities	72	2	59	81	9	77	180	108	95	145	227
Total Capital Expenditures	(121)	(33)	(125)	(126)	(135)	(158)	(129)	(83)	(65)	(102)	(144)
Acquisitions, net	-	-	-	6	2	(467)	(125)	(349)	(72)	(42)	(142)
Other	15	8	11	(26)	16	31	(17)	(6)	(10)	4	15
Net Cash From Investing Activities	(106)	(25)	(114)	(147)	(117)	(595)	(271)	(438)	(146)	(141)	(271)
Net Change in Debt	17	2	16	65	(36)	83	86	39	(9)	18	72
Net Change in Common Stock	20	23	32	-	120	379	24	342	84	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	(8)	(32)	(38)	(20)	(22)	(27)
Other	(3)	(2)	7	0	(6)	-	-	(12)	(4)	-	-
Net Cash From Financing Activities	35	23	55	66	78	454	78	330	52	(4)	44
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(0)	-	-	0	(31)	(64)	(12)	-	-	-	(0)
Cash and Equivalents, Beginning of Year	-	(0)	(0)	0	111	77	12	0	0	0	0
Cash and Equivalents, End of Year	(0)	(0)	(0)	0	80	13	0	0	0	0	(0)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

TORC Oil & Gas Ltd. (TOG - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	33	32	30	235	103	49	45	25	28	36	26
Net Property, Plant and Equipment	281	253	349	148	374	1,132	1,157	1,456	1,431	1,525	1,757
Other Assets	19	18	19	6	151	-	-	2	13	9	7
Total Assets	332	303	398	389	628	1,180	1,202	1,483	1,471	1,570	1,789
Total Current Liabilities	131	111	151	216	66	107	81	78	68	65	80
Long-term Debt	-	-	-	-	-	83	163	180	165	187	259
Deferred Income Taxes	-	-	-	6	4	5	12	-	-	-	-
Other Liabilities and Deferred Credits	22	18	21	2	17	91	98	207	219	250	297
Total Liabilities	153	130	173	224	87	285	354	465	452	502	636
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	151	160	212	219	559	931	915	1,269	1,338	1,435	1,547
Contributed Surplus (Paid-in Capital)	4	8	11	15	6	12	18	16	11	13	14
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	24	5	2	(69)	(24)	(48)	(85)	(267)	(330)	(380)	(408)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	180	173	225	165	541	895	848	1,018	1,019	1,068	1,153
Total Liabilities and Shareholders' Equity	332	303	398	389	628	1,180	1,202	1,483	1,471	1,570	1,789
Return on Capital Employed (ROCE)	**10.1%**	**-5.6%**	**0.0%**	**-28.5%**	**-5.9%**	**-0.9%**	**0.9%**	**-11.1%**	**-2.4%**	**0.2%**	**1.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$56.68	$27.78	$35.43	$38.48	$79.97	$68.67	$68.03	$37.43	$29.66	$36.96	$41.25	$36.55	$40.46
Production Costs	$10.89	$11.45	$10.78	$11.41	$24.81	$17.02	$16.00	$13.70	$11.75	$11.14	$12.02	$11.66	$12.52
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$22.68	$20.72	$21.25	$18.26	$49.51	$29.47	$29.07	$23.37	$21.66	$21.06	$20.38	$20.96	$22.34
G&A / Other	$2.47	$2.53	$2.23	$2.17	$9.74	$3.48	$2.48	$1.74	$1.14	$1.09	$1.15	$1.13	$1.39
Pre-tax Results of Operations	$20.64	-$6.92	$1.16	$6.64	-$4.09	$18.70	$20.48	-$1.39	-$4.89	$3.68	$7.71	$2.80	$4.21
Income Taxes	$6.58	-$1.68	$0.34	$1.23	-$0.54	$3.81	$5.12	-$0.34	-$1.01	$0.55	$2.63	$0.69	$0.99
Results of Operations	$14.06	-$5.23	$0.82	$5.41	-$3.56	$14.89	$15.36	-$1.05	-$3.88	$3.13	$5.08	$2.11	$3.22

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

TORC Oil & Gas Ltd. (TOG - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	22.3	28.1	35.7	37.7	0.8	5.9	9.3	10.1	13.2	13.0	16.5	14.2	12.4
Liquids Production (b/d)	947	905	1,411	1,739	882	4,423	8,212	12,110	14,447	16,473	19,956	16,958	14,239
Total Production (boe/d)	4,663	5,585	7,362	8,018	1,017	5,408	9,762	13,799	16,639	18,644	22,699	19,327	16,309
% Gas Production	80%	84%	81%	78%	13%	18%	16%	12%	13%	12%	12%	12%	13%
% Oil Production	20%	16%	19%	22%	87%	82%	84%	88%	87%	88%	88%	88%	87%
Proven Reserves:													
Closing Gas Reserves (bcf)	65.4	72.9	79.3	81.3	15.4	27.9	37.5	51.5	55.7	64.6	74.8	65.0	56.8
Closing Oil Reserves (mmbbls)	2.2	2.4	4.1	4.5	6.4	21.7	27.7	44.4	48.0	55.4	68.4	57.3	48.8
Closing Total Proven Reserves (mmboe)	13.1	14.6	17.3	18.1	8.9	26.3	33.9	53.0	57.3	66.1	80.9	68.1	58.2
% Gas Reserves	83%	84%	76%	75%	29%	18%	18%	16%	16%	16%	15%	16%	16%
% Oil Reserves	17%	16%	24%	25%	71%	82%	82%	84%	84%	84%	85%	84%	84%
Proven Reserve Life Index	7.7	7.1	6.5	6.2	23.8	13.3	9.5	10.5	9.4	9.7	9.8	9.6	9.8
Proven Reserve Additions:													
Gas Additions (bcf)	39.8	10.5	14.4	15.7	15.1	15.0	13.3	17.4	8.7	13.6	15.1	37.3	68.0
Oil Additions (mmbbls)	1.1	0.5	1.8	1.0	6.3	16.7	8.9	20.5	8.6	13.2	20.3	42.1	71.5
Total Additions (mmboe)	7.8	2.3	4.2	3.6	8.8	19.2	11.1	23.4	10.1	15.4	22.8	48.3	82.8
Addition Components (mmboe):													
Extensions, Discoveries and Additions	6.8	2.2	4.7	4.7	3.0	4.0	4.4	2.3	4.4	4.9	5.1	14.3	21.1
Net Acquisitions	2.7	(0.7)	0.2	-0.3	5.6	13.7	3.9	17.9	4.6	5.5	12.9	23.1	44.9
Revisions of Estimates	(1.7)	0.8	(0.6)	(0.7)	0.2	1.5	2.7	3.1	1.1	5.1	4.8	10.9	16.8
Components as % of Total Additions:													
Extensions, Discoveries and Additions	88.0%	95.4%	111.8%	128.8%	34.2%	20.6%	39.8%	10.0%	43.6%	31.5%	22.2%	29.6%	25.5%
Net Acquisitions	34.4%	-30.8%	3.5%	-9.6%	63.3%	71.6%	35.4%	76.6%	45.7%	35.8%	56.8%	47.8%	54.3%
Revisions of Estimates	-22.4%	35.4%	-15.3%	-19.2%	2.5%	7.7%	24.7%	13.4%	10.7%	32.8%	21.0%	22.6%	20.3%
Additions as % of Production:													
Gas	488.9%	102.7%	110.7%	114.4%	nm	nm	390.9%	470.0%	180.4%	285.8%	250.9%	239.8%	300.0%
Oil	327.2%	161.8%	355.2%	155.9%	nm	nm	296.6%	464.4%	163.6%	219.2%	278.2%	226.5%	275.1%
Total	456.0%	112.3%	157.6%	123.4%	nm	nm	311.5%	465.1%	165.8%	227.0%	274.9%	228.2%	278.2%
Additions as % of Reserves:													
Gas	60.8%	14.4%	18.2%	19.3%	98.3%	53.7%	35.4%	33.7%	15.6%	21.0%	20.2%	57.4%	119.7%
Oil	50.6%	22.3%	44.7%	21.8%	99.1%	76.9%	32.1%	46.2%	18.0%	23.8%	29.6%	73.5%	146.6%
Total	59.1%	15.7%	24.5%	20.0%	98.9%	72.8%	32.7%	44.2%	17.6%	23.4%	28.2%	70.9%	142.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$11.7	$4.3	$10.5	$5.9	$1.7	$1.5	$0.5	$1.1	$0.5	$0.8	$0.9	$2.2	$3.8
Exploration & Development	$90.2	$42.8	$110.5	$120.5	$124.7	$151.8	$128.0	$81.5	$64.8	$101.6	$145.7	$312.2	$521.6
Net Acquisitions	$62.4	-$14.1	$4.3	-$5.5	$6.7	$475.8	$124.1	$347.6	$71.8	$42.2	$142.4	$256.4	$728.1
Total Expenditures	$164.3	$33.0	$125.3	$120.9	$133.0	$629.1	$252.6	$430.3	$137.1	$144.6	$289.0	$570.8	$1,253.6
Expenditures as % of Total:													
Land & Seismic	7.1%	13.1%	8.4%	4.9%	1.3%	0.2%	0.2%	0.3%	0.4%	0.5%	0.3%	0.4%	0.3%
Exploration & Development	54.9%	129.6%	88.2%	99.7%	93.7%	24.1%	50.7%	18.9%	47.3%	70.3%	50.4%	54.7%	41.6%
Net Acquisitions	38.0%	-42.7%	3.4%	-4.6%	5.0%	75.6%	49.1%	80.8%	52.3%	29.2%	49.3%	44.9%	58.1%
Cashflow (US$million)	$71.3	$24.3	$0.0	$66.6	$13.3	$86.7	$170.8	$100.3	$94.0	$160.6	$221.6	$476.2	$747.4
Cashflow (US$/boe)	$41.90	$11.90	$0.00	$22.76	$35.83	$43.93	$47.93	$19.92	$15.48	$23.61	$26.74	$22.50	$25.11
Recycle Ratio	2.0x	0.8x	0.0x	0.7x	2.4x	1.3x	2.1x	1.1x	1.1x	2.5x	2.1x	1.9x	1.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$20.01	$15.72	$29.63	$31.95	$38.91	$28.18	$17.92	$15.08	$11.94	$10.33	$14.91	$12.46	$13.87
Net Acquisition Costs	$23.38	$19.96	$28.34	$15.93	$1.19	$34.64	$31.54	$19.37	$15.61	$7.64	$11.01	$11.12	$16.20
All Sources (incl. revisions)	$21.17	$14.41	$29.59	$33.49	$15.03	$32.80	$22.75	$18.37	$13.61	$9.36	$12.69	$11.82	$15.14
Exploration & Development (excl. revisions)	$14.92	$21.54	$25.58	$27.19	$41.75	$38.78	$29.04	$35.19	$14.86	$21.08	$29.00	$21.97	$24.92
Net Acquisition Costs	$23.38	$19.96	$28.34	$15.93	$1.19	$34.64	$31.54	$19.37	$15.61	$7.64	$11.01	$11.12	$16.20
All Sources (excl. revisions)	$17.30	$22.30	$25.66	$28.10	$15.42	$35.56	$30.22	$21.20	$15.24	$13.93	$16.06	$15.27	$18.99

Source: BMO Capital Markets, Company Reports

TORC Oil & Gas Ltd. (TOG - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.89	11.45	10.78	11.41	24.81	17.02	16.00	13.70	11.75	11.14	12.02	11.66	12.52
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	2.47	2.53	2.23	2.17	9.74	3.48	2.48	1.74	1.14	1.09	1.15	1.13	1.39
F&D Costs (1-Year)	21.17	14.41	29.59	33.49	15.03	32.80	22.75	18.37	13.61	9.36	12.69	11.35	15.14
Return on Capital	10.18	6.44	12.09	13.09	24.76	27.90	13.54	12.16	8.05	5.71	7.75	6.93	9.36
Income Taxes	4.77	2.07	5.06	2.97	3.73	7.13	4.51	3.88	2.10	1.00	4.01	2.25	2.87
Breakeven Oil Price	**49.48**	**36.89**	**59.74**	**63.13**	**78.08**	**88.33**	**59.28**	**49.85**	**36.65**	**28.30**	**37.62**	**33.31**	**41.29**
Quality Differential	5.20	2.04	1.47	4.10	19.90	24.26	19.60	15.54	11.53	13.56	23.54	18.55	16.04
Required Brent Price	**54.68**	**38.93**	**61.21**	**67.23**	**97.98**	**112.59**	**78.88**	**65.38**	**48.18**	**41.86**	**61.16**	**51.86**	**57.33**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.99	19.36	20.96	25.60	27.70	19.80	17.95	14.99	13.05	12.30	13.46	12.97	13.91
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.63	4.28	4.33	4.87	10.87	4.05	2.78	1.91	1.27	1.20	1.28	1.25	1.55
F&D Costs (1-Year)	32.16	23.02	44.90	68.89	19.36	36.48	26.34	20.11	15.28	10.63	14.07	12.70	16.91
Return on Capital	15.14	10.31	19.10	28.15	27.29	31.35	15.26	12.88	8.79	6.20	8.28	7.41	10.07
Income Taxes	7.09	3.32	8.00	6.38	4.11	8.01	5.09	4.11	2.29	1.09	4.28	2.24	3.14
Breakeven Oil Price	**74.00**	**60.28**	**97.29**	**133.89**	**89.34**	**99.70**	**67.42**	**53.98**	**40.67**	**31.42**	**41.38**	**36.56**	**45.58**
Quality Differential	7.64	3.45	2.85	9.19	22.22	28.23	21.98	17.00	12.81	14.97	26.37	18.05	18.62
Required Brent Price	**81.64**	**63.73**	**100.14**	**143.07**	**111.56**	**127.92**	**89.40**	**70.98**	**53.48**	**46.39**	**67.75**	**54.61**	**64.20**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	15.99	19.36	20.96	25.60	27.70	19.80	17.95	14.99	13.05	12.30	13.46	12.97	13.91
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	3.63	4.28	4.33	4.87	10.87	4.05	2.78	1.91	1.27	1.20	1.28	1.25	1.55
F&D Costs (1-Year)	60.95	22.16	54.73	63.82	107.14	43.35	40.03	24.53	18.36	13.65	18.96	16.78	23.11
Return on Capital	28.75	9.93	23.28	26.14	145.83	37.23	23.39	15.74	10.56	7.95	11.22	9.80	13.75
Income Taxes	13.46	3.19	9.74	5.92	21.97	9.52	7.80	5.02	2.75	1.39	5.80	2.96	4.29
Breakeven Oil Price	**122.79**	**58.92**	**113.05**	**126.36**	**313.51**	**113.95**	**91.94**	**62.19**	**45.99**	**36.49**	**50.72**	**43.76**	**56.59**
Quality Differential	7.64	3.45	2.85	9.19	22.22	28.23	21.98	17.00	12.81	14.97	26.37	18.05	18.62
Required Brent Price	**130.43**	**62.37**	**115.90**	**135.54**	**335.73**	**142.18**	**113.92**	**79.18**	**58.79**	**51.46**	**77.09**	**61.81**	**75.22**

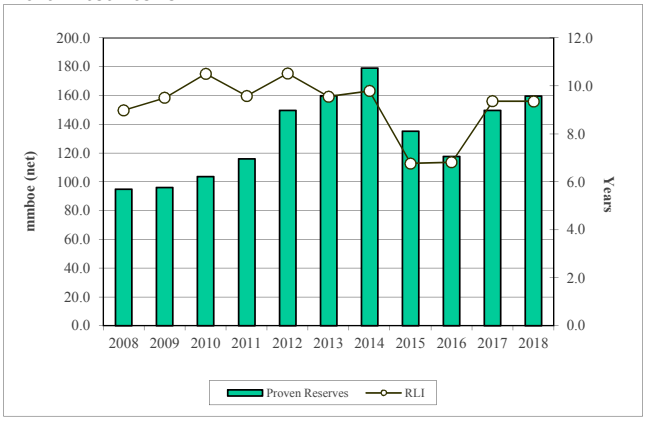
Source: BMO Capital Markets, Company Reports

Unit Corp. (UNT - NYSE)

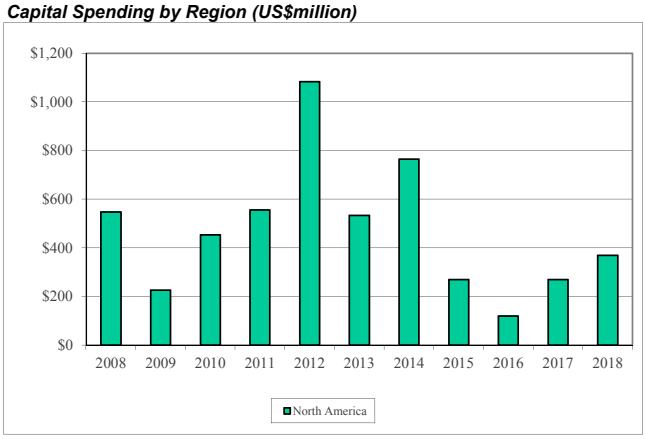
US$, net

- Unit Corp yielded results of operations of $7.14/boe compared to $5.45/boe in 2017.
- One-year F&D costs came in higher at $13.08/boe versus $5.60/boe ($7.34/boe ex-revisions) last year. On a realized oil:gas price ratio basis, F&D costs jumped to $19.29/boe from $9.92/boe, while costs for PD reserves increased to $31.28/boe from $19.33/boe.
- Unit's 2018 operations suggest a required Brent breakeven oil price of $72.23/boe on total proved reserves, while its PD cost assessment suggests a breakeven oil price of $93.59/boe.
- The company reported a loss on capital employed of 1.0% in 2018.

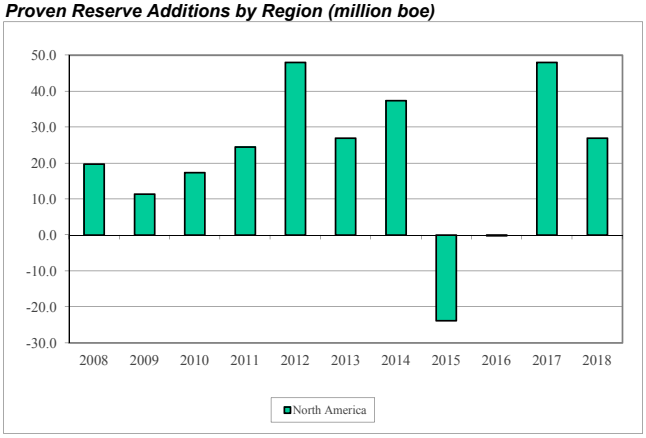
Proven Reserves vs RLI



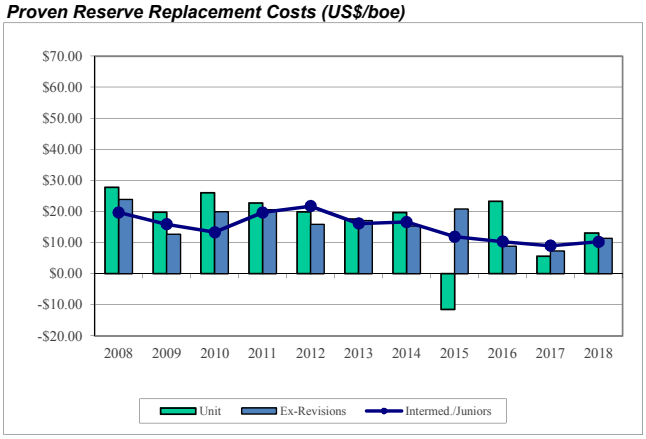
Capital Spending by Region (US$million)



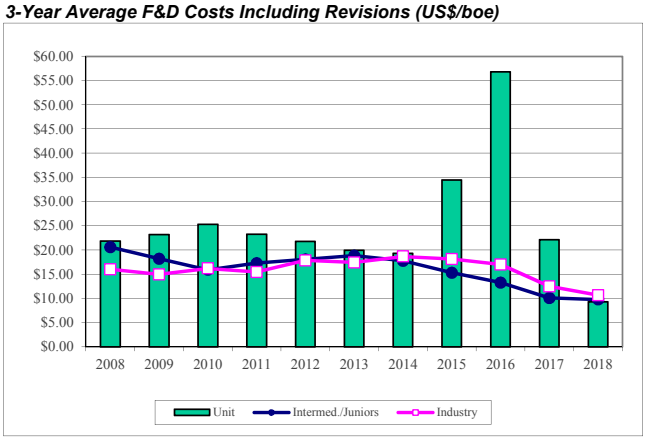
Proven Reserve Additions by Region (million boe)



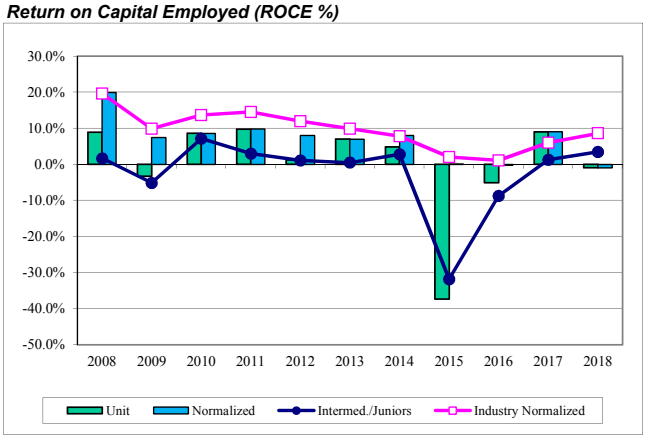
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

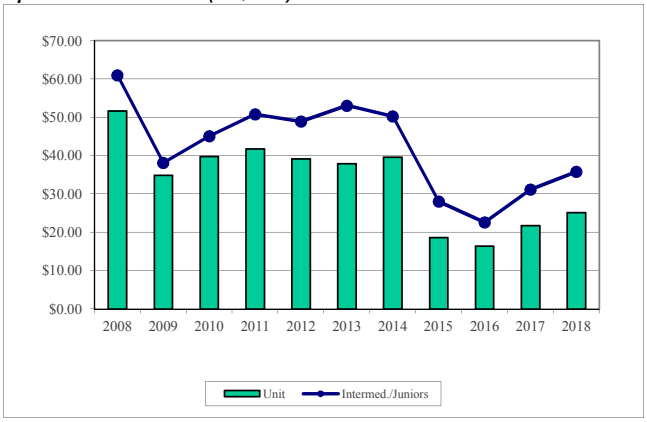
See pages F1 to F4 for analyst coverage.

Unit Corp. (UNT - NYSE)

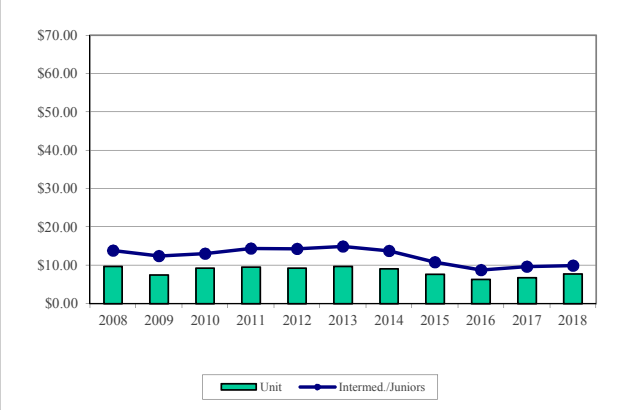
US$/boe, net

North America

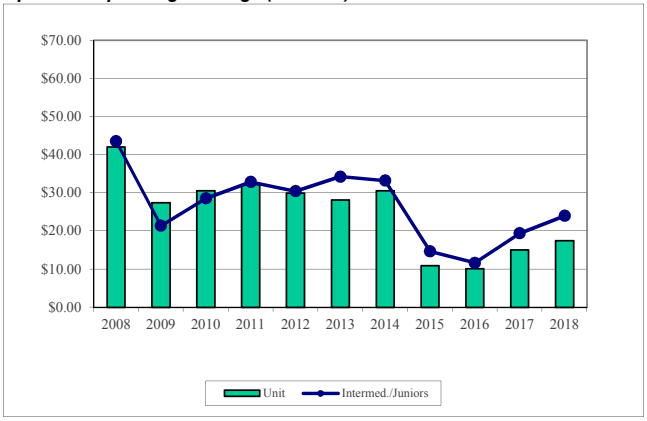
Upstream Net Revenue (US$/boe)



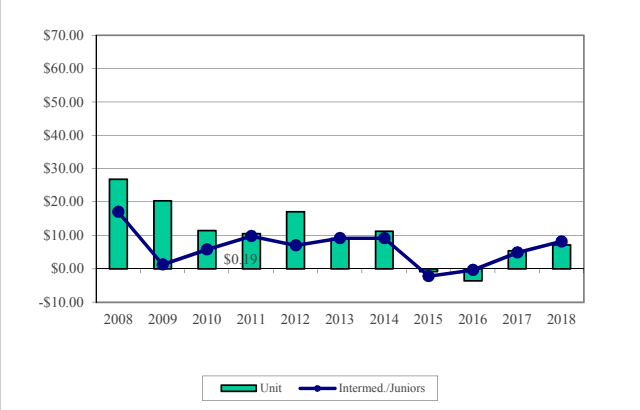
Production Costs (US$/boe)



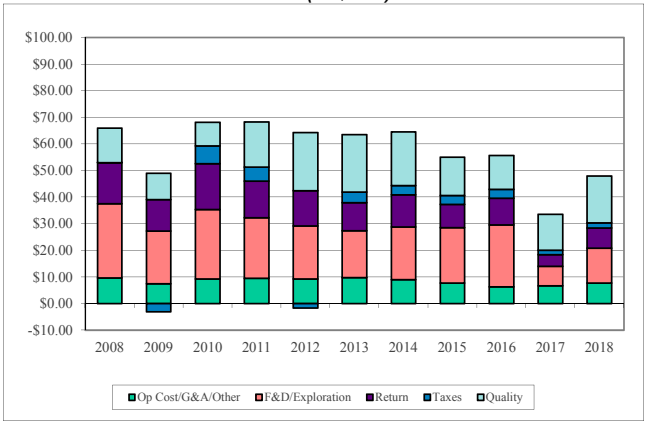
Upstream Operating Earnings (US$/boe)



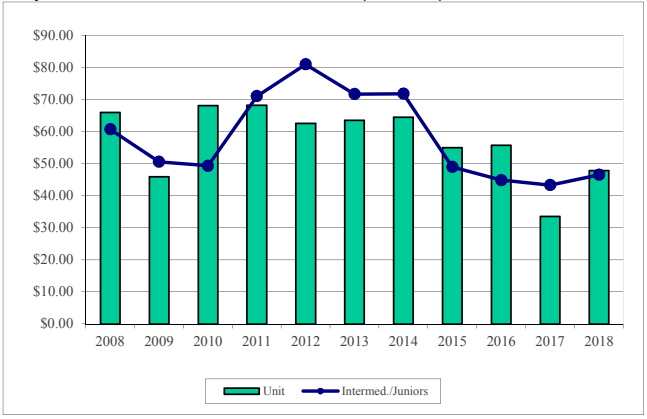
Upstream Results of Operations (US$/boe)



Breakeven Details - North America (US$/boe)



Required Brent Oil Price - North America (US$/boe)



Source: BMO Capital Markets, Company Reports

Unit Corp. (UNT - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	554	358	401	516	568	650	740	386	294	358	423
Midstream / Downstream Revenue	181	109	155	208	217	287	356	203	186	207	224
Other	623	243	327	484	530	415	477	266	122	175	196
Total Revenue and Other Income	1,358	710	882	1,208	1,315	1,352	1,573	854	602	740	843
Crude Oil and Product Purchases	-	-	-	-	-	-					
Production and Transportation Expenses	580	316	414	576	627	675	770	484	346	409	431
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	25	24	26	30	33	38	42	35	33	38	39
Depreciation, Depletion and Amortization	244	176	204	279	317	331	483	352	208	209	244
Interest, net	1	1	-	4	14	15	17	32	40	38	33
Other	282	281	-	-	285	(9)	38	1,615	182	(15)	150
Earnings Before Income Tax	226	(88)	237	319	39	301	223	(1,664)	(207)	60	(54)
Current Income Taxes	41	(0)	(10)	(2)	1	16	9	(21)	0	0	(3)
Future Income Taxes	41	(32)	101	126	16	101	77	(606)	(71)	(58)	(11)
Total Income Taxes	82	(32)	91	123	16	117	87	(627)	(71)	(58)	(14)
Minority Interest	-	-								-	(6)
Earnings From Continuing Operations	144	(56)	146	196	23	185	136	(1,037)	(136)	118	(45)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	144	(56)	146	196	23	185	136	(1,037)	(136)	118	(45)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	144	(56)	146	196	23	185	136	(1,037)	(136)	118	(45)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	144	(56)	146	196	23	185	136	(1,037)	(136)	118	(45)
Charges and Credits Not Impacting Cash	568	426	306	406	618	435	640	1,383	299	152	381
Other	19	10	2	17	23	19	(133)	52	43	21	15
Cash Flow From Operations	730	381	454	619	665	638	643	398	206	290	350
Change in Working Capital / Other	(40)	110	(64)	(10)	26	36	66	49	34	(11)	(2)
Net Cash From Operating Activities	690	490	390	608	691	674	709	447	240	280	348
Upstream Spending	(782)	(317)	(484)	(729)	(762)	(704)	(981)	(561)	(186)	(269)	(446)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-		
Acquisitions, net	(24)	45	(52)	(40)	(317)	121	60	12	74	(36)	(4)
Other	-		-	-	-	4	0	-	1	(2)	-
Net Cash From Investing Activities	(806)	(272)	(536)	(768)	(1,079)	(579)	(921)	(550)	(111)	(307)	(450)
Net Change in Debt	112	(170)	133	(113)	21	(71)	166	115	(120)	14	(182)
Net Change in Common Stock	-	-	-	-	-	-	-	-	-	19	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-		
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	4	(48)	13	272	367	(6)	28	(12)	(9)	(5)	290
Net Cash From Financing Activities	116	(218)	146	159	388	(78)	194	103	(129)	27	108
Effect of Exchange Rate on Cash	-	-	-								
Net Increase/(Decrease) in Cash	(0)	1	0	(1)	0	18	(18)	(0)	0	(0)	6
Cash and Equivalents, Beginning of Year	1	1	1	1	1	1	19	1	1	1	1
Cash and Equivalents, End of Year	1	1	1	1	1	19	1	1	1	1	6.5

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Unit Corp. (UNT - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	287	128	188	228	196	212	252	140	121	120	175
Net Property, Plant and Equipment	2,202	2,014	2,400	2,942	3,477	3,723	4,133	2,581	2,281	2,383	2,432
Other Assets	94	87	81	86	88	88	88	87	77	79	91
Total Assets	2,582	2,228	2,669	3,257	3,761	4,022	4,474	2,809	2,479	2,581	2,698
Total Current Liabilities	196	105	147	213	207	244	304	151	165	182	214
Long-term Debt	200	30	163	300	716	646	812	928	801	820	644
Deferred Income Taxes	477	446	556	683	696	801	876	276	216	133	145
Other Liabilities and Deferred Credits	76	81	92	114	168	158	149	141	103	100	102
Total Liabilities	949	663	959	1,310	1,787	1,849	2,141	1,495	1,285	1,236	1,105
Minority Interests	-	-	-	-	-	-	-	-	-	-	203
Common Shares	9	9	9	10	10	10	10	10	10	10	10
Contributed Surplus (Paid-in Capital)	367	384	394	408	424	445	468	487	503	536	628
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	1,223	1,168	1,314	1,510	1,534	1,718	1,855	817	682	799	753
Other / Comprehensive Income (Loss)	33	4	(7)	19	8	-	-	-	-	0	(0)
Total Shareholders' Equity	1,633	1,566	1,711	1,947	1,974	2,173	2,332	1,314	1,194	1,346	1,391
Total Liabilities and Shareholders' Equity	2,582	2,228	2,669	3,257	3,761	4,022	4,474	2,809	2,479	2,581	2,698
Return on Capital Employed (ROCE)	**8.9%**	**-3.3%**	**8.6%**	**9.8%**	**1.3%**	**7.0%**	**4.9%**	**-37.4%**	**-5.1%**	**9.0%**	**-1.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$51.69	$34.85	$39.77	$41.71	$39.14	$37.88	$39.58	$18.58	$16.37	$21.71	$25.14	$21.04	$24.31
Production Costs	$9.68	$7.43	$9.24	$9.54	$9.23	$9.73	$9.04	$7.64	$6.30	$6.71	$7.69	$6.90	$7.51
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$15.02	$11.24	$11.94	$15.04	$14.68	$13.31	$14.80	$12.28	$15.56	$6.03	$7.79	$9.90	$11.45
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Earnings	$27.00	$16.18	$18.58	$17.14	$15.23	$14.84	$15.74	-$1.33	-$5.50	$8.98	$9.66	$4.24	$5.36
Income Taxes	$0.11	-$4.27	$7.11	$6.62	-$1.93	$5.74	$4.49	-$0.50	-$1.89	$3.52	$2.51	$1.32	$1.56
Net Earnings	$26.89	$20.44	$11.48	$10.52	$17.17	$9.10	$11.25	-$0.83	-$3.61	$5.45	$7.14	$2.92	$3.79

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$51.69	$34.85	$39.77	$41.71	$39.14	$37.88	$39.58	$18.58	$16.37	$21.71	$25.14	$21.04	$24.31
Production Costs	$9.68	$7.43	$9.24	$9.54	$9.23	$9.73	$9.04	$7.64	$6.30	$6.71	$7.69	$6.90	$7.51
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$15.02	$11.24	$11.94	$15.04	$14.68	$13.31	$14.80	$12.28	$15.56	$6.03	$7.79	$9.90	$11.45
G&A/Other	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
Pre-tax Results of Operations	$27.00	$16.18	$18.58	$17.14	$15.23	$14.84	$15.74	-$1.33	-$5.50	$8.98	$9.66	$4.24	$5.36
Income Taxes	$0.11	-$4.27	$7.11	$6.62	-$1.93	$5.74	$4.49	-$0.50	-$1.89	$3.52	$2.51	$1.32	$1.56
Results of Operations	$26.89	$20.44	$11.48	$10.52	$17.17	$9.10	$11.25	-$0.83	-$3.61	$5.45	$7.14	$2.92	$3.79

Source: BMO Capital Markets, Company Reports

Unit Corp. (UNT - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	130.1	120.7	111.7	120.8	134.1	155.5	161.2	179.6	152.7	140.4	152.4	148.5	157.3
Liquids Production (b/d)	7,258	7,600	8,411	13,014	16,644	19,929	23,214	24,814	21,885	20,416	21,367	21,223	22,339
Total Production (boe/d)	28,935	27,720	27,021	33,153	38,986	45,845	50,088	54,743	47,335	43,823	46,768	45,975	48,551
% Gas Production	75%	73%	69%	61%	57%	57%	54%	55%	54%	53%	54%	54%	54%
% Oil Production	25%	27%	31%	39%	43%	43%	46%	45%	46%	47%	46%	46%	46%
Proven Reserves:													
Gas Reserves (bcf)	450.1	419.1	420.5	442.1	555.6	581.8	647.0	484.9	405.6	508.7	536.0	483.4	516.4
Oil Reserves (mmbbls)	19.9	26.3	33.6	42.3	57.2	63.0	71.2	54.4	50.2	65.0	70.4	61.8	62.2
Total Proven Reserves (mmboe)	94.9	96.2	103.7	116.0	149.8	159.9	179.0	135.2	117.8	149.8	159.7	142.4	148.3
% Gas Reserves	79%	73%	68%	64%	62%	61%	60%	60%	57%	57%	56%	57%	58%
% Oil Reserves	21%	27%	32%	36%	38%	39%	40%	40%	43%	43%	44%	43%	42%
Proven Reserve Life Index	9.0	9.5	10.5	9.6	10.5	9.6	9.8	6.8	6.8	9.4	9.4	8.5	8.4
Proven Reserve Additions:													
Gas Additions (bcf)	78.0	13.0	42.2	65.8	162.4	82.9	124.0	-96.5	-23.6	154.3	82.9	213.7	241.2
Oil Additions (mmbbls)	6.7	9.2	10.4	13.5	20.9	13.1	16.7	-7.7	3.7	22.3	13.2	39.2	48.2
Total Additions (mmboe)	19.7	11.4	17.4	24.4	48.0	26.9	37.4	-23.8	-0.2	48.0	27.0	74.8	88.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	20.6	17.6	20.9	19.6	30.4	31.2	49.3	13.0	13.2	31.1	29.7	74.0	136.3
Acquisitions	2.3	0.1	1.8	7.4	37.5	0.0	0.4	0.0	0.3	5.8	2.7	8.7	9.1
Dispositions	0.0	0.0	0.0	0.0	-6.3	-3.5	-1.4	-0.2	-5.3	-0.3	-1.3	(6.9)	(8.5)
Revisions of Estimates	(3.2)	(6.3)	(5.3)	(2.6)	(13.6)	(0.9)	(10.9)	(36.6)	(8.3)	11.4	(4.2)	(1.0)	(48.5)
Components as % of Total Additions:													
Extensions, Discoveries and Additions	104.4%	154.9%	120.2%	80.4%	63.3%	116.1%	132.0%	-54.4%	-7263.3%	64.8%	110.1%	98.9%	154.2%
Acquisitions	11.7%	0.5%	10.3%	30.2%	78.2%	0.0%	1.0%	0.0%	-144.2%	12.0%	10.0%	11.7%	10.3%
Dispositions	0.0%	0.0%	0.0%	0.0%	-13.1%	-12.9%	-3.8%	0.8%	2938.5%	-0.7%	-4.6%	-9.2%	-9.6%
Revisions of Estimates	-16.0%	-55.4%	-30.4%	-10.6%	-28.4%	-3.2%	-29.2%	153.6%	4569.0%	23.8%	-15.4%	-1.4%	-54.9%
Additions as % of Production:													
Gas	164.3%	29.5%	103.5%	149.1%	332.0%	146.1%	210.7%	-147.3%	-42.3%	301.1%	149.1%	131.4%	84.0%
Oil	252.7%	332.6%	337.4%	283.8%	344.0%	179.8%	197.1%	-85.2%	46.9%	298.9%	168.7%	168.6%	118.1%
Total	186.5%	112.6%	176.3%	202.0%	337.1%	160.7%	204.4%	-119.2%	-1.1%	300.1%	158.0%	148.6%	99.7%
Additions as % of Reserves:													
Gas	17.3%	3.1%	10.0%	14.9%	29.2%	14.2%	19.2%	-19.9%	-5.8%	30.3%	15.5%	44.2%	46.7%
Oil	33.7%	35.1%	30.8%	31.8%	36.6%	20.8%	23.5%	-14.2%	7.5%	34.3%	18.7%	63.3%	77.4%
Total	20.8%	11.8%	16.8%	21.1%	32.0%	16.8%	20.9%	-17.6%	-0.2%	32.0%	16.9%	52.5%	59.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$41.5	$30.5	$48.3	$43.8	$46.5	$33.4	$68.8	$19.2	$17.3	$14.8	$15.9	$48.0	$136.1
Development	$351.9	$154.6	$279.9	$391.9	$390.6	$424.3	$615.3	$208.8	$80.6	$160.9	$280.7	$522.2	$1,346.3
Acquisitions	$154.3	$40.9	$125.7	$121.0	$646.1	$76.3	$81.8	$42.0	$22.2	$94.7	$72.6	$189.5	$313.2
Dispositions	na	na	na	na	na	na	na	na	na	$0.0	$0.0	na	na
Total Expenditures	$547.7	$226.0	$453.9	$556.7	$1,083.3	$534.0	$765.8	$270.0	$120.1	$270.4	$369.2	$759.8	$1,795.6
Expenditures as % of Total:													
Exploration	7.6%	13.5%	10.6%	7.9%	4.3%	6.2%	9.0%	7.1%	14.4%	5.5%	4.3%	6.3%	7.6%
Development	64.2%	68.4%	61.7%	70.4%	36.1%	79.5%	80.3%	77.3%	67.1%	59.5%	76.0%	68.7%	75.0%
Acquisitions	28.2%	18.1%	27.7%	21.7%	59.6%	14.3%	10.7%	15.5%	18.5%	35.0%	19.7%	24.9%	17.4%
Cashflow (US$million)	$442.6	$320.5	$231.0	$309.3	$453.1	$374.9	$476.2	$228.8	$206.6	$183.6	$254.9	$645.1	$1,350.1
Cashflow (US$/boe)	$41.91	$31.68	$23.42	$25.56	$31.84	$22.40	$26.05	$11.45	$11.96	$11.48	$14.93	$12.81	$15.24
Recycle Ratio	1.5x	1.6x	0.9x	1.1x	1.6x	1.3x	1.3x	-1.0x	0.5x	2.1x	1.1x	1.4x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$22.61	$16.33	$21.04	$25.56	$26.12	$15.08	$17.81	-$9.66	$20.00	$4.13	$11.62	$7.82	$16.89
Acquisition Costs	$67.20	$729.63	$70.10	$16.37	$17.23	nm	$212.19	na	$84.88	$16.41	$26.82	$21.69	$34.34
All Sources (incl. revisions)	$27.81	$19.84	$26.10	$22.78	$19.97	$17.59	$19.74	-$11.43	$23.30	$5.60	$13.08	$9.30	$18.53
Exploration & Development (excl. revisions)	$19.14	$10.49	$15.71	$22.18	$14.40	$14.66	$13.87	$17.60	$7.42	$5.65	$9.99	$7.71	$10.88
Acquisition Costs	$67.20	$729.63	$70.10	$16.37	$17.23	nm	$212.19	na	$84.88	$16.41	$26.82	$21.69	$34.34
All Sources (excl. revisions)	$23.97	$12.76	$20.01	$20.59	$15.96	$17.10	$15.41	$20.84	$8.93	$7.34	$11.40	$9.18	$12.35

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Unit Corp. (UNT - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	9.68	7.43	9.24	9.54	9.23	9.73	9.04	7.64	6.30	6.71	7.69	6.90	7.51
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	27.81	19.84	26.10	22.78	19.97	17.59	19.74	20.84	23.30	7.34	13.08	14.57	16.86
Return on Capital	15.47	11.82	17.28	13.66	13.21	10.54	12.11	8.86	9.96	4.31	7.60	7.69	8.88
Income Taxes	0.06	(3.12)	6.61	5.27	(1.68)	4.08	3.45	3.34	3.43	1.69	1.98	2.40	2.59
Breakeven Oil Price	**53.02**	**35.97**	**59.22**	**51.25**	**40.74**	**41.94**	**44.35**	**40.67**	**42.99**	**20.04**	**30.35**	**31.57**	**35.85**
Quality Differential	12.97	9.95	8.91	17.04	21.83	21.62	20.21	14.31	12.73	13.50	17.54	14.59	15.66
Required Brent Price	**66.00**	**45.92**	**68.14**	**68.29**	**62.56**	**63.56**	**64.56**	**54.98**	**55.72**	**33.54**	**47.89**	**46.16**	**51.51**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.36	11.82	15.23	16.21	16.33	15.70	13.12	10.15	8.31	9.11	11.56	9.59	10.42
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	36.73	21.97	33.92	32.72	32.59	26.74	28.99	27.96	26.10	9.92	19.29	18.44	22.45
Return on Capital	20.21	13.08	22.72	20.01	20.20	15.50	17.57	11.54	10.94	5.69	11.12	9.63	11.92
Income Taxes	8.66	5.60	14.07	12.58	8.66	9.79	7.01	6.97	5.74	3.68	3.91	4.80	5.92
Breakeven Oil Price	**78.97**	**52.48**	**85.94**	**81.52**	**77.78**	**67.73**	**66.69**	**56.62**	**51.10**	**28.41**	**45.88**	**42.46**	**50.72**
Quality Differential	17.91	15.81	14.69	28.97	38.60	34.89	29.32	19.03	16.80	18.33	26.35	20.49	21.97
Required Brent Price	**96.88**	**68.29**	**100.63**	**110.49**	**116.38**	**102.62**	**96.01**	**75.65**	**67.90**	**46.74**	**72.23**	**62.95**	**72.68**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.36	11.82	15.23	16.21	16.33	15.70	13.12	10.15	8.31	9.11	11.56	9.59	10.42
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	-	-	-	-	-	-	-	-	-
F&D Costs (1-Year)	39.05	23.78	67.56	17.40	42.19	31.88	33.15	19.06	23.85	19.33	31.28	24.82	25.33
Return on Capital	21.48	14.10	45.24	10.12	26.13	18.22	19.21	7.81	10.00	11.08	18.05	12.95	12.93
Income Taxes	9.21	6.04	28.03	6.36	11.20	11.50	7.66	4.72	5.25	7.16	6.35	6.45	6.42
Breakeven Oil Price	**83.09**	**55.75**	**156.06**	**50.08**	**95.85**	**77.31**	**73.13**	**41.75**	**47.41**	**46.68**	**67.24**	**53.81**	**55.10**
Quality Differential	17.91	15.81	14.69	28.97	38.60	34.89	29.32	19.03	16.80	18.33	26.35	20.49	21.97
Required Brent Price	**101.00**	**71.56**	**170.75**	**79.05**	**134.45**	**112.19**	**102.45**	**60.78**	**64.21**	**65.01**	**93.59**	**74.31**	**77.07**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

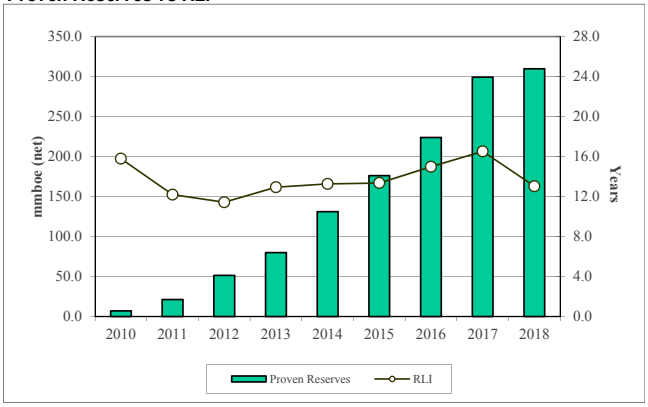
Whitecap Resources Inc. (WCP - TSX)

US$, net

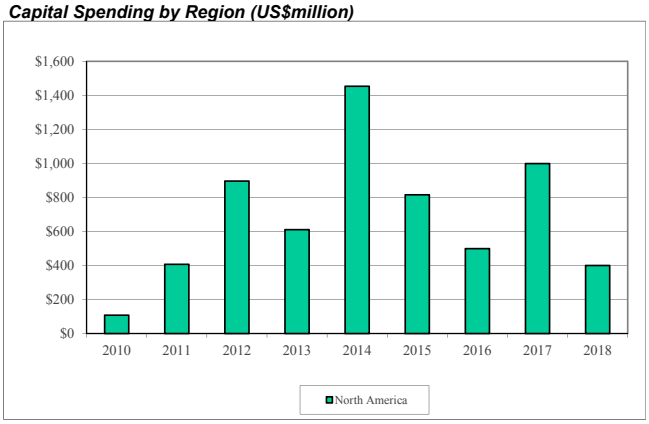
- Whitecap reported results of operations of $6.54/boe compared to $5.27/boe in 2017.
- One-year F&D costs came in at $13.22/boe, up from $10.04/boe last year. On a realized oil:gas price ratio basis, the F&D costs were $14.48/boe versus $10.39/boe last year, while the costs for PD reserves increased to $15.35/boe from $13.94/boe.
- The company's 2018 operations suggest a required Brent breakeven oil price of $73.51/boe on a realized ratio basis on total proved reserves, while PD costs imply a breakeven of $75.46/boe.
- The company reported ROCE of 2.2% in compared to a normalized 2017 ROCE of 3.9%.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

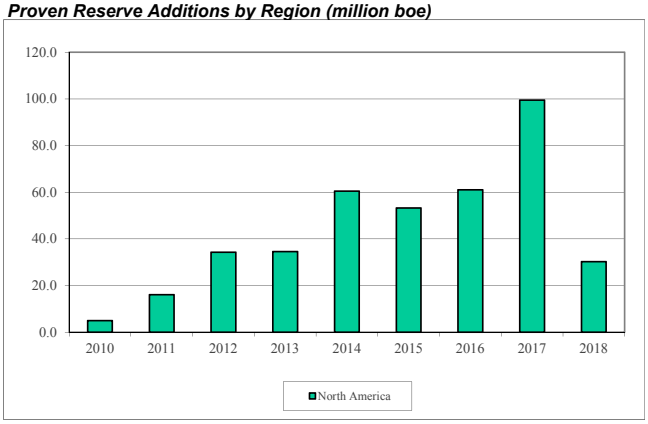
Proven Reserves vs RLI



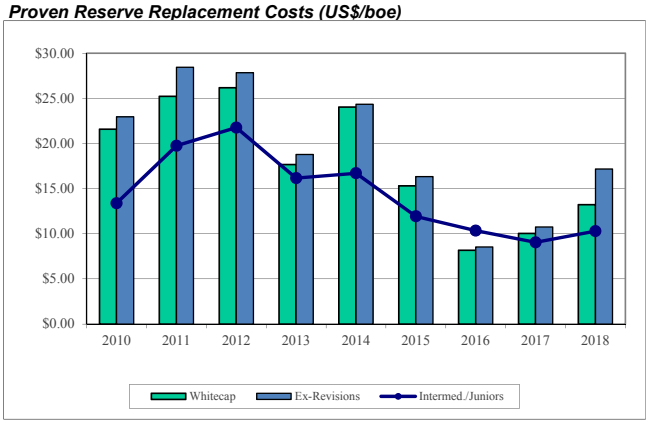
Capital Spending by Region (US$million)



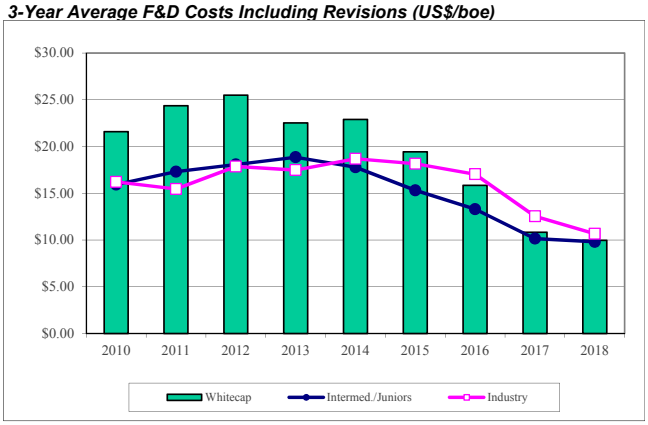
Proven Reserve Additions by Region (million boe)



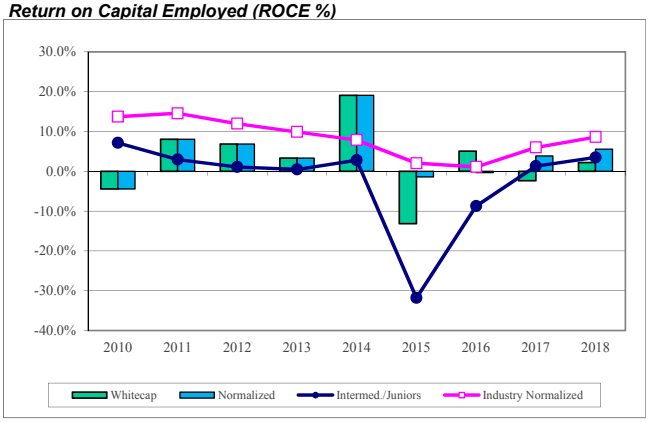
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

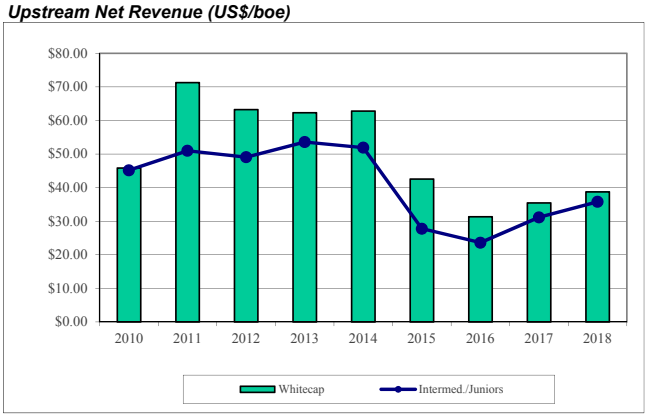
See pages F1 to F4 for analyst coverage.

Whitecap Resources Inc. (WCP - TSX)

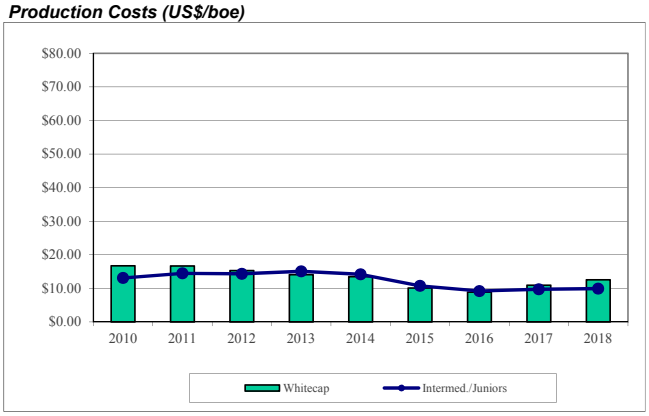
US$/boe, net

North America

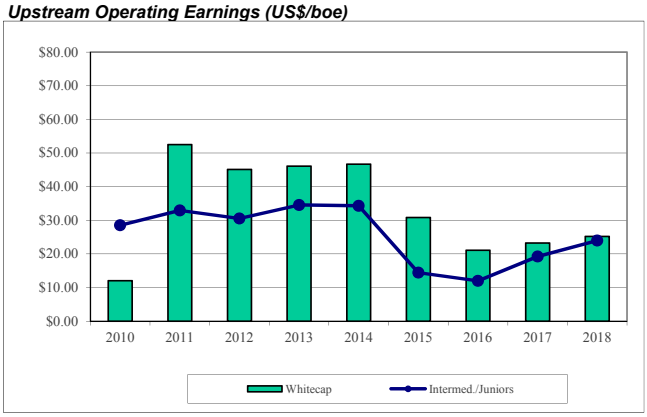
Upstream Net Revenue (US$/boe)



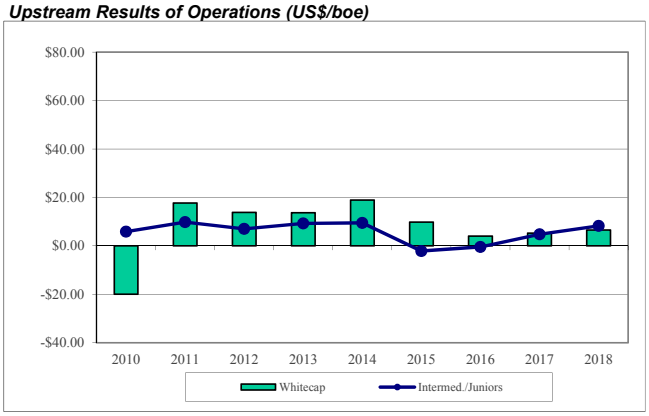
Production Costs (US$/boe)



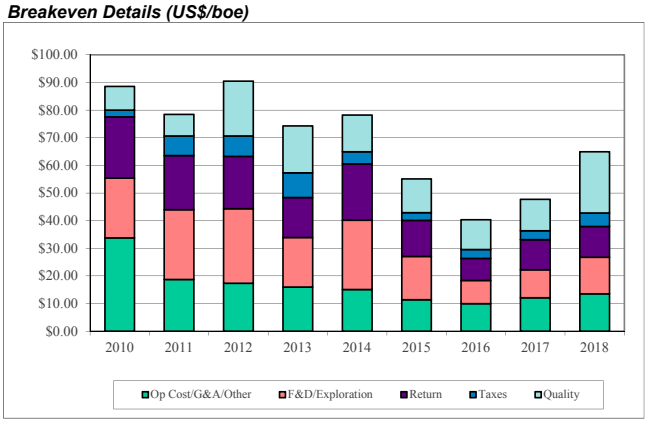
Upstream Operating Earnings (US$/boe)



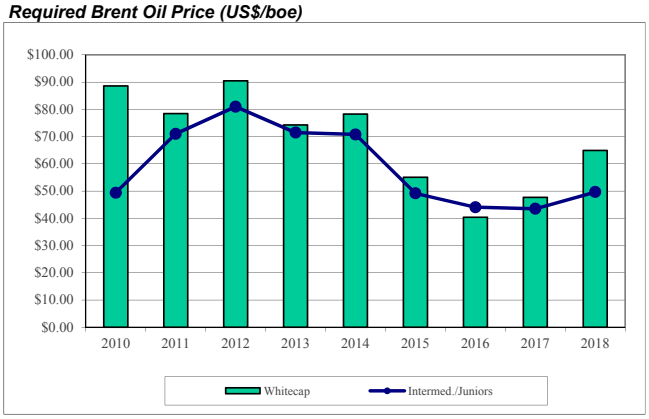
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Whitecap Resources Inc. (WCP - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	21	121	271	396	640	423	411	661	970
Midstream / Downstream Revenue	-	-	0	1	-	-	-	-	-	-	-
Other	-	-	(1)	3	32	(56)	155	(45)	(6)	41	45
Total Revenue and Other Income	-	-	20	125	303	340	795	377	405	702	1,015
	-	-	-	-	-	-	-	-	-	-	-
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	8
Production and Transportation Expenses	-	-	7	29	69	87	133	133	132	198	298
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	4	2	10	4	4	2	1
General and Administrative	-	-	7	4	9	12	16	17	16	21	23
Depreciation, Depletion and Amortization	-	-	15	50	116	148	234	250	231	298	376
Interest, net	-	-	2	5	13	15	30	33	22	23	41
Other	-	-	-	3	19	13	(127)	416	(181)	285	197
Earnings Before Income Tax	-	-	(11)	35	73	64	499	(476)	181	(124)	72
Current Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Future Income Taxes (Recovery)	-	-	(2)	9	20	24	89	(84)	52	(28)	22
Total Income Taxes	-	-	(2)	9	20	24	89	(84)	52	(28)	22
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	(9)	26	53	39	410	(392)	129	(96)	50
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	(9)	26	53	39	410	(392)	129	(96)	50
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	(9)	26	53	39	410	(392)	129	(96)	50

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	(9)	26	53	39	410	(392)	129	(96)	50
Charges and Credits Not Impacting Cash	-	-	13	59	140	174	323	959	(147)	537	567
Other	-	-	8	2	(4)	58	(297)	(190)	309	(49)	(74)
Cash Flow From Operations	-	-	11	87	188	271	436	377	291	392	544
Change in Working Capital / Other	-	-	(5)	(7)	(15)	1	(12)	18	(15)	(15)	18
Net Cash From Operating Activities	-	-	6	80	174	272	425	395	276	377	562
Total Capital Expenditures			(91)	(184)	(250)	(185)	(294)	(184)	(132)	(262)	(340)
Acquisitions, net	-	-	-	(174)	(234)	(390)	(896)	(181)	(388)	(727)	(66)
Other			13	20	14	(40)	28	3	9	(12)	0
Net Cash From Investing Activities			(78)	(338)	(470)	(615)	(1,162)	(362)	(510)	(1,001)	(405)
Net Change in Debt			7	115	180	70	338	43	(78)	394	(22)
Net Issuance of Shares			82	143	117	354	546	88	406	309	(33)
Net Change in Preferred Stock/Convertibles			-	-	-	-	-	-	-	-	-
Cash Dividends Paid			-	-	-	(90)	(154)	(167)	(88)	(81)	(102)
Other			(16)	-	-	9	6	2	(6)	1	1
Net Cash From Financing Activities			72	258	297	343	737	(33)	236	623	(156)
Effect of Exchange Rate on Cash			-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash			0	0	(0)	(0)	0	0	2	0	0
Cash and Equivalents, Beginning of Year			0	0	0	(0)	0	0	0	0	0
Cash and Equivalents, End of Year			0	0	0	(0)	0	0	2	0	0

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Whitecap Resources Inc. (WCP - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	11	34	82	65	221	117	84	125	160
Net Property, Plant and Equipment	-	-	191	571	1,327	1,834	3,083	3,042	3,561	4,122	4,014
Other Assets	-	-	-	44	87	95	200	116	234	350	425
Total Assets	-	-	201	649	1,497	1,994	3,504	3,276	3,879	4,597	4,599
Total Current Liabilities	-	-	41	68	105	110	132	130	175	171	137
Long-term Debt	-	-	-	132	311	372	685	686	584	990	969
Deferred Income Taxes	-	-	11	40	116	144	121	81	256	337	438
Other Liabilities and Deferred Credits	-	-	4	24	55	123	271	416	498	528	563
Total Liabilities	-	-	57	264	586	749	1,209	1,313	1,513	2,027	2,107
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Shareholder Capital	-	-	148	359	828	1,217	2,005	2,257	2,608	2,999	2,988
Contributed Surplus (Paid-in Capital)	-	-	8	11	15	13	20	31	31	26	12
Preferred Stock/Convertibles	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	-	-	(11)	15	68	15	270	(325)	(273)	(455)	(507)
Accumulated Cash Distributions / Other	-	-	-	-	-	-	-	-	-	-	-
Total Shareholder Equity	-	-	145	385	911	1,245	2,295	1,963	2,366	2,570	2,493
Total Liabilities and Shareholder Equity	-	-	201	649	1,497	1,994	3,504	3,276	3,879	4,597	4,599
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**-4.4%**	**8.1%**	**6.9%**	**3.3%**	**19.1%**	**-13.1%**	**5.1%**	**-2.3%**	**2.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue			$45.83	$71.24	$63.24	$62.31	$62.78	$42.55	$31.30	$35.45	$38.73	$35.73	$40.20
Production Costs			$16.71	$16.64	$15.29	$14.05	$13.48	$10.10	$8.85	$10.93	$12.53	$11.05	$11.20
Exploration			$0.00	$0.00	$0.78	$0.26	$0.98	$0.32	$0.25	$0.09	$0.03	$0.11	$0.25
DD&A			$34.23	$28.42	$25.90	$24.01	$23.66	$18.95	$15.45	$16.43	$15.81	$15.91	$17.37
G&A / Other			$17.09	$2.08	$2.06	$1.90	$1.62	$1.28	$1.10	$1.17	$0.97	$1.07	$1.17
Pre-tax Results of Operations			-$22.20	$24.09	$19.22	$22.09	$23.04	$11.91	$5.65	$6.83	$9.39	$7.59	$10.22
Income Taxes			-$2.22	$6.38	$5.39	$8.44	$4.10	$2.10	$1.62	$1.56	$2.85	$2.07	$2.40
Results of Operations			-$19.98	$17.72	$13.83	$13.65	$18.94	$9.81	$4.03	$5.27	$6.54	$5.52	$7.82

Source: BMO Capital Markets, Company Reports

Whitecap Resources Inc. (WCP - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	3.5	10.5	24.5	32.4	46.9	53.6	55.7	56.5	62.9	58.4	55.1
Liquids Production (b/d)	-	-	622	3,018	8,210	11,489	19,253	27,211	31,641	40,204	54,662	42,169	34,594
Total Production (boe/d)	-	-	1,198	4,776	12,290	16,890	27,076	36,136	40,926	49,618	65,145	51,897	43,780
% Gas Production			48%	37%	33%	32%	29%	25%	23%	19%	16%	19%	21%
% Oil Production			52%	63%	67%	68%	71%	75%	77%	81%	84%	81%	79%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	14.7	31.8	96.3	138.5	192.0	241.7	271.1	278.3	275.7	275.1	251.8
Closing Oil Reserves (mmbbls)	-	-	4.4	15.9	35.2	56.7	99.0	135.8	178.6	252.8	263.7	231.7	186.0
Closing Total Proven Reserves (mmboe)	-	-	6.9	21.2	51.3	79.8	131.0	176.1	223.8	299.2	309.7	277.6	228.0
% Gas Reserves			36%	25%	31%	29%	24%	23%	20%	16%	15%	17%	18%
% Oil Reserves			64%	75%	69%	71%	76%	77%	80%	84%	85%	83%	82%
Proven Reserve Life Index			15.8	12.2	11.4	12.9	13.3	13.4	15.0	16.5	13.0	14.8	14.2
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	9.3	20.5	73.2	54.7	68.8	64.5	46.9	26.4	18.8	92.0	225.4
Oil Additions (mmbbls)	-	-	3.4	12.7	22.0	25.4	49.0	42.5	53.2	95.1	27.1	175.4	266.9
Total Additions (mmboe)	-	-	5.0	16.1	34.2	34.6	60.4	53.2	61.0	99.5	30.3	190.8	304.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	0.8	6.1	9.0	12.6	16.3	12.5	11.5	14.0	19.1	44.6	73.5
Net Acquisitions	-	-	3.9	8.2	23.2	19.9	43.4	37.4	46.9	78.8	4.2	130.0	210.7
Revisions of Estimates	-	-	0.3	1.8	2.1	2.1	0.8	3.3	2.6	6.6	7.0	16.2	20.2
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	16.4%	37.8%	26.3%	36.5%	27.0%	23.5%	18.8%	14.1%	63.1%	23.4%	24.1%
Net Acquisitions	-	-	77.7%	50.8%	67.7%	57.5%	71.7%	70.2%	76.9%	79.2%	13.9%	68.1%	69.2%
Revisions of Estimates	-	-	5.9%	11.3%	6.0%	6.0%	1.2%	6.2%	4.2%	6.6%	23.0%	8.5%	6.6%
Additions as % of Production:													
Gas	-	-	733.1%	531.8%	819.6%	462.8%	401.8%	330.0%	230.5%	127.9%	81.8%	144.0%	280.0%
Oil	-	-	1513.3%	1151.9%	735.3%	606.3%	696.8%	427.5%	460.7%	648.2%	135.9%	379.9%	528.4%
Total	-	-	1138.1%	923.7%	763.3%	560.4%	611.6%	403.4%	408.4%	549.5%	127.2%	335.7%	476.3%
Additions as % of Reserves:													
Gas	-	-	62.8%	64.4%	76.1%	39.5%	35.9%	26.7%	17.3%	9.5%	6.8%	33.4%	89.5%
Oil	-	-	77.2%	79.6%	62.5%	44.9%	49.5%	31.3%	29.8%	37.6%	10.3%	75.7%	143.5%
Total	-	-	72.1%	75.8%	66.8%	43.3%	46.1%	30.2%	27.3%	33.3%	9.8%	68.7%	133.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	-	-	$1.2	$5.1	$7.2	$3.9	$2.4	$0.8	$0.8	$1.1	$1.1	$3.0	$6.2
Exploration & Development	-	-	$38.7	$137.0	$239.1	$180.8	$291.4	$183.3	$130.9	$260.9	$338.9	$730.7	$1,205.4
Net Acquisitions	-	-	$67.5	$264.1	$649.9	$425.7	$1,159.3	$630.9	$367.3	$737.4	$59.8	$1,164.5	$2,954.7
Total Expenditures	-	-	$107.5	$406.2	$896.2	$610.3	$1,453.1	$815.0	$499.0	$999.4	$399.8	$1,898.2	$4,166.3
Expenditures as % of Total:													
Land & Seismic	-	-	1.1%	1.2%	0.8%	0.6%	0.2%	0.1%	0.2%	0.1%	0.3%	0.2%	0.1%
Exploration & Development	-	-	36.0%	33.7%	26.7%	29.6%	20.1%	22.5%	26.2%	26.1%	84.8%	38.5%	28.9%
Net Acquisitions	-	-	62.8%	65.0%	72.5%	69.7%	79.8%	77.4%	73.6%	73.8%	15.0%	61.3%	70.9%
Cashflow (C$million)	-	-	$11.4	$86.7	$188.4	$270.7	$436.2	$376.8	$290.7	$392.2	$543.7	$1,226.5	$2,039.6
Cashflow (C$/boe)			$25.99	$49.74	$41.99	$43.91	$44.14	$28.57	$19.46	$21.66	$22.87	$21.58	$31.91
Recycle Ratio			1.2x	2.0x	1.6x	2.5x	1.8x	1.9x	2.4x	2.2x	1.7x	2.2x	2.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	-	-	$35.96	$17.94	$22.24	$12.57	$17.20	$11.63	$9.36	$12.68	$13.05	$12.07	$12.93
Net Acquisition Costs	-	-	$17.46	$32.27	$28.05	$21.43	$26.74	$16.88	$7.82	$9.35	$14.24	$8.96	$14.02
All Sources (incl. revisions)	-	-	$21.59	$25.23	$26.17	$17.66	$24.04	$15.32	$8.18	$10.04	$13.22	$9.95	$13.69
Exploration & Development (excl. revisions)	-	-	$49.00	$23.32	$27.31	$14.63	$17.99	$14.70	$11.46	$18.65	$17.82	$16.44	$16.49
Net Acquisition Costs	-	-	$17.46	$32.27	$28.05	$21.43	$26.74	$16.88	$7.82	$9.35	$14.24	$8.96	$14.02
All Sources (excl. revisions)	-	-	$22.95	$28.45	$27.84	$18.79	$24.35	$16.33	$8.54	$10.76	$17.17	$10.87	$14.66

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Whitecap Resources Inc. (WCP - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	16.71	16.64	15.29	14.05	13.48	10.10	8.85	10.93	12.53	11.05	11.20
Exploration Expense	-	-	-	-	0.78	0.26	0.98	0.32	0.25	0.09	0.03	0.11	0.25
G&A/Other	-	-	17.09	2.08	2.06	1.90	1.62	1.28	1.10	1.17	0.97	1.07	1.17
F&D Costs (1-Year)	-	-	21.59	25.23	26.17	17.66	24.04	15.32	8.18	10.04	13.22	9.95	17.08
Return on Capital	-	-	22.18	19.63	18.94	14.48	20.41	13.07	7.94	10.89	11.15	9.59	15.70
Income Taxes	-	-	2.46	7.06	7.39	8.95	4.42	2.80	3.20	3.22	4.87	3.61	4.82
Breakeven Oil Price	**-**	**-**	**80.02**	**70.65**	**70.63**	**57.30**	**64.95**	**42.88**	**29.52**	**36.34**	**42.76**	**35.37**	**50.21**
Quality Differential	-	-	8.55	7.78	19.86	16.95	13.29	12.19	10.83	11.36	22.16	14.78	13.96
Required Brent Price	**-**	**-**	**88.58**	**78.42**	**90.49**	**74.25**	**78.24**	**55.07**	**40.35**	**47.69**	**64.92**	**50.15**	**64.17**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	24.26	22.95	20.87	18.58	16.73	12.16	10.51	12.75	14.50	12.91	13.24
Exploration Expense	-	-	-	-	1.07	0.35	1.22	0.39	0.30	0.11	0.03	0.12	0.30
G&A/Other	-	-	24.82	2.87	2.81	2.51	2.01	1.54	1.30	1.36	1.12	1.25	1.38
F&D Costs (1-Year)	-	-	27.01	29.97	36.72	22.12	27.56	17.77	8.98	10.39	14.48	10.58	14.99
Return on Capital	-	-	31.55	26.24	27.07	18.88	24.29	15.45	8.92	11.62	12.36	10.43	14.04
Income Taxes	-	-	3.51	9.44	10.56	11.67	5.26	3.31	3.60	3.43	5.40	3.92	4.31
Breakeven Oil Price	**-**	**-**	**111.14**	**91.49**	**99.09**	**74.11**	**77.08**	**50.62**	**33.61**	**39.66**	**47.88**	**39.22**	**48.25**
Quality Differential	-	-	12.42	10.73	27.12	22.42	16.49	14.67	12.86	13.25	25.63	17.25	16.58
Required Brent Price	**-**	**-**	**123.56**	**102.21**	**126.21**	**96.52**	**93.58**	**65.29**	**46.47**	**52.91**	**73.51**	**56.47**	**64.83**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	24.26	22.95	20.87	18.58	16.73	12.16	10.51	12.75	14.50	12.91	13.24
Exploration Expense	-	-	-	-	1.07	0.35	1.22	0.39	0.30	0.11	0.03	0.12	0.30
G&A/Other	-	-	24.82	2.87	2.81	2.51	2.01	1.54	1.30	1.36	1.12	1.25	1.38
F&D Costs (1-Year)	-	-	25.57	51.22	54.04	38.51	35.99	28.85	12.46	13.94	15.35	13.71	21.32
Return on Capital	-	-	29.54	44.90	39.93	32.88	31.78	25.02	12.34	15.63	13.11	13.48	20.08
Income Taxes	-	-	3.28	16.16	15.57	20.32	6.88	5.36	4.98	4.62	5.72	5.07	6.16
Breakeven Oil Price	**-**	**-**	**107.47**	**138.10**	**134.30**	**113.16**	**94.62**	**73.32**	**41.89**	**48.41**	**49.83**	**46.54**	**62.48**
Quality Differential	-	-	12.42	10.73	27.12	22.42	16.49	14.67	12.86	13.25	25.63	17.25	16.58
Required Brent Price	**-**	**-**	**119.89**	**148.82**	**161.42**	**135.58**	**111.11**	**87.98**	**54.76**	**61.66**	**75.46**	**63.78**	**79.06**

Source: BMO Capital Markets, Company Reports

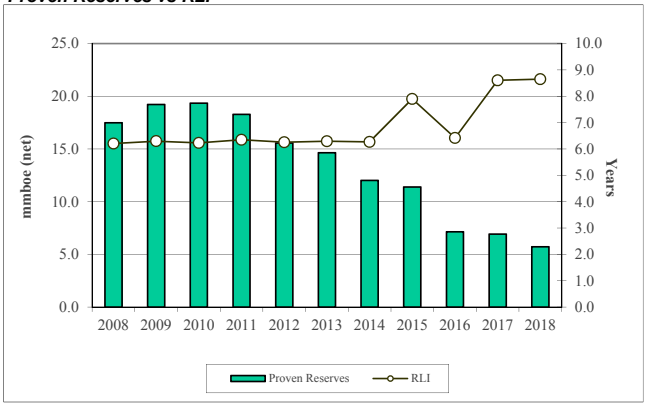
Zargon Oil & Gas Ltd. (ZAR - TSX)

US$, net

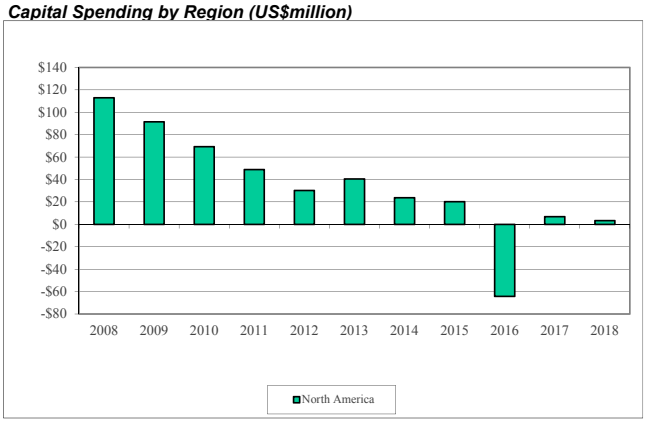
- Zargon reported a loss from operations of $3.78/boe in 2018 versus a loss of $2.25/boe in 2017.
- One-year F&D costs were not meaningful in 2018 due to negative revisions and dispositions, therefore a three-year average of $17.98/boe has been used for breakeven calculations. On a realized oil:gas price ratio basis, F&D costs were stable at $18.85/boe from $18.38/boe, while costs for PD reserves jumped to $34.97/boe from $17.74/boe the previous year.
- The company's 2018 operations suggest a required Brent breakeven oil price of $98.27/boe on total proved reserves, while PD costs suggest a Brent breakeven of $107.20/boe.
- The company reported a normalized loss on capital employed of 33.9% in 2018.

Notes: All financial figures have been converted from Canadian Dollars to U.S. Dollars using average annual exchange rates.

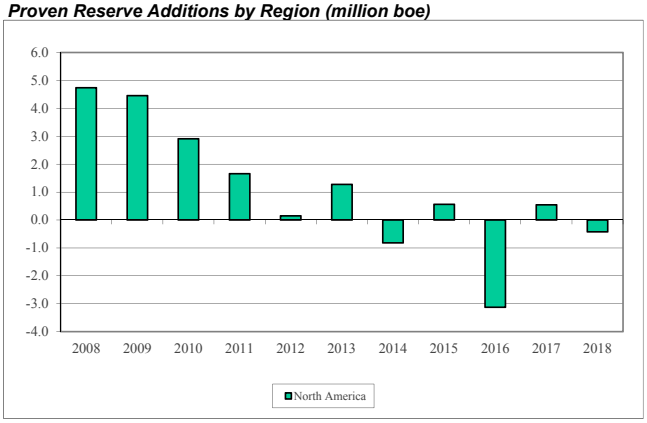
Proven Reserves vs RLI



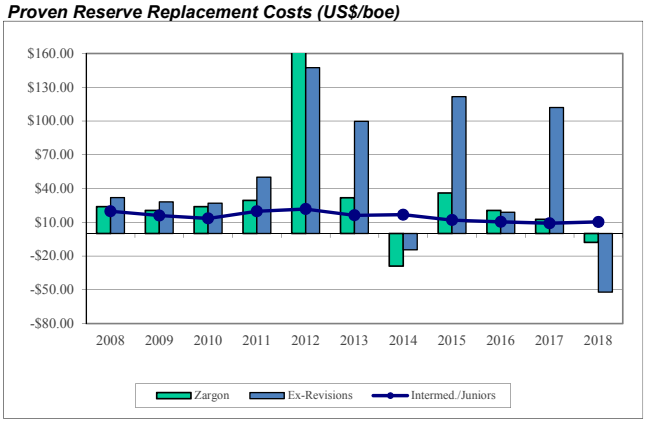
Capital Spending by Region (US$million)



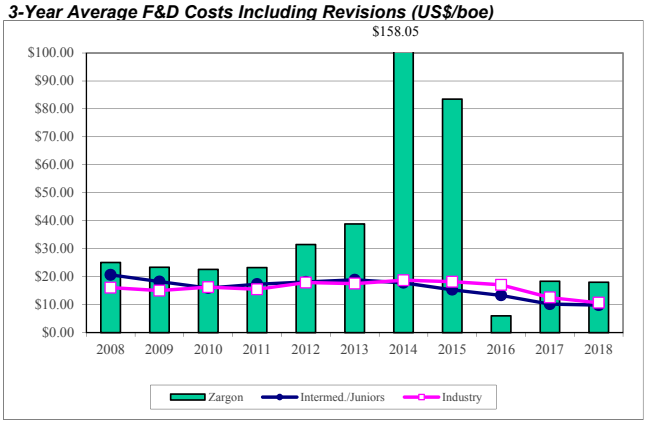
Proven Reserve Additions by Region (million boe)



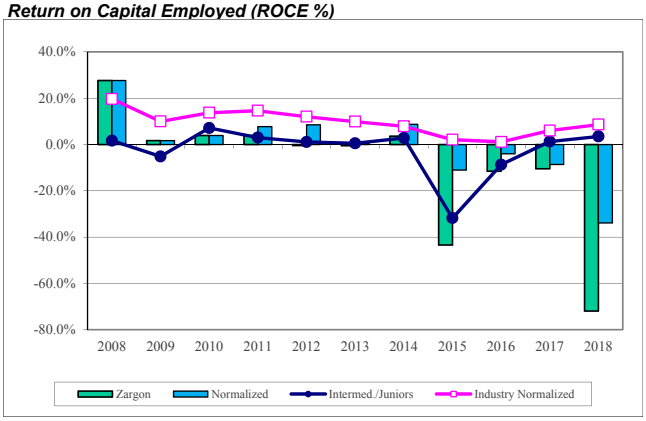
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



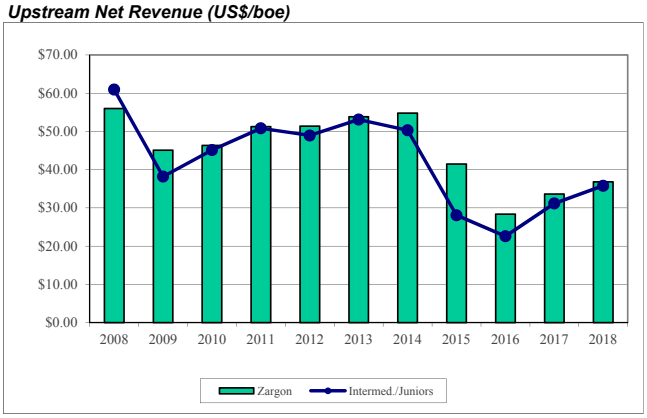
Source: BMO Capital Markets, Company Reports

Zargon Oil & Gas Ltd. (ZAR - TSX)

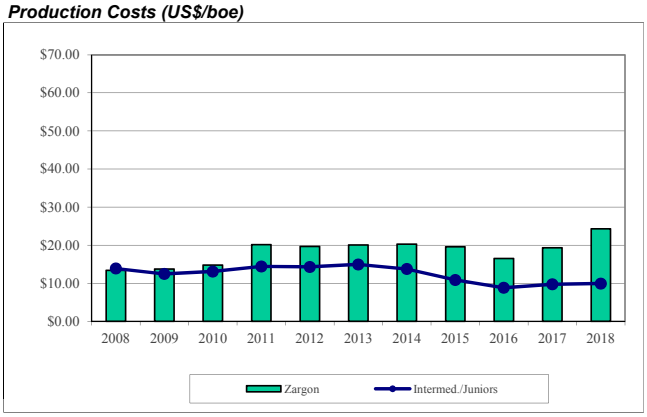
US$/boe, net

North America

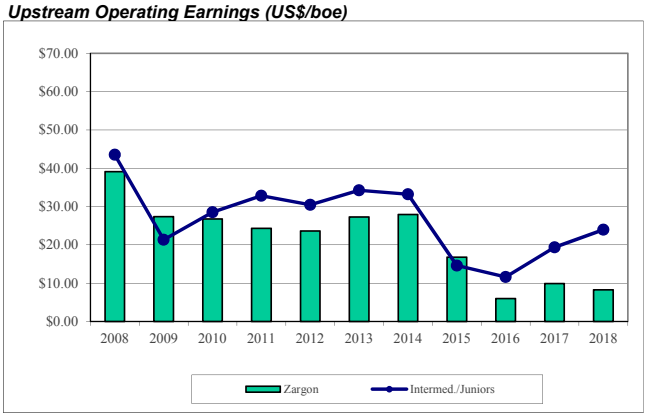
Upstream Net Revenue (US$/boe)



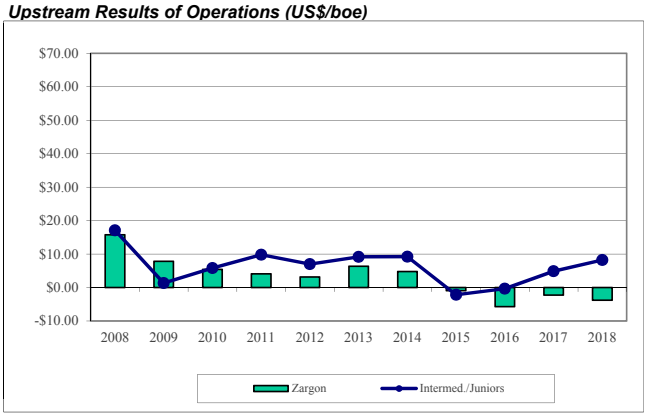
Production Costs (US$/boe)



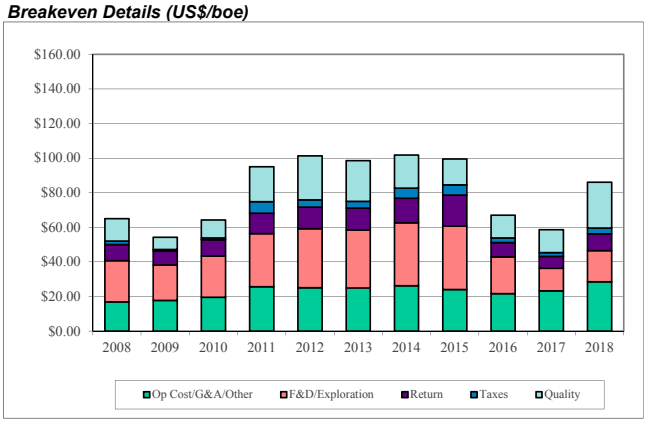
Upstream Operating Earnings (US$/boe)



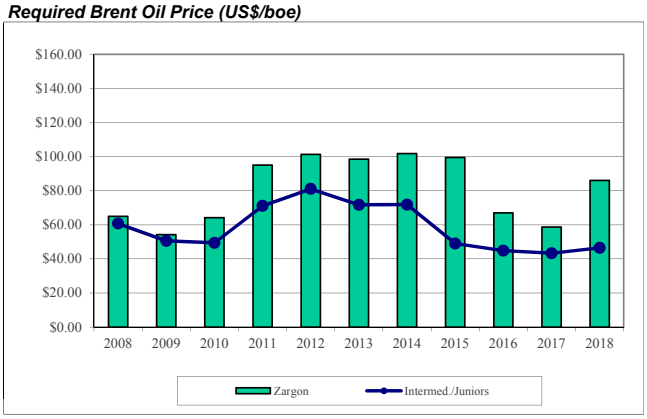
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Zargon Oil & Gas Ltd. (ZAR - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	172	113	143	159	128	126	107	45	30	26	23
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	27	(8)	(10)	(3)	10	(10)	13	7	(1)	0	(1)
Total Revenue and Other Income	199	106	133	156	138	116	120	52	28	27	22
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	38	42	46	58	49	47	39	28	18	16	16
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	4	7	4	1	1	1	0	-
General and Administrative	10	12	15	16	14	11	11	6	6	3	3
Depreciation, Depletion and Amortization	56	57	64	52	48	44	41	26	15	10	9
Interest, net	5	3	5	5	5	6	5	5	4	3	3
Other	(1)	1	3	2	20	9	12	80	(15)	2	18
Earnings Before Income Tax	90	(12)	(3)	16	(7)	(8)	8	(96)	(2)	(9)	(28)
Current Income Taxes	4	2	2	3	1	1	0	(0)	(0)	(0)	0
Future Income Taxes (Recovery)	12	(17)	(14)	3	(2)	(3)	2	(12)	12	(2)	(0)
Total Income Taxes	16	(14)	(12)	6	(2)	(2)	2	(13)	12	(2)	(0)
Minority Interest	(10)	(0)	(1)	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	64	2	9	11	(5)	(6)	5	(83)	(14)	(7)	(27)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	64	2	9	11	(5)	(6)	5	(83)	(14)	(7)	(27)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	64	2	9	11	(5)	(6)	5	(83)	(14)	(7)	(27)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	64	2	9	11	(5)	(6)	5	(83)	(14)	(7)	(27)
Charges and Credits Not Impacting Cash	68	40	50	58	90	50	63	89	36	11	26
Other	(32)	33	13	(7)	(28)	13	(22)	13	(20)	(0)	(1)
Cash Flow From Operations	101	76	72	61	57	57	46	19	3	3	(2)
Change in Working Capital / Other	3	2	(11)	13	2	(1)	(0)	(3)	1	(1)	3
Net Cash From Operating Activities	104	78	61	74	59	55	46	16	4	2	1
Total Capital Expenditures	(56)	(43)	(91)	(82)	(67)	(74)	(55)	(20)	(5)	(7)	(4)
Acquisitions, net	(16)	(17)	-	33	37	34	31	0	70	(0)	0
Other	(0)	(9)	37	(3)	2	1	(5)	(3)	(4)	2	(1)
Net Cash From Investing Activities	(72)	(68)	(54)	(52)	(28)	(40)	(29)	(23)	60	(5)	(4)
Net Change in Debt	4	(1)	38	(23)	(57)	4	3	14	(46)	(12)	4
Net Issuance of Shares	-	29	-	37	-	-	-	-	-	-	-
Net Change in Preferred Stock/Convertibles	-	-	-	-	55	-	-	-	-	-	-
Cash Dividends Paid	(37)	(40)	(46)	(39)	(27)	(20)	(20)	(5)	-	-	-
Other	1	2	2	2	(1)	0	0	(1)	-	-	-
Net Cash From Financing Activities	(32)	(10)	(6)	(22)	(30)	(16)	(17)	7	(46)	(12)	4
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	0	(0)	0	-	0	(0)	18	(15)	1
Cash and Equivalents, Beginning of Year	(0)	-	0	0	0	0	0	0	0	18	3
Cash and Equivalents, End of Year	(0)	-	0	0	0	0	0	(0)	18	3	4

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Zargon Oil & Gas Ltd. (ZAR - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	49	29	27	25	23	15	24	9	22	8	6
Net Property, Plant and Equipment	365	375	427	441	410	397	306	181	104	101	78
Other Assets	9	5	4	10	12	28	17	17	2	0	0
Total Assets	422	409	458	476	445	440	347	206	128	108	84
Total Current Liabilities	39	40	44	47	38	39	25	10	48	6	5
Long-term Debt	73	67	112	94	87	90	87	90	-	32	32
Deferred Income Taxes	47	27	18	11	11	12	10	4	3	3	3
Other Liabilities and Deferred Credits	27	32	45	98	113	131	78	61	50	50	52
Total Liabilities	186	167	218	250	249	271	200	165	102	91	92
Minority Interests	26	23	-	-	-	-	-	-	-	-	-
Shareholder Capital	114	166	234	252	255	249	233	203	197	202	203
Contributed Surplus (Paid-in Capital)	4	5	6	9	11	12	12	10	8	7	7
Preferred Stock/Convertibles	-	-	-	-	-	-	-	-	-	-	-
Accumulated Earnings	243	229	-	(35)	(72)	(96)	(104)	(178)	(186)	(198)	(225)
Accumulated Cash Distributions / Other	(151)	(181)	-	(1)	3	4	6	7	6	6	7
Total Shareholder Equity	210	219	240	226	197	169	146	41	26	18	(9)
Total Liabilities and Shareholder Equity	422	409	458	476	445	440	347	206	128	108	84
Return on Capital Employed (ROCE)	**27.7%**	**1.7%**	**3.9%**	**3.9%**	**-0.4%**	**-0.5%**	**3.6%**	**-43.4%**	**-11.6%**	**-10.5%**	**-72.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	$56.00	$45.08	$46.32	$51.22	$51.36	$53.83	$54.76	$41.47	$28.34	$33.59	$36.78	$32.14	$41.71
Production Costs	$13.37	$13.72	$14.77	$20.13	$19.65	$20.05	$20.27	$19.57	$16.48	$19.30	$24.28	$19.36	$19.71
Exploration	$0.00	$0.00	$0.00	$1.22	$2.63	$1.68	$0.60	$0.69	$0.69	$0.38	$0.00	$0.41	$0.54
DD&A	$19.98	$18.67	$20.78	$17.90	$19.39	$18.95	$21.17	$18.04	$13.60	$12.91	$13.31	$13.31	$17.00
G&A / Other	$3.50	$3.97	$4.77	$5.56	$5.45	$4.80	$5.97	$4.42	$5.17	$3.99	$4.23	$4.56	$4.98
Pre-tax Results of Operations	$19.14	$8.71	$6.00	$6.41	$4.24	$8.35	$6.75	-$1.26	-$7.60	-$2.99	-$5.04	-$5.51	-$0.52
Income Taxes	$3.38	$0.87	$0.60	$2.31	$1.07	$1.98	$1.95	-$0.31	-$1.90	-$0.75	-$1.26	-$1.38	-$0.13
Results of Operations	$15.76	$7.84	$5.40	$4.09	$3.17	$6.37	$4.80	-$0.94	-$5.70	-$2.25	-$3.78	-$4.13	-$0.39

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Zargon Oil & Gas Ltd. (ZAR - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	24.8	24.7	22.5	19.3	15.0	13.8	10.3	4.6	3.2	3.1	2.0	2.8	4.6
Liquids Production (b/d)	3,578	4,248	4,756	4,671	4,308	4,071	3,528	3,191	2,518	1,679	1,486	1,894	2,480
Total Production (boe/d)	7,713	8,364	8,501	7,887	6,815	6,370	5,252	3,951	3,051	2,204	1,813	2,356	3,254
% Gas Production	54%	49%	44%	41%	37%	36%	33%	19%	17%	24%	18%	20%	24%
% Oil Production	46%	51%	56%	59%	63%	64%	67%	81%	83%	76%	82%	80%	76%
Proven Reserves:													
Closing Gas Reserves (bcf)	40.4	41.3	39.2	34.6	26.1	22.5	8.8	7.7	5.8	6.2	3.8	5.3	6.4
Closing Oil Reserves (mmbbls)	10.8	12.3	12.8	12.5	11.2	10.9	10.6	10.1	6.2	5.9	5.1	5.7	7.6
Closing Total Proven Reserves (mmboe)	17.5	19.2	19.3	18.3	15.6	14.6	12.0	11.4	7.1	6.9	5.7	6.6	8.6
% Gas Reserves	39%	36%	34%	32%	28%	26%	12%	11%	14%	15%	11%	13%	12%
% Oil Reserves	61%	64%	66%	68%	72%	74%	88%	89%	86%	85%	89%	87%	88%
Proven Reserve Life Index	6.2	6.3	6.3	6.4	6.3	6.3	6.3	7.9	6.4	8.7	8.7	7.9	7.6
Proven Reserve Additions:													
Gas Additions (bcf)	12.9	8.8	4.7	2.7	-2.8	1.1	-10.2	0.4	-0.7	1.3	-1.6	(1.0)	(10.8)
Oil Additions (mmbbls)	2.6	3.0	2.1	1.2	0.6	1.1	0.9	0.5	-3.0	0.3	-0.2	(2.8)	(1.5)
Total Additions (mmboe)	4.7	4.5	2.9	1.7	0.1	1.3	-0.8	0.6	-3.1	0.5	-0.4	-3.0	-3.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	1.2	0.9	1.6	0.9	0.9	2.2	0.7	0.2	0.0	0.0	0.0	-	0.9
Net Acquisitions	2.3	2.4	1.0	0.0	-0.7	-1.8	-2.3	0.0	-3.4	0.1	-0.1	(3.4)	(5.7)
Revisions of Estimates	1.2	1.2	0.3	0.7	-0.1	0.9	0.8	0.4	0.3	0.5	-0.4	0.4	1.6
Components as % of Total Additions:													
Extensions, Discoveries and Additions	25.8%	19.7%	53.6%	57.1%	593.5%	170.1%	-84.0%	29.8%	0.0%	0.0%	0.0%	0.0%	-26.2%
Net Acquisitions	49.0%	53.3%	34.6%	1.8%	-453.9%	-138.1%	284.8%	-0.2%	108.7%	11.3%	15.0%	113.0%	175.6%
Revisions of Estimates	25.2%	27.0%	11.7%	41.2%	-39.7%	68.0%	-100.9%	70.4%	-8.7%	88.7%	85.0%	-13.0%	-49.4%
Additions as % of Production:													
Gas	142.6%	97.8%	57.1%	39.0%	-50.4%	22.1%	-269.6%	23.6%	-61.7%	115.8%	-223.0%	-32.5%	-127.1%
Oil	197.8%	192.7%	122.5%	70.4%	38.6%	73.2%	68.0%	42.6%	-327.4%	52.1%	-29.2%	-137.3%	-32.6%
Total	168.2%	146.0%	93.7%	57.6%	5.9%	54.7%	-42.8%	39.0%	-280.9%	67.2%	-64.1%	-116.8%	-55.1%
Additions as % of Reserves:													
Gas	32.0%	21.3%	12.0%	7.9%	-10.6%	4.9%	-115.8%	5.1%	-12.4%	21.5%	-42.4%	-18.7%	-167.0%
Oil	24.0%	24.2%	16.6%	9.6%	5.4%	10.0%	8.3%	4.9%	-48.7%	5.4%	-3.1%	-49.8%	-19.5%
Total	27.1%	23.2%	15.0%	9.1%	0.9%	8.7%	-6.8%	4.9%	-43.8%	7.8%	-7.4%	-45.7%	-37.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (C$million):													
Land & Seismic	$11.9	$8.2	$4.9	$6.3	$4.3	$5.5	$2.9	$1.8	$1.6	$1.6	$0.9	$4.2	$8.9
Exploration & Development	$38.8	$32.7	$47.0	$59.9	$55.0	$68.5	$51.4	$18.1	$3.6	$5.1	$2.7	$11.4	$80.8
Net Acquisitions	$62.3	$50.5	$17.4	-$17.3	-$29.1	-$33.5	-$30.5	$0.4	-$69.5	$0.2	-$0.3	-$69.7	-$99.8
Total Expenditures	$112.9	$91.5	$69.3	$48.9	$30.2	$40.5	$23.8	$20.3	-$64.3	$6.8	$3.3	-$54.2	-$10.1
Expenditures as % of Total:													
Land & Seismic	10.5%	9.0%	7.1%	12.8%	14.2%	13.5%	12.3%	8.9%	-2.5%	23.6%	28.4%	-7.7%	-87.8%
Exploration & Development	34.3%	35.8%	67.8%	122.7%	182.0%	169.0%	216.0%	89.1%	-5.6%	74.0%	80.9%	-21.0%	-800.0%
Net Acquisitions	55.2%	55.3%	25.1%	-35.5%	-96.2%	-82.5%	-128.3%	2.0%	108.1%	2.4%	-9.3%	128.7%	987.8%
Cashflow (C$million)	$100.8	$76.1	$71.6	$61.4	$56.7	$56.8	$45.9	$18.9	$2.6	$3.0	-$1.9	$3.7	$68.5
Cashflow (C$/boe)	$35.82	$24.92	$23.07	$21.32	$22.79	$24.43	$23.94	$13.11	$2.38	$3.72	-$2.89	$1.44	$11.54
Recycle Ratio	1.5x	1.2x	1.0x	0.7x	0.1x	0.8x	-0.8x	0.4x	0.1x	0.3x	0.4x	0.1x	3.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (C$/boe):													
Exploration & Development (incl. revisions)	$20.96	$19.66	$27.33	$40.62	$72.93	$24.42	$35.79	$35.27	$19.15	$13.90	-$10.06	$39.56	$36.27
Net Acquisition Costs	$26.85	$21.27	$17.25	-$586.88	$43.64	$19.03	$13.05	-$329.71	$20.44	$2.66	$4.84	$20.47	$17.38
All Sources (incl. revisions)	$23.85	$20.52	$23.84	$29.45	$205.84	$31.86	-$28.97	$36.06	$20.56	$12.63	-$7.82	$17.98	$3.09
Exploration & Development (excl. revisions)	$41.38	$46.58	$33.30	$69.93	$68.05	$34.18	$78.78	$118.45	nm	nm	nm	nm	$104.66
Net Acquisition Costs	$26.85	$21.27	$17.25	-$586.88	$43.64	$19.03	$13.05	-$329.71	$20.44	$2.66	$4.84	$20.47	$17.38
All Sources (excl. revisions)	$31.87	$28.10	$27.00	$50.06	$147.38	$99.65	-$14.43	$121.71	$18.91	$112.02	-$52.06	$15.91	$2.07

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Zargon Oil & Gas Ltd. (ZAR - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe, 6:1 Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.37	13.72	14.77	20.13	19.65	20.05	20.27	19.57	16.48	19.30	24.28	19.36	19.71
Exploration Expense	-	-	-	1.22	2.63	1.68	0.60	0.69	0.69	0.38	-	0.41	0.54
G&A/Other	3.50	3.97	4.77	5.56	5.45	4.80	5.97	4.42	5.17	3.99	4.23	4.56	4.98
F&D Costs (1-Year)	23.85	20.52	23.84	29.45	31.48	31.86	35.79	36.06	20.56	12.63	17.98	17.06	24.60
Return on Capital	9.34	8.09	9.40	11.80	12.46	12.69	14.21	17.85	8.24	6.83	9.78	11.50	11.72
Income Taxes	2.00	0.90	1.04	6.66	4.21	3.94	5.79	5.95	2.75	2.28	3.26	3.83	4.07
Breakeven Oil Price	**52.06**	**47.21**	**53.82**	**74.82**	**75.88**	**75.02**	**82.63**	**84.54**	**53.89**	**45.41**	**59.54**	**56.73**	**65.62**
Quality Differential	12.94	7.01	10.38	20.19	25.43	23.55	19.17	14.92	13.10	13.24	26.51	17.62	17.39
Required Brent Price	**65.01**	**54.23**	**64.21**	**95.01**	**101.31**	**98.57**	**101.80**	**99.46**	**66.99**	**58.65**	**86.05**	**74.34**	**83.01**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.71	19.04	20.91	28.96	28.25	27.91	26.16	22.36	18.79	23.58	28.62	22.74	23.67
Exploration Expense	-	-	-	1.76	3.78	2.33	0.77	0.79	0.78	0.46	-	0.49	0.65
G&A/Other	4.63	5.51	6.75	7.99	7.84	6.69	7.70	5.05	5.89	4.87	4.98	5.35	5.98
F&D Costs (1-Year)	30.09	25.24	29.04	37.11	57.20	35.93	69.43	39.01	29.21	18.38	18.85	22.15	34.98
Return on Capital	12.79	10.99	12.45	16.07	24.75	15.63	31.98	20.43	12.15	10.72	10.93	11.63	17.93
Income Taxes	2.74	1.22	1.38	9.07	8.36	4.85	13.02	6.81	4.05	3.57	3.64	3.88	6.23
Breakeven Oil Price	**67.97**	**62.00**	**70.54**	**100.96**	**130.18**	**93.33**	**149.06**	**94.45**	**70.88**	**61.59**	**67.02**	**66.23**	**89.43**
Quality Differential	17.14	9.73	14.70	29.04	36.56	32.78	24.75	17.05	14.93	16.18	31.24	20.78	20.83
Required Brent Price	**85.10**	**71.73**	**85.24**	**130.01**	**166.74**	**126.11**	**173.81**	**111.50**	**85.81**	**77.77**	**98.27**	**87.02**	**110.26**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	17.71	19.04	20.91	28.96	28.25	27.91	26.16	22.36	18.79	23.58	28.62	22.74	23.67
Exploration Expense	-	-	-	1.76	3.78	2.33	0.77	0.79	0.78	0.46	-	0.49	0.65
G&A/Other	4.63	5.51	6.75	7.99	7.84	6.69	7.70	5.05	5.89	4.87	4.98	5.35	5.98
F&D Costs (1-Year)	25.56	20.42	28.40	35.15	9.09	65.91	23.89	47.77	39.40	17.74	34.97	30.71	32.76
Return on Capital	10.87	8.90	12.18	15.25	3.90	28.77	11.10	25.00	16.25	10.36	5.53	7.74	11.91
Income Taxes	2.33	0.99	1.35	8.61	1.32	8.93	4.52	8.33	5.42	3.45	1.84	2.58	4.14
Breakeven Oil Price	**61.10**	**54.86**	**69.60**	**97.73**	**54.18**	**140.54**	**74.15**	**109.31**	**86.54**	**60.47**	**75.95**	**69.61**	**79.11**
Quality Differential	17.14	9.73	14.70	29.04	36.56	32.78	24.75	17.05	14.93	16.18	31.24	20.78	20.83
Required Brent Price	**78.24**	**64.59**	**84.30**	**126.78**	**90.74**	**173.32**	**98.89**	**126.37**	**101.47**	**76.65**	**107.20**	**90.39**	**99.94**

Source: BMO Capital Markets, Company Reports

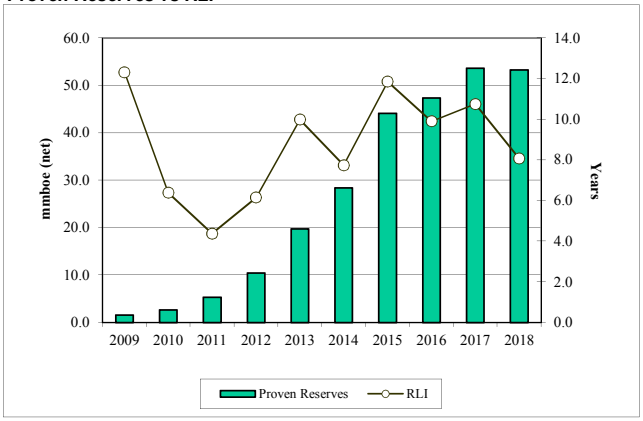
See pages F1 to F4 for analyst coverage.

Canacol Energy (CNE - TSX)

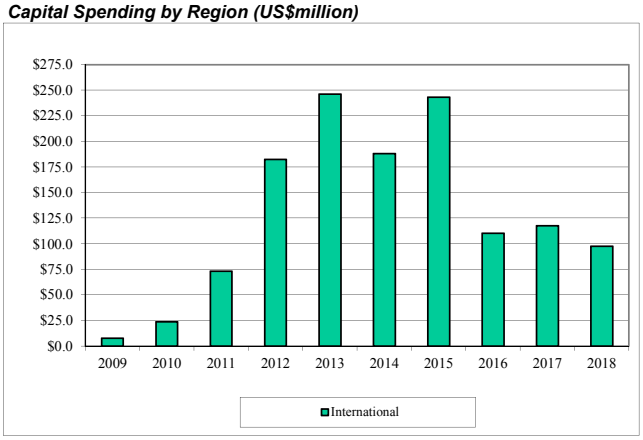
US$, net

- Canacol's results of operations increased to $7.58/boe from $4.41/boe in 2017.
- The company reported a loss on capital employed of 58.4% in 2018. Excluding extraordinary charges, normalized loss came in at 1.9%.
- 2018 F&D costs were not meaningful due to negligible proved reserves being added. On a realized oil:gas price basis, F&D costs were $14.96/boe versus $14.81/boe last year, while costs for PD reserves jumped to $28.63/boe from $17.19/boe in 2017.
- Canacol's 2018 results imply a required Brent breakeven oil price of $35.99/boe on a realized ratio basis, while its PD costs imply a break-even of $60.61/boe.

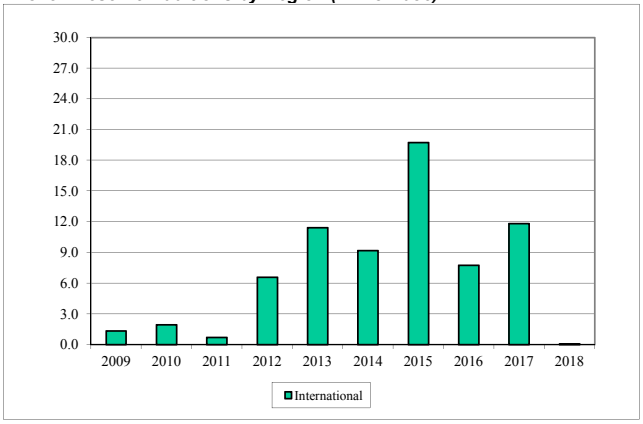
Proven Reserves vs RLI



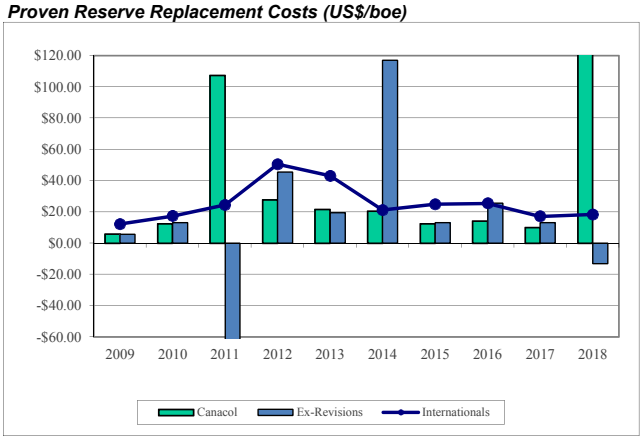
Capital Spending by Region (US$million)



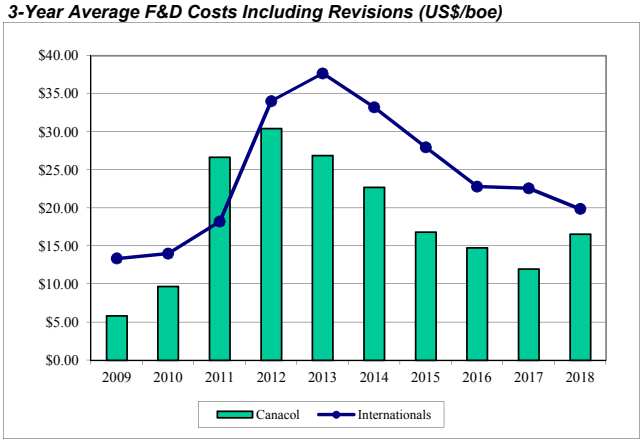
Proven Reserve Additions by Region (million boe)



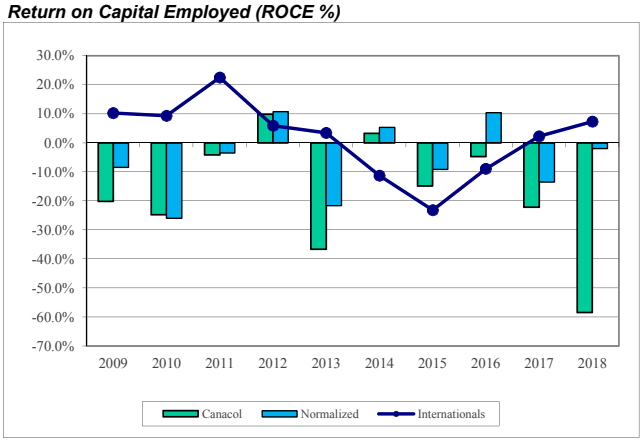
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

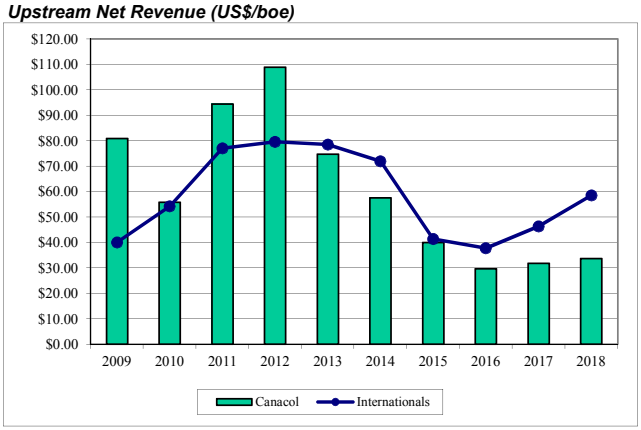
See pages F1 to F4 for analyst coverage.

Canacol Energy (CNE - TSX)

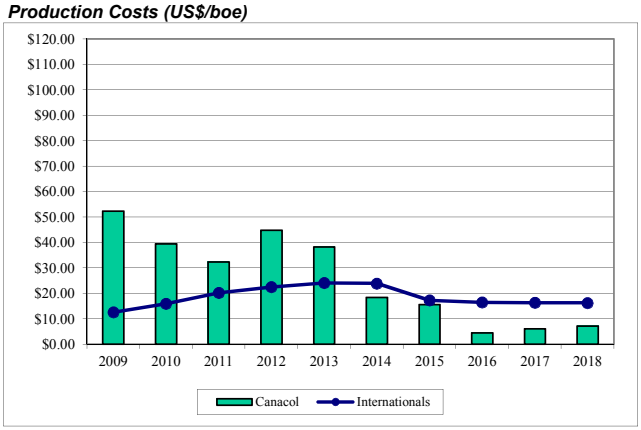
US$, net

International

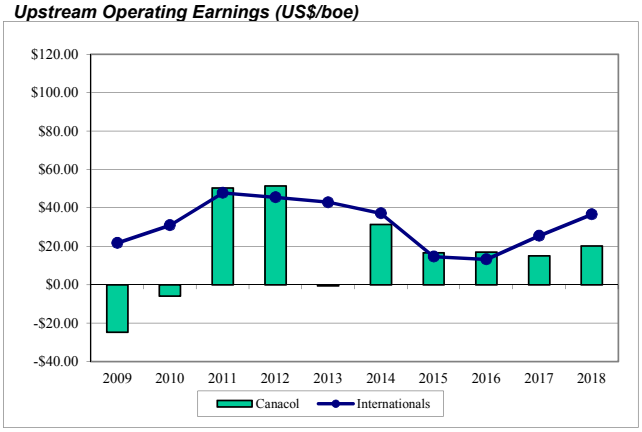
Upstream Net Revenue (US$/boe)



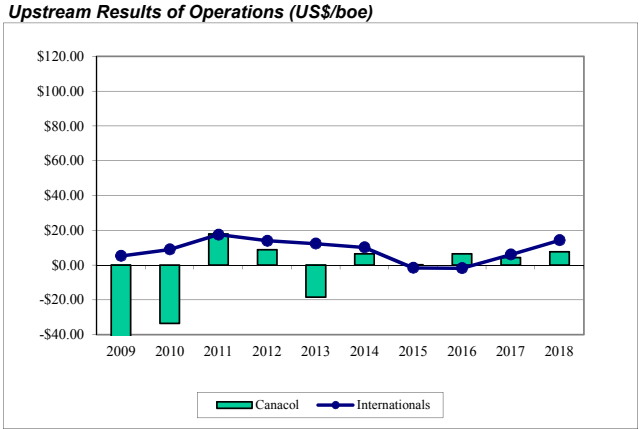
Production Costs (US$/boe)



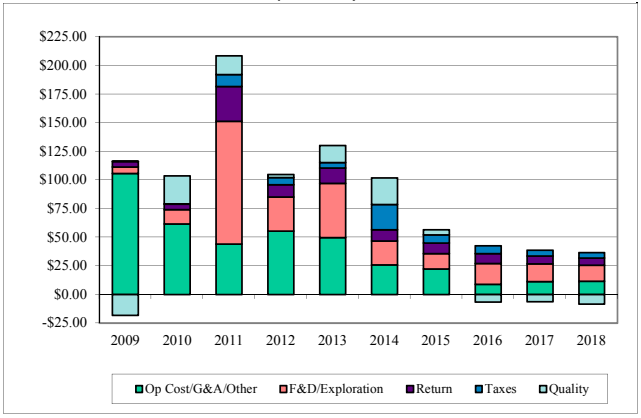
Upstream Operating Earnings (US$/boe)



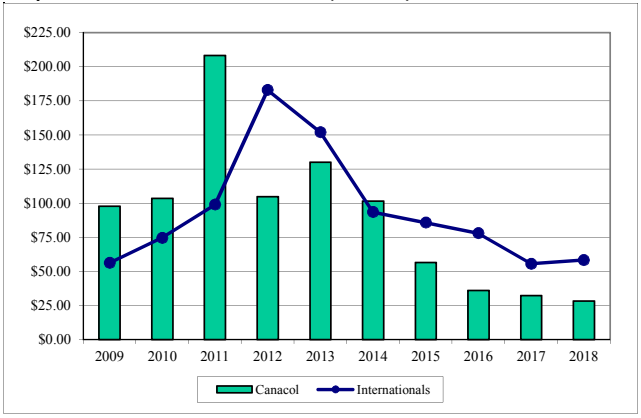
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canacol Energy (CNE - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	7	16	92	137	148	208	149	142	154	219
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	4	7	23	48	-	4	-	-	5	3
Total Revenue and Other Income	-	10	23	114	185	148	211	149	142	159	222
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	6	16	39	76	76	68	58	21	30	47
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	4	51	1	5	18	27	14
General and Administrative	-	7	9	14	18	22	27	24	22	27	28
Depreciation, Depletion and Amortization	-	6	12	32	64	48	39	61	27	36	44
Interest, net	-	3	5	3	3	16	10	28	23	31	49
Other	-	8	4	31	(9)	98	35	72	43	125	33
Earnings Before Income Tax	-	(19)	(22)	(6)	29	(163)	32	(99)	(11)	(116)	7
Current Income Taxes	-	(0)	1	21	15	2	25	8	16	26	22
Future Income Taxes	-	(0)	(2)	(16)	(4)	(45)	(3)	(0)	(50)	7	7
Total Income Taxes	-	(0)	(1)	5	11	(43)	22	7	(34)	32	29
Minority Interest	-	-	-	-	(0)	-	-	-	0	1	-
Earnings From Continuing Operations	-	(19)	(22)	(11)	19	(121)	10	(106)	24	(148)	(22)
Discontinued Operations/Extraordinary Items	-	11	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(8)	(22)	(11)	19	(121)	10	(106)	24	(148)	(22)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	(8)	(22)	(11)	19	(121)	10	(106)	24	(148)	(22)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	7	16	92	137	148	208	149	142	154	219
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	4	7	23	48	-	4	-	-	5	3
Total Revenue and Other Income	-	10	23	114	185	148	211	149	142	159	222
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	6	16	39	76	76	68	58	21	30	47
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	4	51	1	5	18	27	14
General and Administrative	-	7	9	14	18	22	27	24	22	27	28
Depreciation, Depletion and Amortization	-	6	12	32	64	48	39	61	27	36	44
Interest, net	-	3	5	3	3	16	10	28	23	31	49
Other	-	8	4	31	(9)	98	35	72	43	125	33
Earnings Before Income Tax	-	(19)	(22)	(6)	29	(163)	32	(99)	(11)	(116)	7
Current Income Taxes	-	(0)	1	21	15	2	25	8	16	26	22
Future Income Taxes	-	(0)	(2)	(16)	(4)	(45)	(3)	(0)	(50)	7	7
Total Income Taxes	-	(0)	(1)	5	11	(43)	22	7	(34)	32	29
Minority Interest	-	-	-	-	(0)	-	-	-	0	1	-
Earnings From Continuing Operations	-	(19)	(22)	(11)	19	(121)	10	(106)	24	(148)	(22)
Discontinued Operations/Extraordinary Items	-	11	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(8)	(22)	(11)	19	(121)	10	(106)	24	(148)	(22)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	(8)	(22)	(11)	19	(121)	10	(106)	24	(148)	(22)

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canacol Energy (CNE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	5	68	171	86	118	252	87	123	197	125
Net Property, Plant and Equipment	-	69	90	125	314	350	435	364	364	383	480
Other Assets	-	1	1	20	8	8	70	219	300	116	100
Total Assets	-	75	159	316	407	476	757	670	788	696	705
Total Current Liabilities	-	18	33	79	65	43	164	25	81	86	69
Long-term Debt	-	11	1	20	16	134	167	267	228	295	-
Deferred Income Taxes	-	10	8	9	-	3	1	1	36	26	32
Other Liabilities and Deferred Credits	-	2	3	8	35	49	24	36	66	51	398
Total Liabilities	-	42	45	116	116	230	356	328	411	457	500
Minority Interests	-	-	-	-	-	-	-	-	1	(0)	-
Common Shares	-	62	162	244	341	409	551	592	701	707	159
Contributed Surplus (Paid-in Capital)	-	8	12	22	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	(38)	(59)	(70)	(82)	(203)	(200)	(306)	(386)	(534)	(22)
Other / Comprehensive Income (Loss)	-	(0)	(1)	5	32	40	49	56	61	66	68
Total Shareholders' Equity	-	33	114	200	291	246	400	342	376	239	205
Total Liabilities and Shareholders' Equity	-	75	159	316	407	476	757	670	788	696	705

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue		$80.91	$55.84	$94.40	$108.98	$74.78	$57.53	$40.07	$29.70	$31.84	$33.71	$31.97	$37.19
Production Costs		$52.30	$39.52	$32.36	$44.79	$38.30	$18.39	$15.65	$4.47	$6.07	$7.15	$6.04	$9.45
Exploration		$0.00	$0.00	$0.00	$2.07	$25.73	$0.32	$1.21	$3.67	$5.44	$2.07	$3.56	$2.69
DD&A		$46.34	$28.89	$26.79	$37.63	$24.43	$10.55	$16.47	$5.55	$7.17	$6.71	$6.51	$8.69
G&A / Other		$53.31	$22.11	$11.55	$10.56	$11.26	$7.36	$6.47	$4.51	$5.31	$4.27	$4.66	$5.36
Pre-Tax Results of Operations		-$71.04	-$34.69	$23.70	$13.93	-$24.93	$20.91	$0.27	$11.50	$7.86	$13.51	$11.20	$10.99
Income Taxes		-$0.62	-$1.18	$5.93	$5.11	-$6.50	$14.41	$0.12	$5.05	$3.45	$5.93	$4.91	$5.37
Results of Operations		-$70.43	-$33.50	$17.78	$8.82	-$18.43	$6.50	$0.15	$6.45	$4.41	$7.58	$6.28	$5.62

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canacol Energy (CNE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	7.1	15.3	14.6	58.1	65.8	94.2	72.7	49.6
Liquids Production (b/d)	-	340	1,121	3,320	4,648	4,218	7,520	7,749	3,410	2,701	2,383	2,831	4,753
Total Production (boe/d)	-	340	1,121	3,320	4,648	5,410	10,063	10,190	13,088	13,672	18,079	14,946	13,018
% Gas Production	-	0%	0%	0%	0%	22%	25%	24%	74%	80%	87%	81%	63%
% Oil Production	-	100%	100%	100%	100%	78%	75%	76%	26%	20%	13%	19%	37%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	-	55.8	94.3	211.6	242.4	279.0	319.7	280.4	229.4
Closing Oil Reserves (mmbbls)	-	1.5	2.6	5.3	10.4	10.4	12.7	8.8	6.9	7.2	0.0	4.7	7.1
Closing Total Proven Reserves (mmboe)	-	1.5	2.6	5.3	10.4	19.7	28.4	44.1	47.3	53.7	53.3	51.4	45.4
% Gas Reserves	-	0%	0%	0%	0%	47%	55%	80%	85%	87%	100%	91%	84%
% Oil Reserves	-	100%	100%	100%	100%	53%	45%	20%	15%	13%	0%	9%	16%
Proven Reserve Life Index	-	12.3	6.4	4.4	6.2	10.0	7.7	11.9	9.9	10.8	8.1	9.6	9.7
Proven Reserve Additions:	-												
Gas Additions (bcf)	-	0.0	0.0	0.0	0.0	58.4	44.0	126.3	42.4	63.4	77.7	183.5	353.8
Oil Additions (mmbbls)	-	1.3	1.9	0.7	6.6	1.7	1.8	-1.3	0.7	1.3	-12.9	-10.9	-10.4
Total Additions (mmboe)	-	1.3	1.9	0.7	6.6	11.4	9.2	19.7	7.7	11.8	0.1	19.6	48.5
Addition Components (mmboe):	-												
Extensions, Discoveries and Additions	-	0.0	1.8	0.0	0.7	2.9	1.3	18.7	4.3	8.9	5.4	18.6	38.6
Net Acquisitions	-	1.4	0.0	-0.1	3.3	9.7	0.3	-0.1	0.0	0.0	-12.9	-12.9	-12.6
Revisions of Estimates	-	0.0	0.1	0.8	2.6	-1.2	7.6	1.1	3.5	2.9	7.5	13.9	22.6
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	0.0%	93.3%	0.0%	10.6%	25.5%	13.8%	94.8%	55.5%	75.2%	7969.2%	94.9%	79.5%
Net Acquisitions	-	103.3%	0.0%	-19.9%	50.2%	85.2%	3.8%	-0.3%	0.0%	0.0%	-18893.1%	-65.6%	-26.0%
Revisions of Estimates	-	-3.3%	6.7%	119.9%	39.3%	-10.7%	82.5%	5.6%	44.5%	24.8%	11023.8%	70.8%	46.5%
Additions as % of Production:													
Gas	-	0.0%	0.0%	0.0%	0.0%	2236.5%	791.0%	2363.6%	199.8%	263.9%	226.1%	230.5%	390.9%
Oil	-	1071.3%	468.5%	56.4%	387.7%	109.0%	66.9%	-47.1%	55.4%	127.2%	-1480.9%	-352.9%	-120.3%
Total	-	1071.3%	468.5%	56.4%	387.7%	577.6%	249.9%	530.3%	162.2%	236.9%	1.0%	120.0%	204.3%
Additions as % of Reserves:													
Gas	-	0.0%	0.0%	0.0%	0.0%	104.7%	46.7%	59.7%	17.5%	22.7%	24.3%	65.4%	154.2%
Oil	-	87.0%	73.3%	12.9%	63.0%	16.1%	14.5%	-15.1%	9.9%	17.5%	nm	-232.5%	-146.3%
Total	-	87.0%	73.3%	12.9%	63.0%	57.8%	32.3%	44.7%	16.4%	22.0%	0.1%	38.2%	107.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	$3	$8	$21	$20	$25	$27	$53	$37	$26	$21	$84	$164
Exploration & Development	-	$8	$16	$52	$86	$53	$106	$114	$62	$92	$79	$233	$453
Net Acquisitions	-	-$3	$0	$0	$77	$169	$55	$76	$11	$0	-$3	$8	$139
Total Expenditures	-	$8	$24	$73	$182	$246	$188	$243	$110	$118	$98	$325	$756
Expenditures as % of Total (US$million):													
Land & Seismic	-	40.8%	34.2%	28.5%	10.9%	10.1%	14.4%	21.9%	33.1%	21.9%	22.0%	25.7%	21.7%
Exploration & Development	-	98.3%	65.8%	71.5%	47.0%	21.5%	56.4%	47.0%	56.5%	78.1%	81.1%	71.7%	59.9%
Net Acquisitions	-	-39.0%	0.0%	0.0%	42.1%	68.5%	29.2%	31.1%	10.4%	0.0%	-3.1%	2.6%	18.4%
	-												
Cashflow (US$million)	-	-$4	-$4	$38	$69	$51	$76	$60	$88	$65	$103	$255	$391
Cashflow (US$/boe)	-	-$30.07	-$9.08	$31.69	$40.65	$25.91	$20.64	$16.05	$18.38	$13.00	$15.56	$15.60	$16.45
Recycle Ratio	-	-5.2x	-0.7x	0.3x	1.5x	1.2x	1.0x	1.3x	1.3x	1.3x	0.0x	0.9x	1.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-$246.12	$12.34	$89.51	$32.22	$45.92	$15.07	$8.46	$12.74	$9.94	$7.77	$9.74	$10.10
Net Acquisition Costs	-	-$2.20	na	$0.00	$23.24	$17.36	$159.58	-$1,133.93	na	na	$0.23	-$0.65	-$11.03
All Sources (incl. revisions)	-	$5.83	$12.34	$107.32	$27.71	$21.59	$20.49	$12.33	$14.22	$9.94	$1,430.92	$16.57	$15.59
Exploration & Development (excl. revisions)	-	nm	$13.23	nm	$151.85	$26.71	$105.36	$8.96	$22.97	$13.22	$18.51	$17.01	$16.01
Net Acquisition Costs	-	-$2.20	na	$0.00	$23.24	$17.36	$159.58	-$1,133.93	na	na	$0.23	-$0.65	-$11.03
All Sources (excl. revisions)	-	$5.65	$13.23	-$539.57	$45.63	$19.51	$116.98	$13.06	$25.63	$13.22	-$13.10	$56.64	$29.13
Geographically Segmented Costs													
North America	-	na	na	na	na	na	na	na	na	na	na	na	na
International	-	$5.83	$12.34	$107.32	$27.71	$21.59	$20.49	$12.33	$14.22	$9.94	$1,430.92	$16.57	$15.59

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Canacol Energy (CNE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	52.30	39.52	32.36	44.79	38.30	18.39	15.65	4.47	6.07	7.15	6.04	9.45
Exploration Expense	-	-	-	-	2.07	25.73	0.32	1.21	3.67	5.44	2.07	3.56	2.69
G&A/Other	-	53.31	22.11	11.55	10.56	11.26	7.36	6.47	4.51	5.31	4.27	4.66	5.36
F&D Costs (1-Year)	-	5.83	12.34	107.32	27.71	21.59	20.49	12.33	14.22	9.94	12.16	12.11	13.83
Return on Capital	-	4.57	4.97	30.51	10.74	13.49	9.92	9.26	8.84	6.72	6.13	7.24	8.41
Income Taxes	-	0.04	0.18	10.17	6.22	4.76	21.98	7.25	6.91	5.26	4.79	5.66	8.05
Breakeven Oil Price	**-**	**116.06**	**79.12**	**191.90**	**102.10**	**115.14**	**78.47**	**52.17**	**42.63**	**38.74**	**36.58**	**39.27**	**47.80**
Quality Differential	-	(18.28)	24.51	16.56	2.71	14.93	23.20	4.43	(6.62)	(6.48)	(8.28)	(7.12)	1.25
Required Brent Price	**-**	**97.78**	**103.63**	**208.45**	**104.81**	**130.07**	**101.67**	**56.60**	**36.01**	**32.26**	**28.30**	**32.15**	**49.05**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	52.30	39.52	32.36	44.79	44.17	22.39	18.19	4.57	8.61	12.56	8.27	12.37
Exploration Expense	-	-	-	-	2.07	29.67	0.39	1.41	3.75	7.71	3.64	4.88	3.52
G&A/Other	-	53.31	22.11	11.55	10.56	12.99	8.96	7.52	4.61	7.54	7.51	6.38	7.01
F&D Costs (1-Year)	-	5.83	12.34	107.32	27.71	44.48	47.14	32.61	14.61	14.81	14.96	14.79	22.58
Return on Capital	-	4.57	4.97	30.51	10.74	22.92	16.98	14.95	9.05	9.69	6.66	8.48	11.39
Income Taxes	-	0.04	0.18	10.17	6.22	8.09	37.62	11.69	7.08	7.58	5.21	6.63	10.90
Breakeven Oil Price	**-**	**116.06**	**79.12**	**191.90**	**102.10**	**162.31**	**133.47**	**86.37**	**43.69**	**55.95**	**50.53**	**49.44**	**67.77**
Quality Differential	-	(18.28)	24.51	16.56	2.71	17.22	28.25	5.15	(6.77)	(9.19)	(14.54)	(10.17)	0.58
Required Brent Price	**-**	**97.78**	**103.63**	**208.45**	**104.81**	**179.53**	**161.72**	**91.52**	**36.92**	**46.76**	**35.99**	**39.28**	**68.35**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	52.30	39.52	32.36	44.79	44.17	22.39	18.19	4.57	8.61	12.56	8.27	12.37
Exploration Expense	-	-	-	-	2.07	29.67	0.39	1.41	3.75	7.71	3.64	4.88	3.52
G&A/Other	-	53.31	22.11	11.55	10.56	12.99	8.96	7.52	4.61	7.54	7.51	6.38	7.01
F&D Costs (1-Year)	-	11.50	37.43	21.96	44.62	61.23	42.56	64.77	3.94	17.19	28.63	16.59	31.42
Return on Capital	-	9.01	14.98	6.27	17.30	31.29	15.38	29.70	2.44	11.24	12.80	9.49	15.76
Income Taxes	-	0.08	0.53	2.09	10.02	11.04	34.08	23.23	1.91	8.79	10.01	7.42	15.07
Breakeven Oil Price	**-**	**126.20**	**114.58**	**74.22**	**129.36**	**190.38**	**123.77**	**144.81**	**21.24**	**61.08**	**75.15**	**53.04**	**85.15**
Quality Differential	-	(18.28)	24.51	16.56	2.71	17.22	28.25	5.15	(6.77)	(9.19)	(14.54)	(10.17)	0.58
Required Brent Price	**-**	**107.92**	**139.08**	**90.78**	**132.07**	**207.60**	**152.01**	**149.96**	**14.47**	**51.89**	**60.61**	**42.87**	**85.73**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

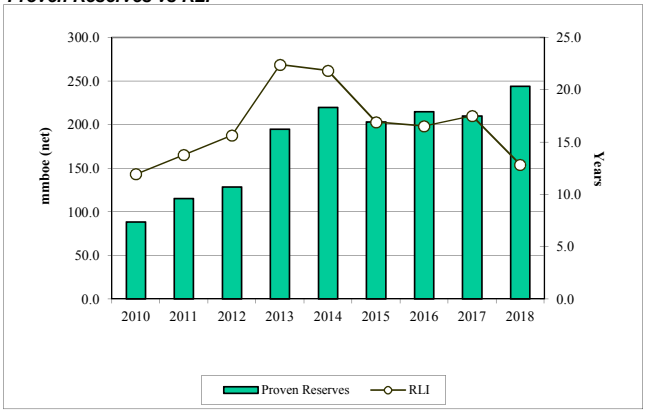
EnQuest (ENQ - LSE)

US$, net

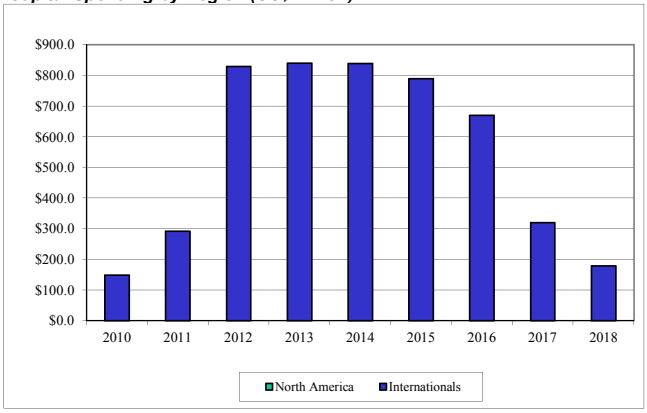
- EnQuest reported results of operations of $10.17/boe in 2018 versus $3.40/boe last year.
- The company reported ROCE of 12.2% in 2018 versus a loss of 0.8% in 2017.
- 2018 F&D costs came lower at $3.37/boe versus $45.80/boe in 2017.
- EnQuest's 2018 operations imply a required Brent breakeven oil price of $92.02/boe on a realized oil:gas price ratio basis.

Notes: Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

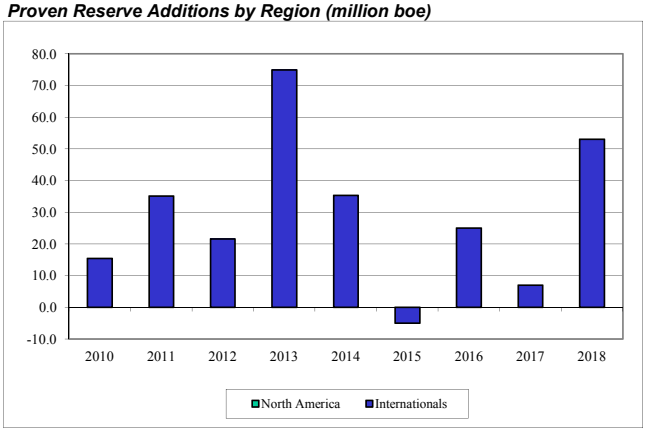
Proven Reserves vs RLI



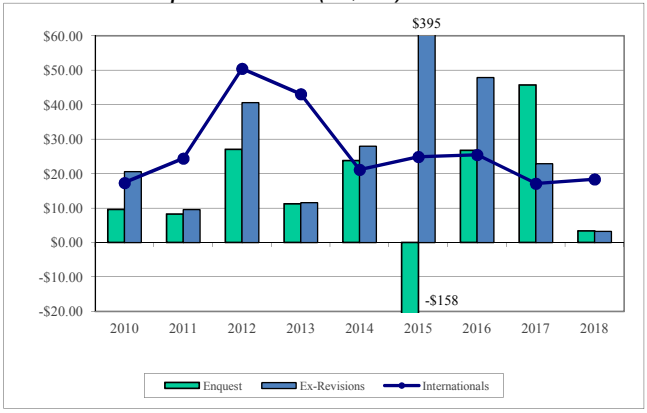
Capital Spending by Region (US$million)



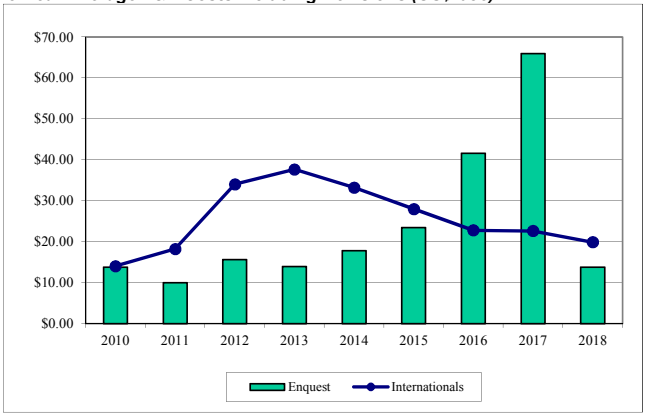
Proven Reserve Additions by Region (million boe)



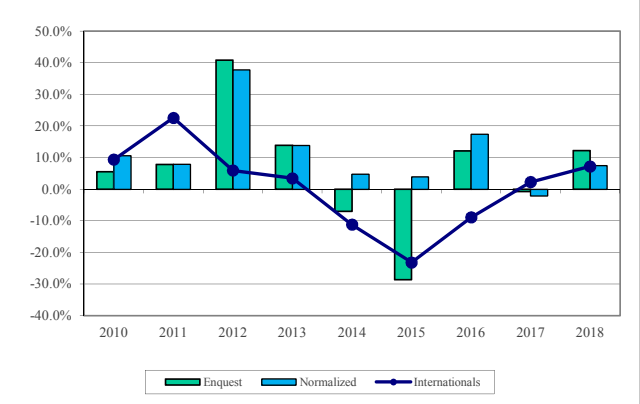
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

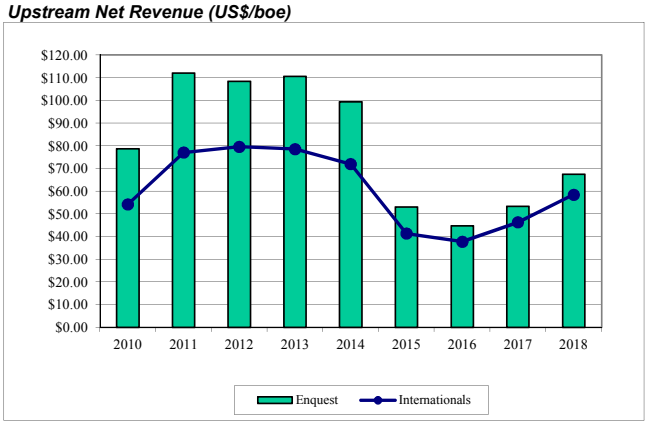
See pages F1 to F4 for analyst coverage.

EnQuest (ENQ - LSE)

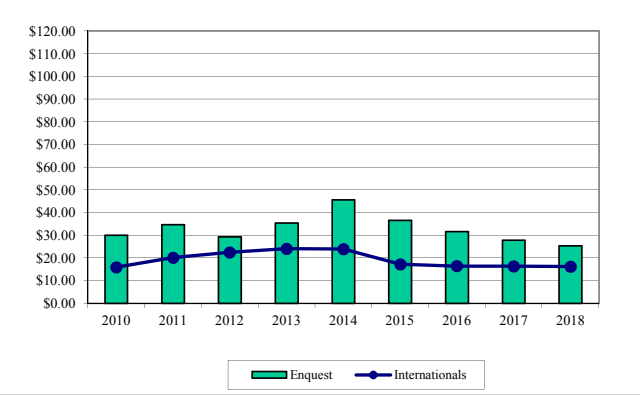
US$, net

International

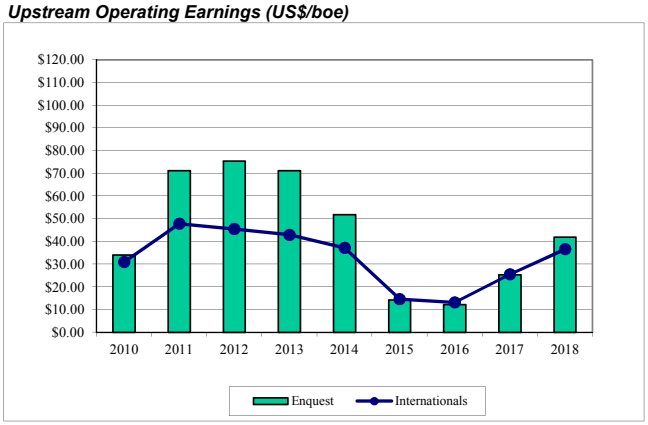
Upstream Net Revenue (US$/boe)



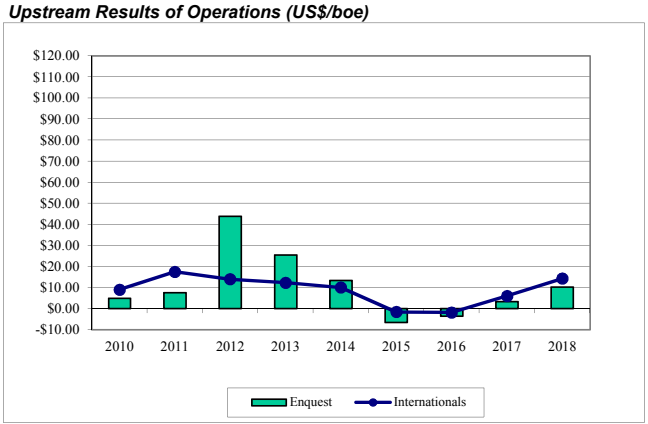
Production Costs (US$/boe)



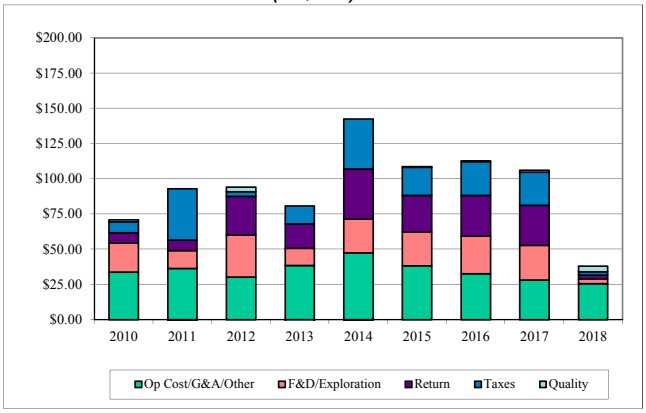
Upstream Operating Earnings (US$/boe)



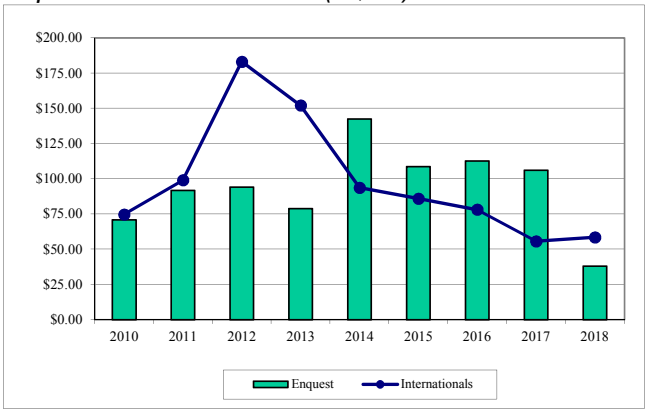
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

EnQuest (ENQ - LSE)

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	-	234	583	936	890	961	1,002	636	581	640	1,281
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	234	583	936	890	961	1,002	636	581	640	1,281
Costs and Expenses:											
Crude Oil and Product Purchases	-	141	223	290	240	308	460	439	411	335	482
Production and Transportation Expenses	-	-	-	-	-	-	-	-	-	-	-
Marketing Expenses	-	6	81	37	23	9	4	8	1	0	(1)
Exploration / Dry Hole Costs	-	0	27	14	7	25	16	18	11	1	4
General and Administrative	-	52	178	219	218	233	252	310	246	229	442
Depreciation, Depletion and Amortization	-	-	-	-	-	-	-	-	-	-	-
Interest, net	-	6	10	(15)	19	35	101	226	128	147	233
Other	-	18	9	28	(21)	21	748	978	(431)	171	27
Earnings Before Income Tax	-	11	56	363	403	331	(579)	(1,341)	217	(244)	94
Income Taxes:											
Current Income Taxes	-	8	2	2	4	10	6	11	10	11	34
Future Income Taxes	-	(5)	26	300	38	132	(408)	(593)	22	(194)	(68)
Total Income Taxes	-	3	29	302	41	141	(402)	(581)	32	(183)	(33)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	8	27	61	362	190	(176)	(759)	185	(61)	127
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	8	27	61	362	190	(176)	(759)	185	(61)	127
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	8	27	61	362	190	(176)	(759)	185	(61)	127

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	-	8	27	61	362	190	(176)	(759)	185	(61)	127
Charges and Credits Not Impacting Cash	-	59	261	268	385	235	1,083	1,543	99	401	444
Other	-	11	43	308	(98)	205	(351)	(542)	95	(88)	177
Cash Flow From Operations	-	78	331	637	650	629	556	242	378	252	748
Change in Working Capital / Other	-	(20)	(68)	(1)	(70)	(78)	162	2	1	50	46
Net Cash From Operating Activities	-	58	263	636	580	551	718	245	379	302	794
Total Capital Expenditures	-	(66)	(155)	(278)	(967)	(987)	(1,060)	(827)	(611)	(368)	(220)
Acquisitions, net	-	-	22	-	-	-	(58)	(3)	1	-	-
Other	-	-	0	1	125	3	(97)	76	0	4	(147)
Net Cash From Investing Activities	-	(66)	(133)	(277)	(841)	(984)	(1,215)	(754)	(609)	(364)	(367)
Financing Activities:											
Net Change in Debt	-	14	(86)	-	35	429	692	688	165	112	(327)
Net Change in Common Stock	-	-	-	(13)	(10)	(7)	(16)	-	77	(1)	129
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	(3)	(8)	(10)	(15)	(45)	(67)	(91)	(93)	(52)	(157)
Net Cash From Financing Activities	-	11	(95)	(23)	10	377	609	596	149	58	(355)
Effect of Exchange Rate on Cash	-	1	(1)	1	(2)	4	(8)	(2)	(9)	5	(5)
Net Increase/(Decrease) in Cash	-	4	34	338	(254)	(52)	104	86	(89)	2	68
Cash and Equivalents, Beginning of Year	-	4	8	41	379	125	73	172	258	172	173
Cash and Equivalents, End of Year	-	8	41	379	125	73	177	258	168	173	241

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

EnQuest (ENQ - LSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	46	161	522	478	402	665	951	493	542	684
Net Property, Plant and Equipment	-	519	1,136	1,274	1,817	2,871	3,116	2,437	2,963	3,849	4,350
Other Assets	-	93	142	153	250	278	315	390	470	648	628
Total Assets	-	657	1,440	1,949	2,545	3,550	4,096	3,777	3,926	5,038	5,662
Liabilities and Stockholders' Equity											
Total Current Liabilities	-	35	125	243	351	542	543	579	538	920	985
Long-term Debt	-	156	-	-	35	199	1,110	1,777	1,908	2,503	2,342
Deferred Income Taxes	-	252	292	590	632	761	503	59	15	63	28
Other Liabilities and Deferred Credits	-	53	140	182	233	564	580	694	647	792	1,324
Total Liabilities	-	497	557	1,014	1,251	2,066	2,736	3,110	3,107	4,278	4,678
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Stockholders' Equity											
Common Shares	-	32	61	61	61	61	61	61	83	85	118
Contributed Surplus (Paid-in Capital)	-	-	52	52	52	52	52	52	125	125	227
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	77	104	166	529	718	542	(231)	(46)	(107)	(107)
Other / Comprehensive Income (Loss)	-	51	665	654	652	653	705	785	656	657	745
Total Shareholders' Equity	-	160	883	934	1,294	1,485	1,360	667	819	761	984
Total Liabilities and Shareholders' Equity	-	657	1,440	1,949	2,545	3,550	4,096	3,777	3,926	5,038	5,662
Return on Capital Employed (ROCE)	-	**3.9%**	**5.5%**	**7.8%**	**40.9%**	**13.9%**	**-7.0%**	**-28.6%**	**12.1%**	**-0.8%**	**12.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	$78.74	$111.96	$108.34	$110.61	$99.43	$53.02	$44.73	$53.32	$67.40	$56.86	$62.66
Production Costs	-	-	$30.06	$34.66	$29.25	$35.47	$45.62	$36.57	$31.58	$27.90	$25.36	$27.89	$32.17
Exploration	-	-	$10.91	$4.42	$2.82	$0.99	$0.40	$0.63	$0.04	$0.02	-$0.07	-$0.01	$0.17
DD&A	-	-	$24.03	$26.20	$26.59	$26.76	$25.00	$25.81	$18.91	$19.10	$23.28	$20.85	$22.38
G&A / Other	-	-	$3.67	$1.65	$0.81	$2.88	$1.63	$1.50	$0.84	$0.07	$0.21	$0.36	$0.76
Pre-tax Results of Operations	-	-	$10.07	$45.03	$48.88	$44.51	$26.77	-$11.48	-$6.64	$6.22	$18.62	$7.77	$7.18
Income Taxes	-	-	$5.18	$37.46	$4.99	$19.01	$13.39	-$4.98	-$3.01	$2.82	$8.44	$3.53	$3.29
Results of Operations	-	-	$4.89	$7.57	$43.89	$25.50	$13.39	-$6.50	-$3.63	$3.40	$10.17	$4.25	$3.88

Source: BMO Capital Markets, Company Reports

EnQuest (ENQ - LSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquids Production (b/d)	-	-	20,301	22,904	22,493	23,808	27,616	32,877	35,616	32,877	52,055	40,183	36,208
Total Production (boe/d)	-	-	20,301	22,904	22,493	23,808	27,616	32,877	35,616	32,877	52,055	40,183	36,208
% Gas Production	-	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Production	-	-	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Oil Reserves (mmbbls)	-	-	88.5	115.2	128.5	194.8	220.0	203.0	215.0	210.0	244.0	223.0	218.4
Closing Total Proven Reserves (mmboe)	-	-	88.5	115.2	128.5	194.8	220.0	203.0	215.0	210.0	244.0	223.0	218.4
% Gas Reserves	-	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	-	-	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	-	-	11.9	13.8	15.7	22.4	21.8	16.9	16.5	17.5	12.8	15.6	17.1
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil Additions (mmbbls)	-	-	15.4	35.1	21.5	74.9	35.3	-5.0	25.0	7.0	53.0	85.0	115.3
Total Additions (mmboe)	-	-	15.4	35.1	21.5	74.9	35.3	-5.0	25.0	7.0	53.0	85.0	115.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0	29.7	20.4	67.0	7.3	0.0	0.0	0.0	0.0	0.0	7.3
Net Acquisitions	-	-	7.2	0.8	-9.1	5.5	22.8	2.0	14.0	14.0	55.0	83.0	107.8
Revisions of Estimates	-	-	8.2	4.6	10.2	2.4	5.3	-7.0	11.0	-7.0	-2.0	2.0	0.3
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0%	84.7%	94.8%	89.5%	20.5%	0.0%	0.0%	0.0%	0.0%	0.0%	6.3%
Net Acquisitions	-	-	46.7%	2.3%	-42.3%	7.3%	64.4%	-40.0%	56.0%	200.0%	103.8%	97.6%	93.4%
Revisions of Estimates	-	-	53.3%	13.0%	47.5%	3.2%	15.1%	140.0%	44.0%	-100.0%	-3.8%	2.4%	0.3%
Additions as % of Production:													
Gas	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	-	-	208.1%	419.4%	262.1%	862.3%	350.5%	-41.7%	192.3%	58.3%	278.9%	193.2%	174.5%
Total	-	-	208.1%	419.4%	262.1%	862.3%	350.5%	-41.7%	192.3%	58.3%	278.9%	193.2%	174.5%
Additions as % of Reserves:													
Gas	-	-	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	0.0%
Oil	-	-	17.4%	30.4%	16.7%	38.5%	16.1%	-2.5%	11.6%	3.3%	21.7%	38.1%	52.8%
Total	-	-	17.4%	30.4%	16.7%	38.5%	16.1%	-2.5%	11.6%	3.3%	21.7%	38.1%	52.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	-	-	$148	$292	$829	$841	$840	$790	$670	$321	$179	$1,170	$2,799
Net Acquisitions	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	-	-	$148	$292	$829	$841	$840	$790	$670	$321	$179	$1,170	$2,799
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	-	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-	-	$331	$637	$650	$629	$556	$242	$378	$252	$748	$1,378	$2,176
Cashflow (US$/boe)	-	-	$44.64	$76.24	$79.15	$72.44	$55.13	$20.17	$29.11	$20.97	$39.38	$31.33	$32.93
Recycle Ratio	-	-	4.6x	9.2x	2.9x	6.5x	2.3x	-0.1x	1.1x	0.5x	11.7x	2.3x	1.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	$18.06	$8.52	$27.08	$12.10	$66.73	-$112.81	$60.94	-$45.80	-$89.31	$584.80	$369.23
Net Acquisition Costs	-	-	$0.00	$0.00	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	-	-	$9.63	$8.32	$27.08	$11.22	$23.76	-$157.93	$26.81	$45.80	$3.37	$13.76	$24.27
Exploration & Development (excl. revisions)	-	-	nm	$9.83	$40.66	$12.54	$115.80	nm	nm	nm	nm	nm	$386.04
Net Acquisition Costs	-	-	$0.00	$0.00	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	-	-	$20.62	$9.56	$40.66	$11.60	$27.98	$394.84	$47.88	$22.90	$3.25	$14.09	$24.34
Geographically Segmented Costs													
North America	-	-	na	na	na	na	na	na	na	na	na	na	na
International	-	-	$9.63	$8.32	$27.08	$11.22	$23.76	-$157.93	$26.81	$45.80	$3.37	$13.76	$24.27

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

EnQuest (ENQ - LSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	30.06	34.66	29.25	35.47	45.62	36.57	31.58	27.90	25.36	27.89	32.17
Exploration Expense	-	-	10.91	4.42	2.82	0.99	0.40	0.63	0.04	0.02	(0.07)	(0.01)	0.17
G&A/Other	-	-	3.67	1.65	0.81	2.88	1.63	1.50	0.84	0.07	0.21	0.36	0.76
F&D Costs (1-Year)	-	-	9.63	8.32	27.08	11.22	23.76	23.46	26.81	24.68	3.37	18.29	20.42
Return on Capital	-	-	7.28	7.35	27.54	17.29	35.49	26.02	28.85	28.35	2.76	18.61	22.99
Income Taxes	-	-	7.72	36.39	3.13	12.89	35.49	19.92	23.95	23.53	2.29	15.44	19.49
Breakeven Oil Price	**-**	**-**	**69.28**	**92.79**	**90.64**	**80.74**	**142.39**	**108.11**	**112.07**	**104.55**	**33.92**	**80.57**	**96.00**
Quality Differential	-	-	1.60	(1.01)	3.35	(1.88)	(0.04)	0.54	0.40	1.47	4.11	1.99	1.29
Required Brent Price	**-**	**-**	**70.89**	**91.79**	**93.98**	**78.86**	**142.35**	**108.64**	**112.47**	**106.03**	**38.02**	**82.57**	**97.29**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	30.06	34.66	29.25	35.47	45.62	36.57	31.58	27.90	25.36	27.89	32.17
Exploration Expense	-	-	10.91	4.42	2.82	0.99	0.40	0.63	0.04	0.02	(0.07)	(0.01)	0.17
G&A/Other	-	-	3.67	1.65	0.81	2.88	1.63	1.50	0.84	0.07	0.21	0.36	0.76
F&D Costs (1-Year)	-	-	9.63	8.32	27.08	11.22	23.76	23.46	26.81	24.68	24.99	25.49	24.74
Return on Capital	-	-	7.28	7.35	27.54	17.29	35.49	26.02	28.85	28.35	20.45	25.87	27.76
Income Taxes	-	-	7.72	36.39	3.13	12.89	35.49	19.92	23.95	23.53	16.98	21.47	23.54
Breakeven Oil Price	**-**	**-**	**69.28**	**92.79**	**90.64**	**80.74**	**142.39**	**108.11**	**112.07**	**104.55**	**87.92**	**101.08**	**109.15**
Quality Differential	-	-	1.60	(1.01)	3.35	(1.88)	(0.04)	0.54	0.40	1.47	4.11	1.99	1.29
Required Brent Price	**-**	**-**	**70.89**	**91.79**	**93.98**	**78.86**	**142.35**	**108.64**	**112.47**	**106.03**	**92.02**	**103.07**	**110.44**

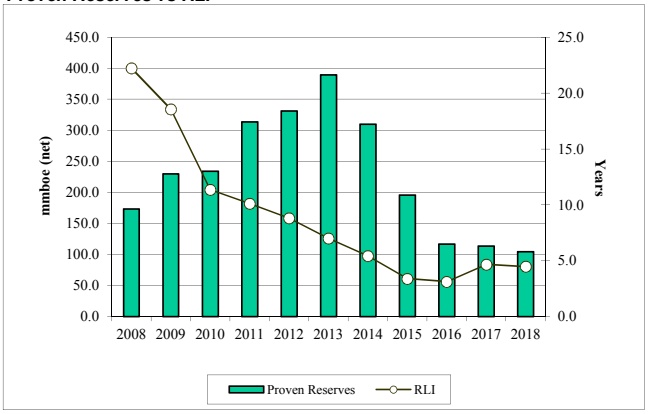
Source: BMO Capital Markets, Company Reports

Frontera Energy Corporation (FEC - TSX)

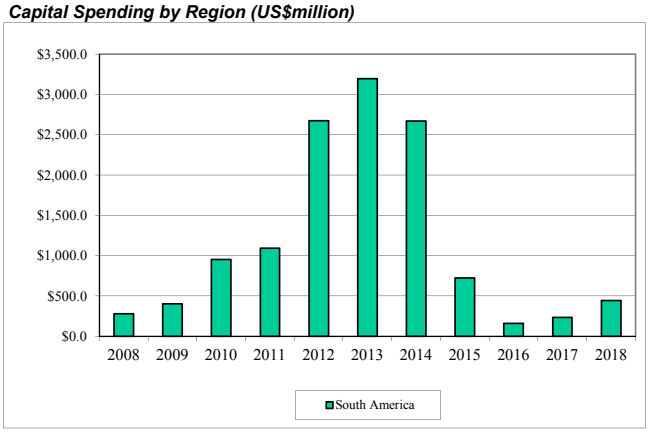
US$, net

- Frontera reported results from operations of $7.47/boe compared to a loss of $4.22/boe in 2017.
- The company reported a loss on capital employed of 20.1% in 2018. Excluding extraordinary charges, normalized loss came in at 0.1%.
- 2018 F&D costs came in at $38.13/boe. On a realized ratio basis, F&D costs came in at $40.78/boe.
- Frontera's 2018 operations imply a required Brent breakeven oil price of $106.54/boe on a realized ratio basis.

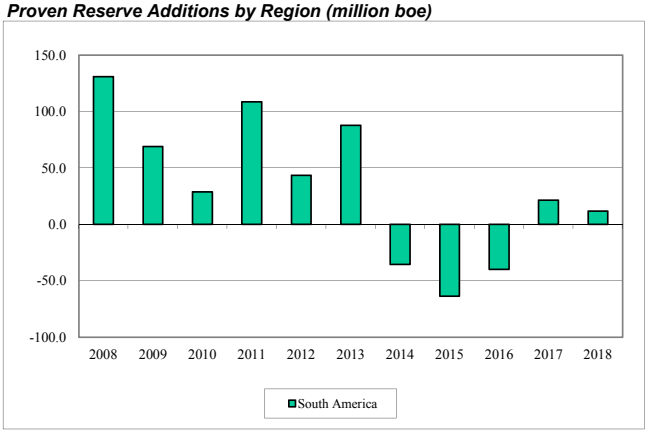
Proven Reserves vs RLI



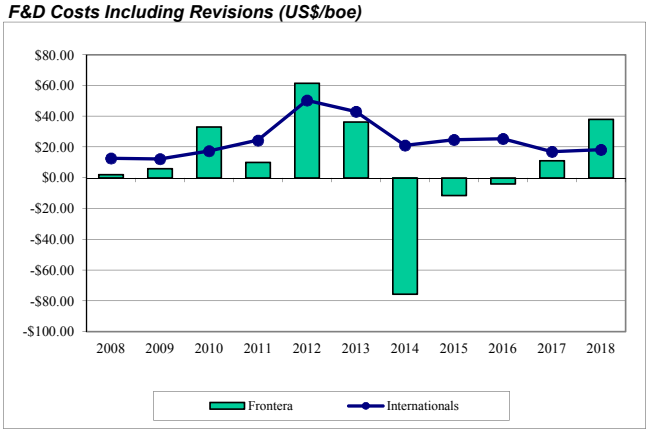
Capital Spending by Region (US$million)



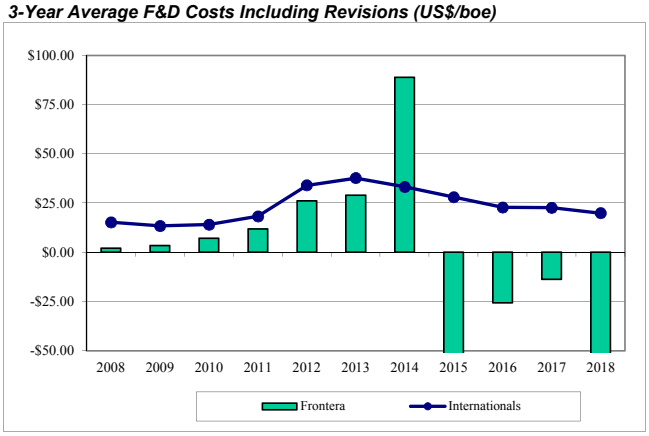
Proven Reserve Additions by Region (million boe)



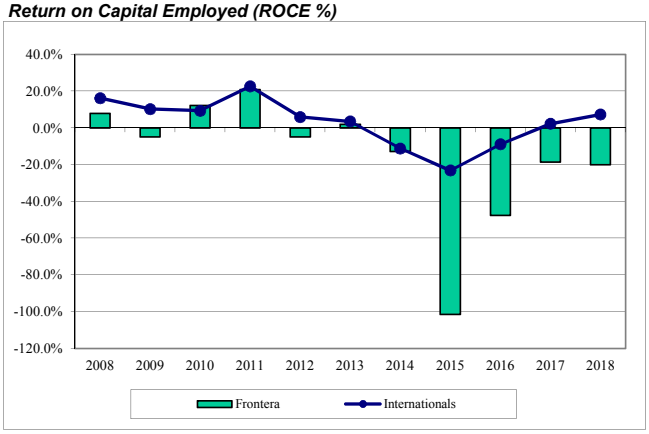
F&D Costs Including Revisions (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



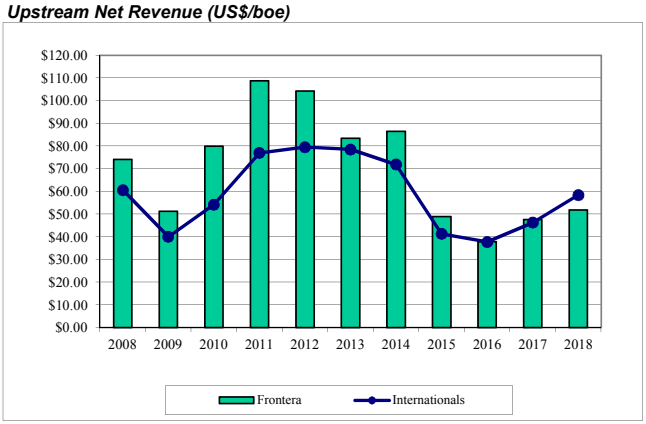
Source: BMO Capital Markets, Company Reports

Frontera Energy Corporation (FEC - TSX)

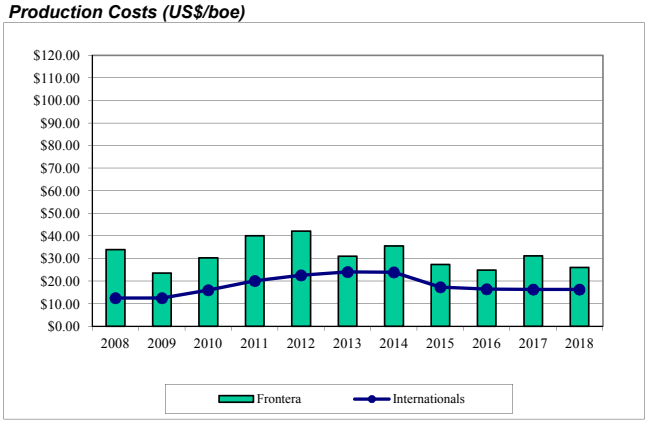
US$, net

International

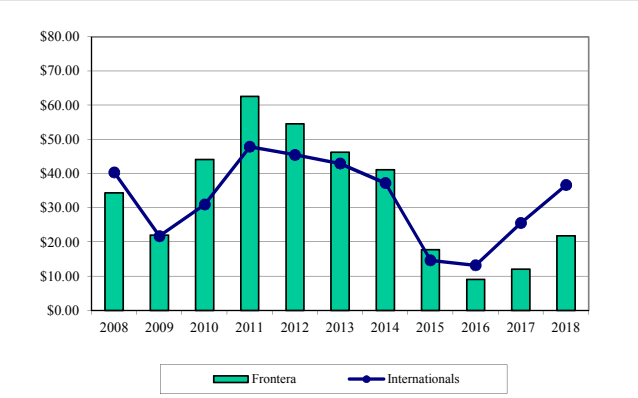
Upstream Net Revenue (US$/boe)



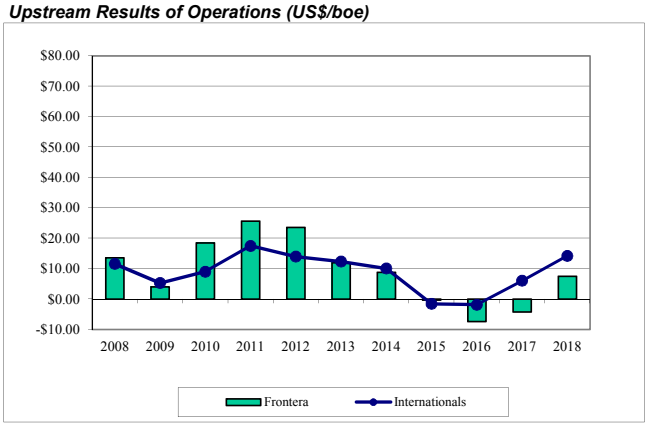
Production Costs (US$/boe)



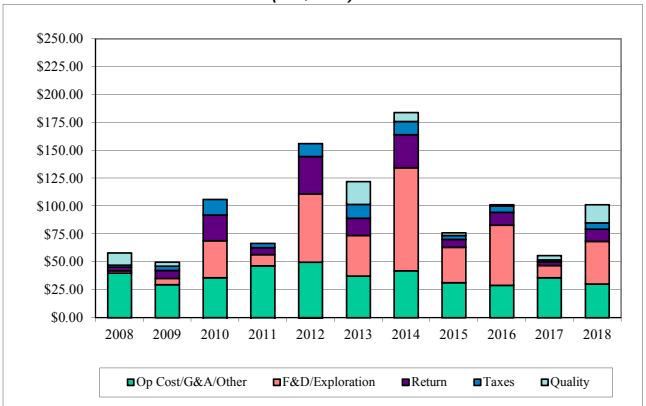
Upstream Operating Earnings (US$/boe)



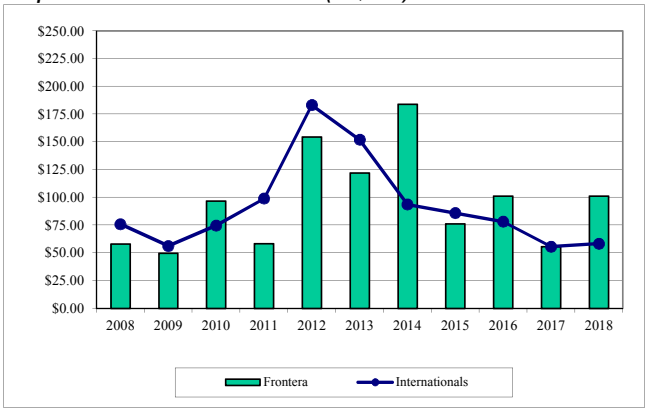
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Frontera Energy Corporation (FEC - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	579	639	1,662	3,381	3,885	4,627	4,950	2,825	1,412	1,164	1,317
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(7)	(22)	(40)	9	68	(2)	(8)	129	(139)	(72)	3
Total Revenue and Other Income	572	618	1,621	3,390	3,953	4,624	4,942	2,954	1,272	1,092	1,320
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	3
Production and Transportation Expenses	266	292	627	1,246	1,586	1,723	2,027	1,579	928	763	609
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	193	-	-	-	-
General and Administrative	45	72	112	189	280	337	361	221	145	105	93
Depreciation, Depletion and Amortization	105	196	299	656	851	1,379	1,642	1,529	576	382	317
Interest, net	12	48	76	86	91	162	261	435	191	24	27
Other	(2)	117	87	210	1,315	414	1,605	5,139	(3,067)	(8)	512
Earnings Before Income Tax	147	(108)	421	1,002	(171)	608	(1,146)	(5,949)	2,500	(175)	(240)
Current Income Taxes	69	30	171	383	110	462	159	50	43	36	31
Future Income Taxes	-	16	32	65	179	43	29	(517)	(6)	(21)	(12)
Total Income Taxes	69	46	203	448	290	505	189	(467)	36	15	19
Minority Interest	(1)	-	-	-	-	-	25	21	(15)	(27)	(0)
Earnings From Continuing Operations	77	(154)	218	554	(461)	103	(1,310)	(5,462)	2,449	(217)	(259)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	77	(154)	218	554	(461)	103	(1,310)	(5,462)	2,449	(217)	(259)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	77	(154)	218	554	(461)	103	(1,310)	(5,462)	2,449	(217)	(259)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	77	(154)	218	554	(461)	103	(1,310)	(5,462)	2,449	(217)	(259)
Charges and Credits Not Impacting Cash	162	212	330	591	774	1,423	3,296	5,896	1,047	485	626
Other	20	140	114	223	1,075	387	35	218	(3,468)	86	(60)
Cash Flow From Operations	258	198	662	1,369	1,388	1,913	2,021	653	27	354	308
Change in Working Capital / Other	14	(87)	167	(150)	415	(276)	83	(433)	(144)	2	4
Net Cash From Operating Activities	272	111	829	1,219	1,803	1,637	2,104	220	(117)	356	312
Total Capital Expenditures	(281)	(393)	(911)	(1,153)	(1,512)	(2,473)	(2,575)	(718)	(172)	(225)	(503)
Acquisitions, net	(148)	(7)	(32)	-	(200)	(932)	25	-	2	37	123
Other	(116)	49	4	(241)	(686)	1	(0)	14	(75)	(16)	(4)
Net Cash From Investing Activities	(545)	(350)	(939)	(1,394)	(2,397)	(3,405)	(2,551)	(705)	(244)	(203)	(383)
Net Change in Debt	213	426	70	(93)	198	2,406	276	552	(38)	(7)	42
Net Change in Common Stock	-	-	-	-	-	(35)	(166)	-	-	-	(18)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	(25)	(102)	(130)	(196)	(208)	-	-	-	-
Other	41	123	228	508	47	(4)	256	(32)	438	(22)	(25)
Net Cash From Financing Activities	254	549	273	313	115	2,170	158	520	400	(28)	(1)
Effect of Exchange Rate on Cash	(31)	(2)	7	(11)	(6)	(13)	(10)	(26)	8	(2)	7
Net Increase/(Decrease) in Cash	(50)	308	170	127	(486)	389	(299)	9	46	123	(66)
Cash and Equivalents, Beginning of Year	141	90	438	603	730	244	633	334	343	389	512
Cash and Equivalents, End of Year	90	399	608	730	244	633	334	343	389	512	446

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Frontera Energy Corporation (FEC - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	190	594	984	1,710	1,238	2,269	1,547	1,285	831	991	821
Net Property, Plant and Equipment	1,908	1,991	2,384	2,921	4,710	7,623	7,530	1,937	1,245	924	972
Other Assets	201	177	487	818	1,139	1,318	1,084	764	665	664	498
Total Assets	2,299	2,763	3,855	5,449	7,087	11,210	10,162	3,986	2,742	2,580	2,291
Total Current Liabilities	220	222	802	1,160	1,501	2,368	2,360	6,740	626	681	605
Long-term Debt	144	608	621	922	1,185	3,818	4,332	-	269	265	347
Deferred Income Taxes	421	383	345	284	246	547	524	6	246	-	-
Other Liabilities and Deferred Credits	15	49	53	174	182	250	291	230	-	237	232
Total Liabilities	798	1,262	1,820	2,541	3,113	6,983	7,507	6,976	1,141	1,183	1,184
Minority Interests	1	-	-	-	-	31	187	109	105	111	85
Common Shares	1,254	1,431	1,758	2,026	2,624	2,668	2,610	2,616	4,745	4,745	4,728
Contributed Surplus (Paid-in Capital)	159	137	112	146	157	158	129	124	124	127	117
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	87	(67)	153	756	1,155	1,389	(125)	(5,587)	(3,138)	(3,355)	(3,638)
Other / Comprehensive Income (Loss)	0	0	12	(20)	38	(19)	(147)	(253)	(235)	(232)	(184)
Total Shareholders' Equity	1,500	1,501	2,035	2,908	3,974	4,196	2,468	(3,099)	1,496	1,286	1,022
Total Liabilities and Shareholders' Equity	2,299	2,763	3,855	5,449	7,087	11,210	10,162	3,986	2,742	2,580	2,291

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$74.20	$51.35	$79.93	$108.86	$104.25	$83.43	$86.59	$48.93	$37.90	$47.68	$51.87	$44.55	$57.79
Production Costs	$34.02	$23.55	$30.37	$40.16	$42.24	$31.07	$35.65	$27.36	$24.91	$31.28	$26.05	$27.05	$29.59
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$3.40	$0.00	$0.00	$0.00	$0.00	$0.00	$0.97
DD&A	$13.41	$15.83	$14.47	$21.17	$22.67	$24.87	$28.88	$26.49	$15.46	$15.66	$13.54	$14.99	$22.27
G&A / Other	$5.83	$5.80	$5.42	$6.09	$7.45	$6.07	$6.35	$3.84	$3.88	$4.29	$3.98	$4.03	$4.63
Pre-tax Results of Operations	$20.94	$6.18	$29.67	$41.45	$31.89	$21.41	$12.31	-$8.75	-$6.35	-$3.56	$8.30	-$1.52	$0.33
Income Taxes	$7.33	$2.16	$11.25	$15.77	$8.27	$9.50	$3.48	-$8.41	$1.03	$0.66	$0.84	-$0.50	$0.10
Results of Operations	$13.61	$4.02	$18.42	$25.68	$23.61	$11.91	$8.82	-$0.34	-$7.38	-$4.22	$7.47	-$1.02	$0.22

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Frontera Energy Corporation (FEC - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	37.1	41.8	61.0	61.0	59.2	54.2	62.1	53.5	50.4	32.9	23.9	35.7	39.2
Liquids Production (b/d)	15,201	26,991	46,385	74,801	93,027	142,908	145,373	149,249	93,652	61,399	60,097	71,716	87,223
Total Production (boe/d)	21,382	33,953	56,545	84,970	102,899	151,948	155,730	158,159	102,045	66,875	64,074	77,665	93,764
% Gas Production	29%	21%	18%	12%	10%	6%	7%	6%	8%	8%	6%	8%	7%
% Oil Production	71%	79%	82%	88%	90%	94%	93%	94%	92%	92%	94%	92%	93%
Proven Reserves:													
Closing Gas Reserves (bcf)	407.3	415.6	454.3	443.1	509.2	549.6	562.0	229.5	38.6	11.0	9.4	19.7	61.6
Closing Oil Reserves (mmbbls)	105.7	160.9	158.7	239.9	246.3	297.6	216.3	157.5	110.5	112.2	103.2	108.6	118.4
Closing Total Proven Reserves (mmboe)	173.5	230.2	234.5	313.7	331.2	389.2	310.0	195.7	116.9	114.0	104.8	111.9	128.7
% Gas Reserves	39%	30%	32%	24%	26%	24%	30%	20%	6%	2%	1%	3%	6%
% Oil Reserves	61%	70%	68%	76%	74%	76%	70%	80%	94%	98%	99%	97%	94%
Proven Reserve Life Index	21.9	18.3	11.1	10.0	8.7	6.9	5.3	3.3	3.1	4.7	4.5	4.1	4.0
Proven Reserve Additions:													
Gas Additions (bcf)	420.8	27.4	60.4	16.3	82.1	57.2	-1.5	-313.3	-172.5	-15.6	7.1	-181.0	-135.0
Oil Additions (mmbbls)	60.8	64.4	18.9	105.9	29.9	78.3	-35.0	-11.5	-11.2	24.0	10.5	23.3	7.0
Total Additions (mmboe)	130.9	69.0	28.9	108.6	43.6	87.9	-35.3	-63.7	-39.9	21.4	11.7	-6.8	-15.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	13.9	54.2	26.7	61.4	17.0	47.9	-10.1	10.2	3.0	15.7	2.3	21.0	10.5
Net Acquisitions	69.2	0.0	0.0	0.0	40.5	20.2	8.5	12.8	0.0	-0.2	0.0	-0.2	2.5
Revisions of Estimates	47.8	14.8	2.2	47.2	-14.0	19.8	-33.7	-86.6	-42.9	5.8	9.4	-27.7	-28.4
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	10.6%	78.5%	92.5%	56.5%	39.0%	54.5%	28.5%	-16.0%	-7.5%	73.6%	19.9%	-307.4%	-47.5%
Net Acquisitions	52.9%	0.0%	0.0%	0.0%	93.0%	23.0%	-24.0%	-20.0%	0.0%	-0.8%	0.0%	2.5%	-3.7%
Revisions of Estimates	36.5%	21.5%	7.5%	43.5%	-32.0%	22.5%	95.5%	136.0%	107.5%	27.2%	80.1%	404.9%	151.1%
Additions as % of Production:													
Gas	nm	179.9%	271.5%	73.1%	379.5%	289.0%	-6.7%	-1605.5%	-938.3%	-130.3%	81.5%	-463.1%	-188.6%
Oil	1095.7%	653.9%	111.3%	387.9%	88.1%	150.2%	-66.1%	-21.1%	-32.7%	107.0%	47.9%	29.7%	4.4%
Total	1677.6%	556.7%	140.1%	350.3%	116.1%	158.5%	-62.1%	-110.3%	-107.2%	87.5%	50.0%	-8.1%	-9.0%
Additions as % of Reserves:													
Gas	103.3%	6.6%	13.3%	3.7%	16.1%	10.4%	-0.3%	-136.5%	-446.5%	-141.9%	75.5%	-919.8%	-313.8%
Oil	57.5%	40.0%	11.9%	44.1%	12.1%	26.3%	-16.2%	-7.3%	-10.1%	21.4%	10.2%	21.5%	7.1%
Total	75.4%	30.0%	12.3%	34.6%	13.2%	22.6%	-11.4%	-32.5%	-34.1%	18.7%	11.2%	-6.1%	-8.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$72	$48	$113	$267	$355	$593	$561	$172	$29	$29	$97	$155	$96
Exploration & Development	$209	$355	$842	$765	$1,193	$1,473	$1,821	$553	$132	$200	$350	$682	$383
Net Acquisitions	$0	$0	$0	$63	$1,128	$1,134	$289	$0	$0	$7	$0	$7	$3
Total Expenditures	$281	$404	$954	$1,096	$2,676	$3,199	$2,672	$726	$161	$236	$446	$844	$483
Expenditures as % of Total (US$million):													
Land & Seismic	25.5%	12.0%	11.8%	24.4%	13.3%	18.5%	21.0%	23.8%	18.2%	12.3%	21.6%	18.4%	18.9%
Exploration & Development	74.5%	88.0%	88.2%	69.8%	44.6%	46.0%	68.2%	76.2%	81.8%	84.7%	78.4%	80.8%	80.4%
Net Acquisitions	0.0%	0.0%	0.0%	5.8%	42.2%	35.4%	10.8%	0.0%	0.0%	3.0%	0.0%	0.8%	0.8%
Cashflow (US$million)	$258	$198	$662	$1,369	$1,388	$1,913	$2,021	$653	$27	$354	$308	$688	$2,029
Cashflow (US$/boe)	$33.06	$15.99	$32.08	$44.13	$36.94	$34.49	$35.56	$11.31	$0.73	$14.49	$13.16	$8.09	$11.86
Recycle Ratio	15.4x	2.7x	1.0x	4.4x	0.6x	0.9x	-0.5x	-1.0x	-0.2x	1.3x	0.3x	-0.1x	0.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$4.55	$5.85	$33.00	$9.51	$506.36	$30.52	-$54.42	-$9.49	-$4.05	$10.65	$38.13	-$125.32	-$18.02
Net Acquisition Costs	$0.00	na	na	na	$27.83	$56.11	$34.14	$0.00	na	-$41.62	na	-$41.62	-$27.75
All Sources (incl. revisions)	$2.14	$5.85	$33.00	$10.09	$61.40	$36.40	-$75.68	-$11.39	-$4.05	$11.06	$38.13	-$123.26	-$17.90
Exploration & Development (excl. revisions)	$20.27	$7.45	$35.68	$16.82	$91.00	$43.14	-$236.87	$71.25	$54.08	$14.58	$191.31	$39.76	$74.20
Net Acquisition Costs	$0.00	na	na	na	$27.83	$56.11	$34.14	$0.00	na	-$41.62	na	-$41.62	-$27.75
All Sources (excl. revisions)	$3.38	$7.45	$35.68	$17.85	$46.51	$46.99	-$1,685.36	$31.62	$54.08	$15.19	$191.31	$40.42	$66.53
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
Colombia	$2.14	$5.85	$33.00	$10.09	$61.40	$36.40	-$75.68	-$11.39	-$4.05	$11.06	$38.13	-$126.38	-$18.52

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Frontera Energy Corporation (FEC - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	34.02	23.55	30.37	40.16	42.24	31.07	35.65	27.36	24.91	31.28	26.05	27.05	29.59
Exploration Expense	-	-	-	-	-	-	3.40	-	-	-	-	-	0.97
G&A/Other	5.83	5.80	5.42	6.09	7.45	6.07	6.35	3.84	3.88	4.29	3.98	4.03	4.63
F&D Costs (1-Year)	2.14	5.85	33.00	10.09	61.40	36.40	88.87	31.62	54.08	11.06	38.13	34.42	44.75
Return on Capital	3.20	7.08	23.10	6.30	33.34	15.60	29.82	7.21	11.59	3.36	11.17	9.21	12.29
Income Taxes	1.73	3.81	14.10	3.87	11.68	12.45	11.77	3.53	5.67	1.65	5.47	4.51	5.77
Breakeven Oil Price	**46.92**	**46.09**	**105.99**	**66.50**	**156.11**	**101.59**	**175.86**	**73.56**	**100.13**	**51.64**	**84.80**	**79.21**	**98.01**
Quality Differential	11.10	3.56	(9.29)	(8.30)	(1.64)	20.17	7.89	2.50	1.06	3.95	16.32	7.11	6.34
Required Brent Price	**58.02**	**49.65**	**96.70**	**58.20**	**154.47**	**121.76**	**183.74**	**76.06**	**101.19**	**55.59**	**101.11**	**86.32**	**104.35**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	40.60	26.57	34.00	43.43	44.68	32.27	37.26	27.91	25.73	32.77	27.13	28.12	30.64
Exploration Expense	-	-	-	-	-	-	3.56	-	-	-	-	-	1.00
G&A/Other	6.96	6.54	6.07	6.58	7.88	6.30	6.63	3.91	4.01	4.50	4.14	4.19	4.80
F&D Costs (1-Year)	3.07	6.07	41.60	10.25	74.72	39.05	103.46	31.62	54.08	10.36	40.78	35.07	48.06
Return on Capital	4.31	6.96	26.83	5.98	37.18	15.21	30.63	6.98	11.79	3.23	12.22	9.58	12.87
Income Taxes	2.32	3.75	16.38	3.67	13.03	12.13	12.09	3.42	5.77	1.58	5.98	4.69	6.04
Breakeven Oil Price	**57.25**	**49.89**	**124.88**	**69.92**	**177.48**	**104.96**	**193.63**	**73.85**	**101.38**	**52.44**	**90.24**	**81.65**	**103.41**
Quality Differential	18.38	5.93	(9.32)	(8.13)	0.59	21.45	8.06	3.63	2.18	4.81	16.30	7.76	7.00
Required Brent Price	**75.63**	**55.82**	**115.56**	**61.79**	**178.08**	**126.41**	**201.70**	**77.48**	**103.57**	**57.25**	**106.54**	**89.41**	**110.41**

Source: BMO Capital Markets, Company Reports

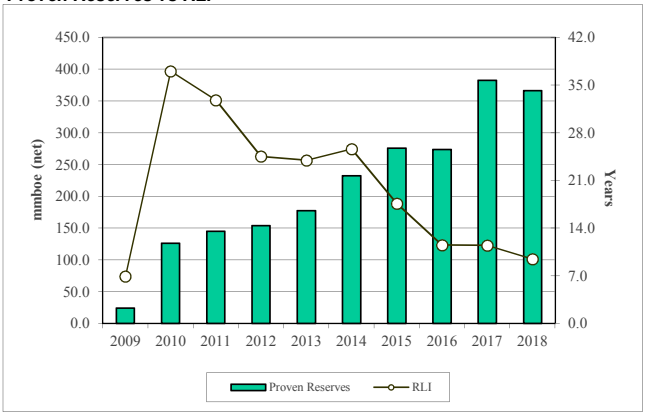
Galp Energia (GALP - XLIS)

US$, net

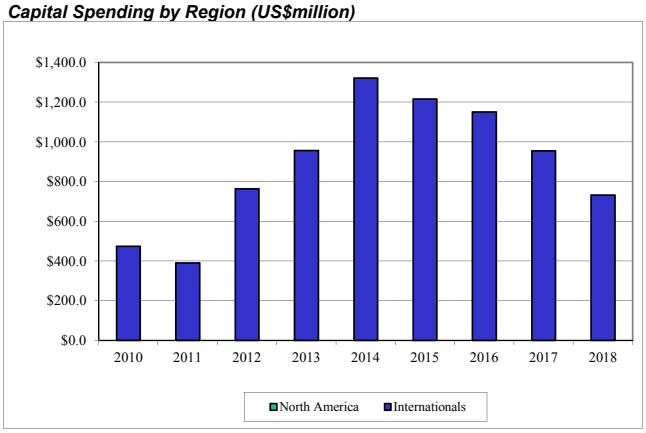
- Galp reported results of operations of $19.43/boe in 2018 versus $9.51/boe in 2017.
- The company reported ROCE of 17.2% in 2018 versus 11.3% last year.
- 2018 F&D costs came in at $16.53/boe, up from $6.73/boe in 2017. On a realized oil:gas price ratio basis, F&D costs were $16.19/boe versus $9.34/boe last year.
- Galp's required Brent breakeven oil price is $59.10/boe on a realized oil:gas price ratio basis.

Notes: Financial figures have been converted from Euros to U.S. Dollars using average annual exchange rates.

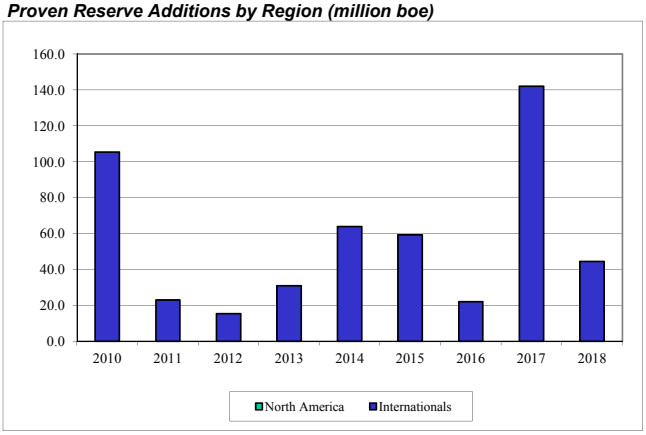
Proven Reserves vs RLI



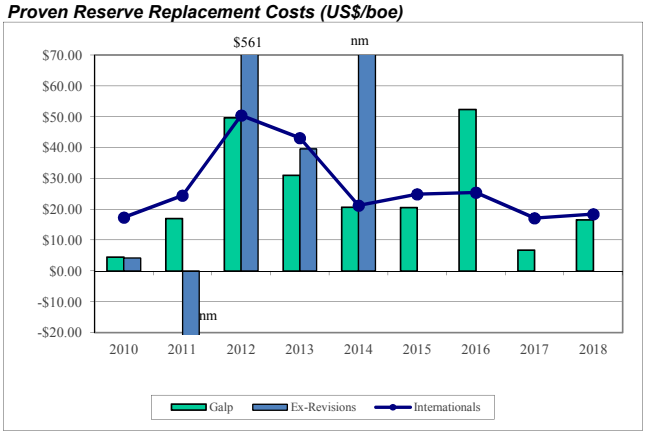
Capital Spending by Region (US$million)



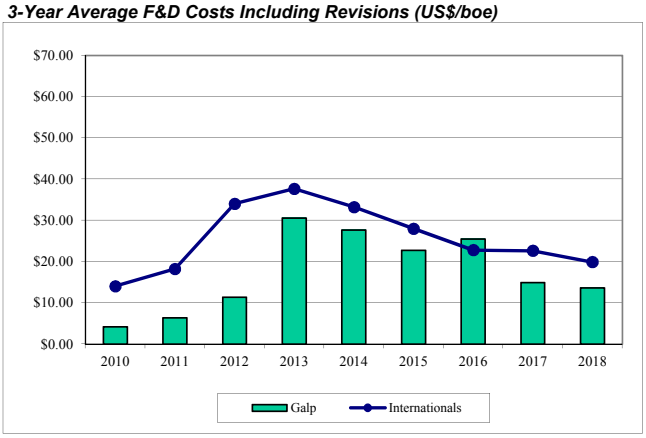
Proven Reserve Additions by Region (million boe)



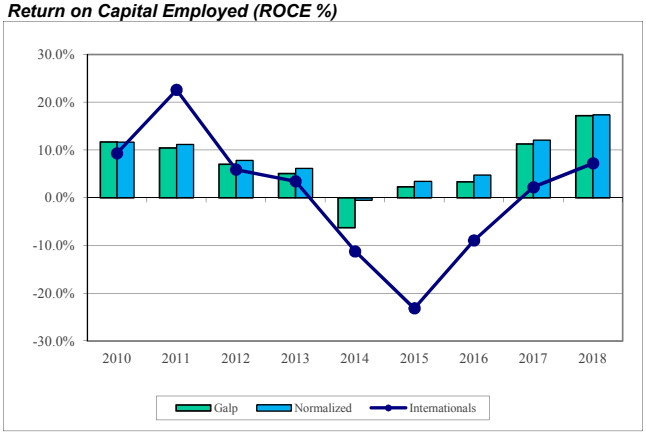
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



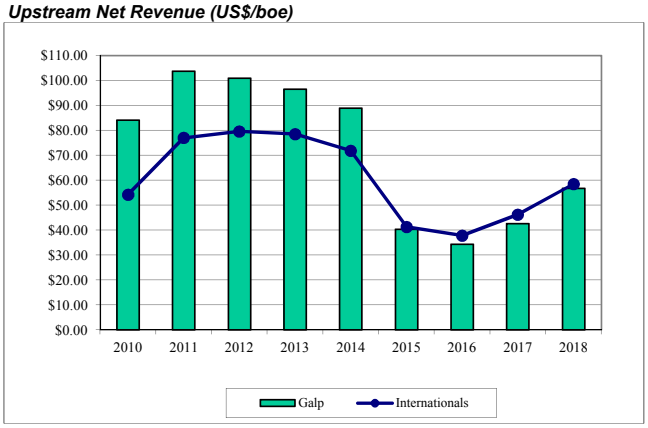
Source: BMO Capital Markets, Company Reports

Galp Energia (GALP - XLIS)

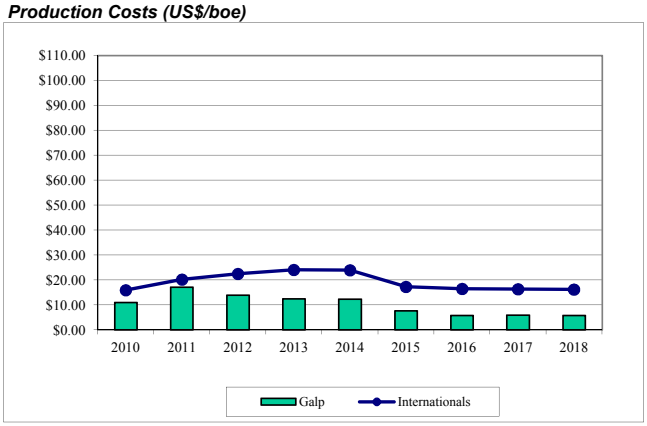
US$, net

International

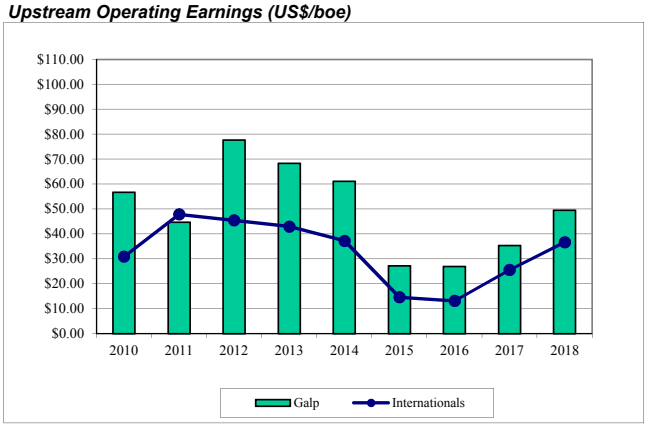
Upstream Net Revenue (US$/boe)



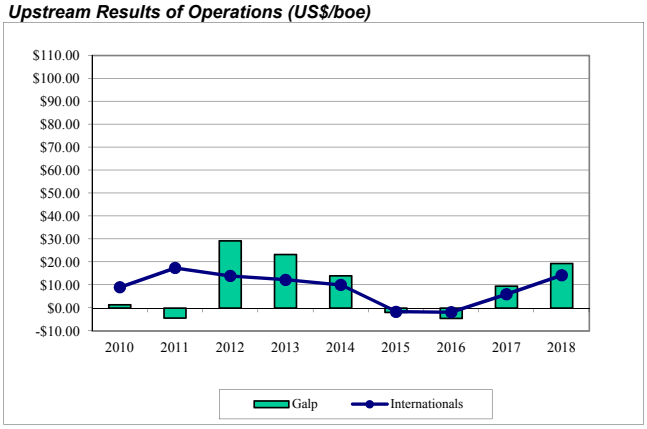
Production Costs (US$/boe)



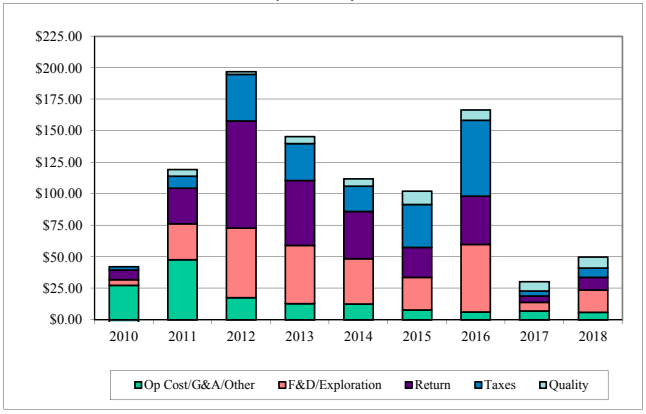
Upstream Operating Earnings (US$/boe)



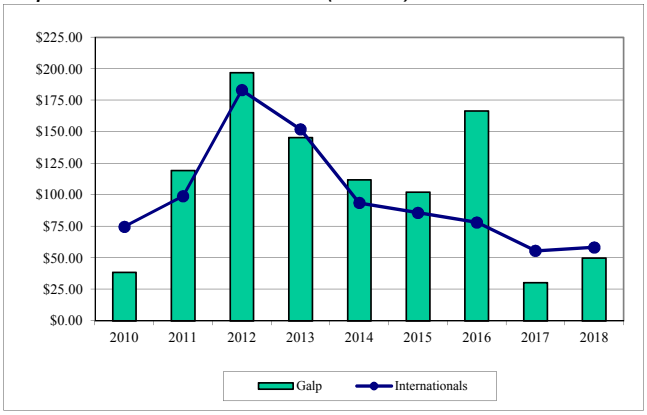
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Galp Energia (GALP - XLIS)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	234	285	459	634	716	806	631	819	1,425	2,193
Midstream / Downstream Revenue	-	16,712	18,640	23,197	23,342	25,540	23,276	16,707	13,837	15,875	18,268
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	16,946	18,925	23,656	23,976	26,256	24,082	17,338	14,656	17,300	20,461
Crude Oil and Product Purchases	-	14,195	15,878	20,214	20,740	22,769	20,749	13,973	11,082	12,661	14,854
Production and Transportation Expenses	-	23	37	76	88	92	111	119	137	197	222
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	473	457	455	413	461	491	381	370	362	379
Depreciation, Depletion and Amortization	-	429	439	563	548	777	646	604	702	821	816
Interest, net	-	105	115	167	104	193	133	53	37	8	14
Other	-	1,092	1,170	1,359	1,362	1,467	1,864	1,794	1,735	1,811	2,180
Earnings Before Income Tax	-	630	829	823	721	498	88	415	593	1,440	1,995
Current Income Taxes	-	135	210	150	238	163	310	262	339	568	684
Future Income Taxes	-	3	11	57	(19)	18	(65)	(19)	24	72	187
Total Income Taxes	-	138	221	208	219	180	245	243	364	641	871
Minority Interest	-	(8)	(9)	(13)	(60)	(67)	(73)	(35)	(32)	(105)	(178)
Earnings From Continuing Operations	-	484	599	603	441	251	(230)	136	198	694	946
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principl	-	-	-	-	-	-	-	-	-	-	107
Net Earnings	-	484	599	603	441	251	(230)	136	198	694	1,054
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	484	599	603	441	251	(230)	136	198	694	1,054

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	484	599	603	441	251	(230)	136	198	694	1,054
Charges and Credits Not Impacting Cash	-	429	331	404	426	585	486	544	634	727	691
Other	-	122	(64)	197	(467)	27	467	728	381	10	(16)
Cash Flow From Operations	-	1,035	866	1,203	401	863	723	1,407	1,213	1,431	1,729
Change in Working Capital / Other	-	-	-	-	-	-	-	-	-	81	-
Net Cash From Operating Activities	-	1,035	866	1,203	401	863	723	1,407	1,213	1,512	1,729
Total Capital Expenditures	-	(941)	(1,700)	(1,705)	(1,032)	(938)	(1,062)	(1,099)	(1,154)	(894)	(1,311)
Acquisitions, net	-	-	-	-	-	-	-	-	-	1	-
Other	-	144	(138)	8	(1,328)	16	(63)	168	211	49	456
Net Cash From Investing Activities	-	(797)	(1,838)	(1,696)	(2,360)	(922)	(1,125)	(931)	(943)	(844)	(855)
Net Change in Debt	-	350	1,063	936	142	182	(92)	(139)	(35)	310	193
Net Change in Common Stock	-	-	-	-	-	-	-	-	-	77	25
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	(270)	(222)	(165)	(347)	(295)	(365)	(353)	(429)	(555)	(605)
Other	-	(102)	(133)	(237)	4,414	(283)	(206)	(145)	(152)	(221)	-
Net Cash From Financing Activities	-	(22)	708	535	4,209	(396)	(663)	(637)	(616)	(390)	(387)
Effect of Exchange Rate on Cash	-	32	4	(12)	(23)	(179)	243	45	102	(153)	(22)
Net Increase/(Decrease) in Cash	-	248	(260)	29	2,226	(634)	(822)	(116)	(244)	125	464
Cash and Equivalents, Beginning of Year	-	(334)	350	271	365	2,504	1,999	1,270	1,253	1,168	1,295
Cash and Equivalents, End of Year	-	(85)	90	300	2,592	1,869	1,177	1,154	1,008	1,293	1,758

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Galp Energia (GALP - XLIS)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	3,942	4,520	5,268	7,685	7,460	6,554	4,566	4,574	4,797	5,582
Net Property, Plant and Equipment	-	3,682	4,761	5,792	5,774	6,065	6,712	4,566	5,745	6,276	6,299
Other Assets	-	2,855	2,854	3,082	4,427	4,698	4,291	5,072	3,450	2,878	3,104
Total Assets	-	10,479	12,135	14,142	17,886	18,223	17,557	14,203	13,769	13,951	14,986
Total Current Liabilities		3,510	4,236	5,594	4,615	3,760	2,865	2,256	2,388	2,746	3,111
Long-term Debt		2,437	3,200	3,167	3,186	4,389	4,465	3,397	2,853	3,040	3,173
Deferred Income Taxes		79	112	118	168	171	161	121	73	93	232
Other Liabilities and Deferred Credits		1,121	1,078	1,167	1,294	1,380	1,530	1,559	1,212	1,209	1,328
Total Liabilities	-	7,147	8,626	10,046	9,263	9,700	9,022	7,333	6,526	7,087	7,843
Minority Interests	-	38	43	78	1,678	1,667	1,887	1,572	1,730	1,651	1,725
Common Shares	-	1,157	1,100	1,155	1,066	1,102	1,102	921	918	937	979
Contributed Surplus (Paid-in Capital)	-	114	109	114	105	109	109	91	91	93	97
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	1,363	1,537	2,012	2,391	2,464	1,849	1,308	1,078	4,176	2,164
Other / Comprehensive Income (Loss	-	660	721	738	3,383	3,182	3,589	2,978	3,426	14	2,178
Total Shareholders' Equity	-	3,294	3,467	4,018	6,946	6,856	6,649	5,298	5,513	5,219	5,418
Total Liabilities and Shareholders' Equity	-	10,479	12,135	14,142	17,886	18,223	17,557	14,203	13,769	13,958	14,986
Return on Capital Employed (ROCE)		**10.68%**	**11.70%**	**10.47%**	**7.05%**	**5.12%**	**-6.27%**	**2.28%**	**3.38%**	**11.27%**	**17.22%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	$84.18	$103.79	$100.95	$96.55	$88.92	$40.32	$34.39	$42.67	$56.74	$44.60	$52.61
Production Costs	-	-	$10.96	$17.10	$13.97	$12.38	$12.26	$7.63	$5.74	$5.90	$5.73	$5.79	$7.45
Exploration	-	-	$0.00	$11.53	$5.75	$15.47	$15.14	$5.15	$1.36	$0.17	$1.32	$0.95	$4.63
DD&A	-	-	$37.47	$38.69	$26.63	$29.70	$22.24	$22.39	$24.18	$14.32	$10.37	$16.29	$18.70
G&A / Other	-	-	$16.44	$30.51	$3.51	$0.31	$0.42	$0.28	$0.35	$1.19	$0.18	$0.57	$0.48
Pre-tax Results of Operations	-	-	$19.32	$5.96	$51.09	$38.68	$38.85	$4.87	$2.76	$21.09	$39.14	$21.00	$21.34
Income Taxes	-	-	$17.88	$10.32	$21.87	$15.29	$24.85	$6.73	$7.23	$11.59	$19.71	$21.93	-$24.70
Results of Operations	-	-	$1.43	-$4.36	$29.22	$23.39	$14.01	-$1.86	-$4.46	$9.51	$19.43	-$0.93	$46.05

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Galp Energia (GALP - XLIS)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	0.0	1.5	9.5	9.3	9.4	18.4	31.9	71.0	74.8	59.2	41.1
Liquids Production (b/d)	-	-	9,351	11,860	15,633	18,751	23,268	39,797	59,956	79,663	93,400	77,673	59,217
Total Production (boe/d)	-	-	9,351	12,111	17,215	20,304	24,841	42,868	65,267	91,492	105,871	87,543	66,068
% Gas Production	-	-	0%	2%	9%	8%	6%	7%	8%	13%	12%	11%	10%
% Oil Production	-	-	100%	98%	91%	92%	94%	93%	92%	87%	88%	89%	90%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	82.2	155.0	184.3	130.9	174.0	236.3	235.5	591.4	555.3	460.7	358.5
Closing Oil Reserves (mmbbls)	-	-	112.8	119.1	123.4	155.7	203.4	236.6	234.8	284.2	273.9	264.3	246.6
Closing Total Proven Reserves (mmboe)	-	-	126.5	145.0	154.1	177.6	232.4	275.9	274.1	382.8	366.5	341.1	306.3
% Gas Reserves	-	-	11%	18%	20%	12%	12%	14%	14%	26%	25%	23%	20%
% Oil Reserves	-	-	89%	82%	80%	88%	88%	86%	86%	74%	75%	77%	80%
Proven Reserve Life Index	-	-	37.1	32.8	24.5	24.0	25.6	17.6	11.5	11.5	9.5	10.8	15.1
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	82.2	73.3	32.7	-49.9	46.5	69.0	10.9	381.8	-8.8	383.9	499.3
Oil Additions (mmbbls)	-	-	91.7	10.7	9.9	39.2	56.1	47.7	20.2	78.4	45.8	144.4	248.3
Total Additions (mmboe)	-	-	105.4	22.9	15.4	30.9	63.9	59.2	22.0	142.1	44.4	208.4	331.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0	0.0	1.4	24.2	0.1	0.0	0.0	0.0	10.0	10.0	10.1
Net Acquisitions	-	-	112.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revisions of Estimates	-	-	-7.6	22.9	14.0	6.7	63.8	59.2	22.0	142.1	34.4	198.4	321.4
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0%	0.0%	8.9%	78.3%	0.1%	0.0%	0.0%	0.0%	22.6%	4.8%	3.0%
Net Acquisitions	-	-	107.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	-	-	-7.2%	100.0%	91.1%	21.7%	99.9%	100.0%	100.0%	100.0%	77.4%	95.2%	97.0%
Additions as % of Production:													
Gas	-	-	0.0%	nm	945.1%	nm	nm	nm	93.3%	1473.9%	-32.3%	591.9%	665.7%
Oil	-	-	nm	247.6%	174.3%	572.9%	660.7%	328.6%	92.1%	269.7%	134.5%	169.8%	229.7%
Total	-	-	nm	519.0%	245.2%	416.7%	704.4%	378.5%	92.2%	425.4%	114.8%	217.4%	274.9%
Additions as % of Reserves:													
Gas	-	-	100.0%	47.3%	17.8%	-38.1%	26.7%	29.2%	4.6%	64.6%	-1.6%	83.3%	139.3%
Oil	-	-	81.3%	9.0%	8.1%	25.2%	27.6%	20.2%	8.6%	27.6%	16.7%	54.6%	100.7%
Total	-	-	83.3%	15.8%	10.0%	17.4%	27.5%	21.5%	8.0%	37.1%	12.1%	61.1%	108.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	-	-	$475	$391	$765	$957	$1,322	$1,217	$1,151	$956	$733	$2,840	$5,379
Net Acquisitions	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	-	-	$475	$391	$765	$957	$1,322	$1,217	$1,151	$956	$733	$2,840	$5,379
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	-	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-	-	$719	$1,033	$303	$801	$780	$1,394	$1,194	$1,351	$1,476	$4,021	$6,194
Cashflow (US$/boe)	-	-	$210.61	$233.80	$48.14	$108.13	$86.00	$89.08	$50.11	$40.46	$38.20	$41.94	$51.37
Recycle Ratio	-	-	46.7x	13.7x	1.0x	3.5x	4.2x	4.3x	1.0x	6.0x	2.3x	3.1x	3.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-$62.88	$17.04	$49.63	$31.00	$20.70	$20.54	$52.40	$6.73	$16.53	$13.63	$16.23
Net Acquisition Costs	-	-	$0.00	na	na	na	na	na	na	na	na	nm	nm
All Sources (incl. revisions)	-	-	$4.51	$17.04	$49.63	$31.00	$20.70	$20.54	$52.40	$6.73	$16.53	$13.63	$16.23
Exploration & Development (excl. revisions)	-	-	nm	nm	$560.74	$39.56	$22,405.50	nm	nm	nm	nm	$283.76	$534.28
Net Acquisition Costs	-	-	$0.00	na	na	na	na	na	na	na	na	nm	nm
All Sources (excl. revisions)	-	-	$4.21	nm	$560.74	$39.56	$22,405.50	nm	nm	nm	nm	$283.76	$534.28
Geographically Segmented Costs													
North America	-	-	na	na	na	na	na	na	na	na	na	na	na
International	-	-	$4.51	$17.04	$49.63	$31.00	$20.70	$20.54	$52.40	$6.73	$16.53	$13.63	$16.23

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Galp Energia (GALP - XLIS)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	10.96	17.10	13.97	12.38	12.26	7.63	5.74	5.90	5.73	5.79	7.45
Exploration Expense	-	-	-	11.53	5.75	15.47	15.14	5.15	1.36	0.17	1.32	0.95	4.63
G&A/Other	-	-	16.44	30.51	3.51	0.31	0.42	0.28	0.35	1.19	0.18	0.57	0.48
F&D Costs (1-Year)	-	-	4.51	17.04	49.63	31.00	20.70	20.54	52.40	6.73	16.53	13.63	16.23
Return on Capital	-	-	7.54	28.25	84.91	51.47	37.32	23.92	38.14	4.88	9.83	9.29	15.94
Income Taxes	-	-	2.74	9.53	37.12	29.25	20.10	33.99	60.32	3.91	7.61	9.21	6.71
Breakeven Oil Price	**-**	**-**	**42.18**	**113.95**	**194.90**	**139.88**	**105.94**	**91.51**	**158.31**	**22.78**	**41.19**	**39.44**	**51.44**
Quality Differential	-	-	(3.84)	5.37	2.04	5.58	5.79	10.53	8.30	7.38	8.52	8.07	8.10
Required Brent Price	**-**	**-**	**38.34**	**119.32**	**196.94**	**145.46**	**111.73**	**102.04**	**166.61**	**30.16**	**49.71**	**47.51**	**59.55**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	10.96	17.35	14.90	13.00	12.76	7.99	6.05	6.42	6.19	6.22	7.88
Exploration Expense	-	-	-	11.70	6.14	16.25	15.77	5.39	1.44	0.19	1.43	1.02	4.84
G&A/Other	-	-	133.86	104.43	70.02	65.26	56.38	25.50	16.34	11.78	10.59	12.90	24.12
F&D Costs (1-Year)	-	-	5.00	25.96	66.11	26.18	22.61	23.66	55.23	9.34	16.19	16.86	19.32
Return on Capital	-	-	7.76	40.22	102.18	41.85	38.63	25.94	38.43	6.14	8.74	10.61	17.77
Income Taxes	-	-	2.82	13.56	44.66	23.78	20.80	36.87	60.77	4.93	6.77	10.53	7.48
Breakeven Oil Price	**-**	**-**	**160.39**	**213.22**	**304.00**	**186.32**	**166.94**	**125.36**	**178.26**	**38.79**	**49.91**	**58.14**	**81.41**
Quality Differential	-	-	(3.84)	5.45	2.17	5.86	6.03	11.02	8.75	8.03	9.19	8.66	8.60
Required Brent Price	**-**	**-**	**156.55**	**218.67**	**306.18**	**192.18**	**172.97**	**136.38**	**187.01**	**46.82**	**59.10**	**66.80**	**90.01**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

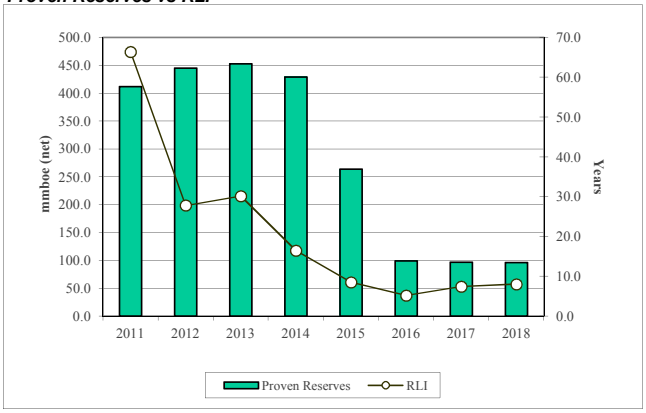
Genel Energy (GENL - LSE)

US$, net

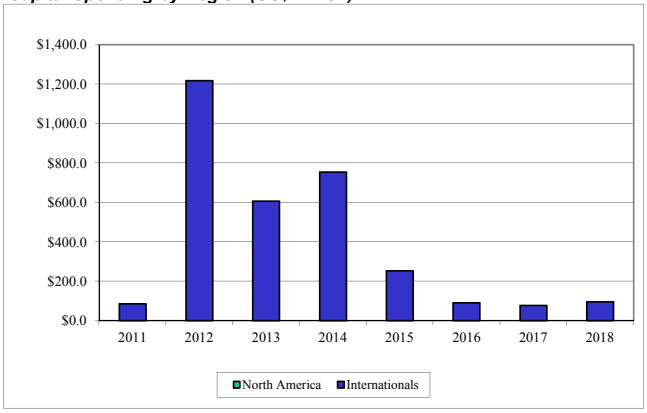
- Genel reported results of operations of $14.00/boe in 2018 versus $9.39/boe in 2017.
- The company reported a loss on capital employed of 17.2% in 2018 which includes a $424 million impairment. Excluding the impairment, normalized ROCE came in at 11.5%.
- One-year F&D costs came in at $8.77/boe. On a realized oil:gas price basis, F&D costs declined to $8.77/boe from $26.07/boe in 2017.
- Genel's 2018 operations imply a required Brent breakeven oil price of $72.69/boe on a realized oil:gas price ratio basis.

Notes: Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

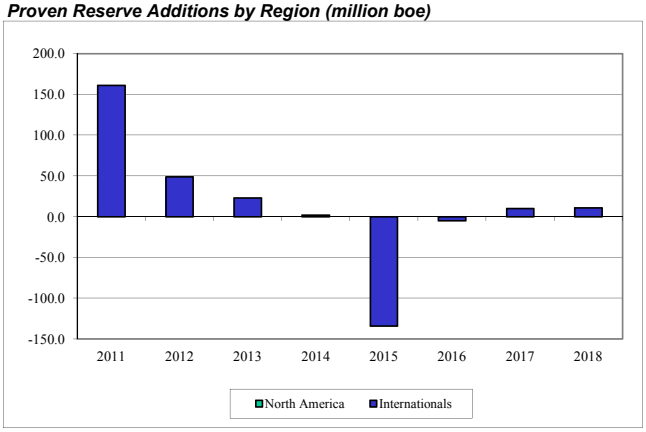
Proven Reserves vs RLI



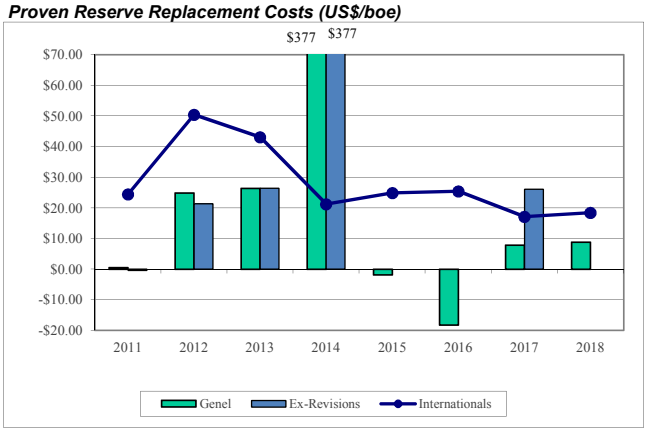
Capital Spending by Region (US$million)



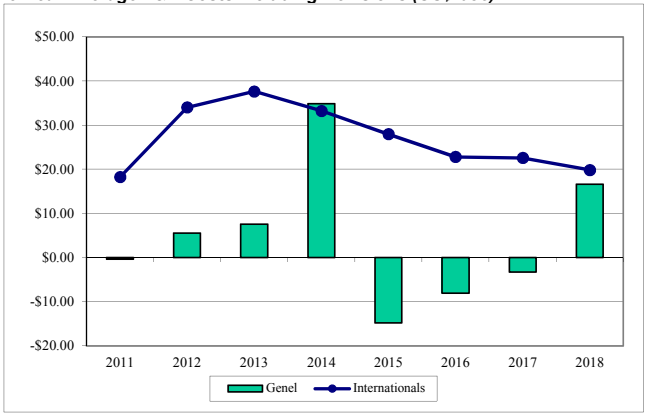
Proven Reserve Additions by Region (million boe)



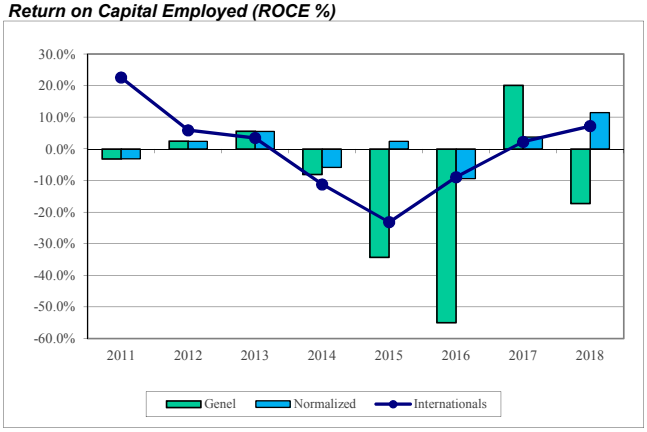
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



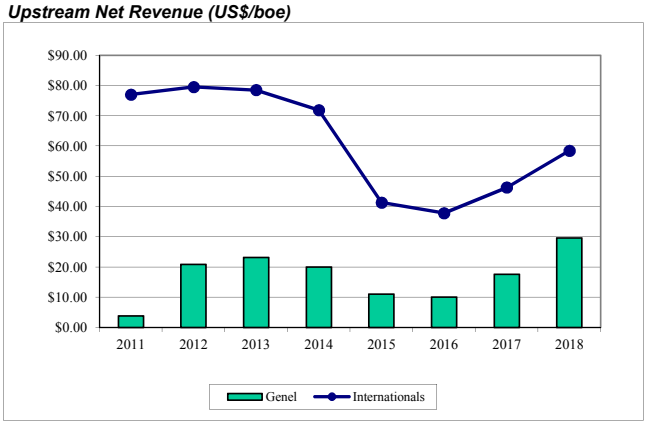
Source: BMO Capital Markets, Company Reports

Genel Energy (GENL - LSE)

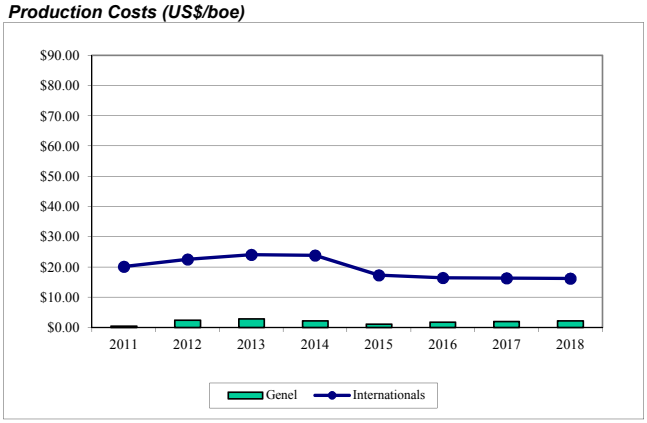
US$, net

International

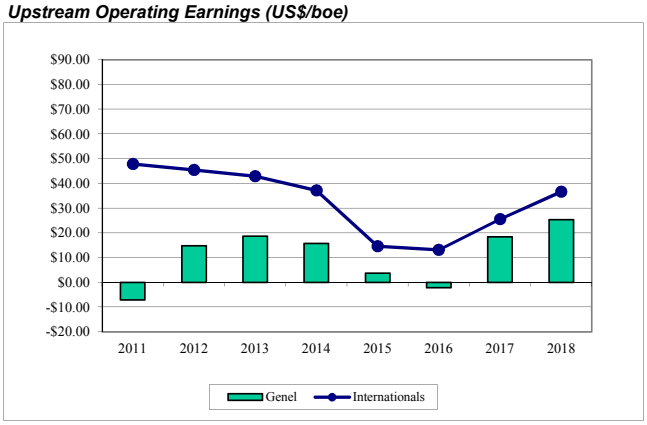
Upstream Net Revenue (US$/boe)



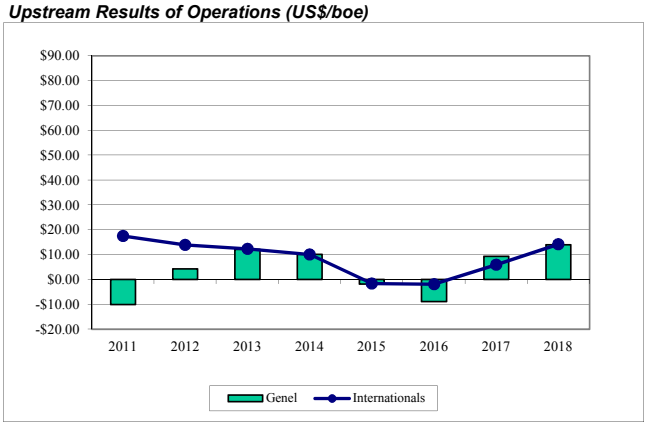
Production Costs (US$/boe)



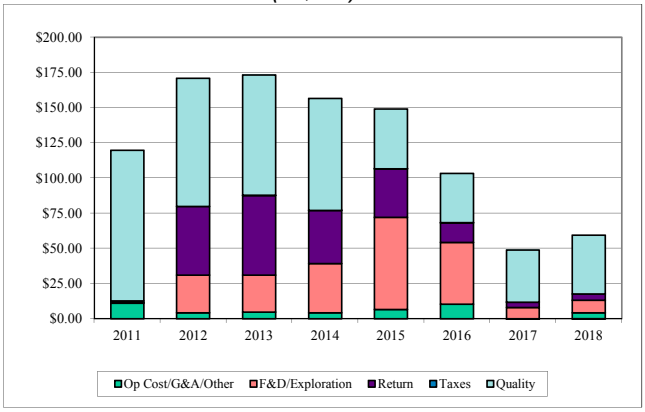
Upstream Operating Earnings (US$/boe)



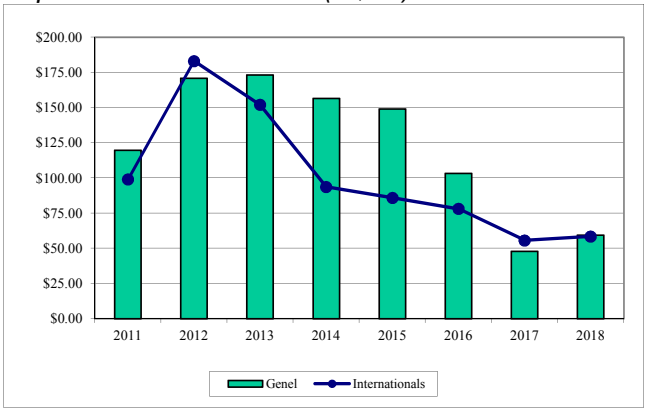
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Genel Energy (GENL - LSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Income Statement											
Revenue and Other Income:											
Upstream Revenue, net of Royalties	-	-	-	24	333	348	520	344	191	229	355
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	-	-	24	333	348	520	344	191	229	355
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	3	39	43	59	36	34	26	27
Production and Transportation Expenses	-	-	-	-	-	-	-	-	-	-	-
Marketing Expenses	-	-	-	-	30	(3)	6	29	36	2	2
Exploration / Dry Hole Costs	-	-	-	65	35	27	47	29	26	21	24
General and Administrative	-	-	-	19	170	98	144	173	129	117	136
Depreciation, Depletion and Amortization	-	-	-	-	-	-	-	-	-	-	-
Interest, net	-	-	-	(5)	(16)	(3)	25	57	45	59	29
Other	-	-	-	-	-	-	552	1,182	1,169	(268)	421
Earnings Before Income Tax	-	-	-	(58)	76	187	(313)	(1,161)	(1,249)	272	(283)
Income Taxes:											
Current Income Taxes	-	-	-	-	-	1	2	1	0	1	0
Future Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Total Income Taxes	-	-	-	-	-	1	2	1	0	1	0
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	(58)	76	186	(314)	(1,162)	(1,249)	271	(284)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	(58)	76	186	(314)	(1,162)	(1,249)	271	(284)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	(58)	76	186	(314)	(1,162)	(1,249)	271	(284)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Operating Activities:											
Net Earnings	-	-	-	(58)	76	186	(314)	(1,162)	(1,249)	271	(284)
Charges and Credits Not Impacting Cash	-	-	-	19	177	98	696	1,221	1,162	178	559
Other	-	-	-	11	41	22	(247)	203	225	(264)	34
Cash Flow From Operations	-	-	-	(28)	294	305	135	262	138	184	309
Change in Working Capital / Other	-	-	-	5	13	6	(19)	(191)	(7)	37	(10)
Net Cash From Operating Activities	-	-	-	(23)	307	311	116	71	131	221	299
Total Capital Expenditures	-	-	-	(17)	(234)	(564)	(677)	(250)	(72)	(79)	(105)
Acquisitions, net	-	-	-	76	(984)	(43)	(77)	(4)	-	-	-
Other	-	-	-	-	-	-	-	-	(20)	1	9
Net Cash From Investing Activities	-	-	-	59	(1,218)	(607)	(754)	(254)	(91)	(78)	(97)
Financing Activities:											
Net Change in Debt	-	-	-	(156)	-	-	490	196	(35)	(345)	-
Net Change in Common Stock	-	-	-	2,033	(1)	(6)	(63)	(46)	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	(52)	(43)	(30)
Net Cash From Financing Activities	-	-	-	1,877	(1)	(6)	427	150	(87)	(388)	(30)
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	(1)	(1)	0	(0)
Net Increase/(Decrease) in Cash	-	-	-	1,913	(912)	(302)	(211)	(34)	(48)	(245)	172
Cash and Equivalents, Beginning of Year	-	-	-	-	1,913	1,001	700	489	455	407	162
Cash and Equivalents, End of Year	-	-	-	1,913	1,001	700	489	455	407	162	334

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Genel Energy (GENL - LSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	1,927	1,051	716	793	534	521	259	444
Net Property, Plant and Equipment	-	-	-	1,848	1,933	2,003	2,015	929	622	565	566
Other Assets	-	-	-	228	1,173	1,634	1,679	2,038	1,089	1,283	818
Total Assets	-	-	-	4,003	4,156	4,353	4,487	3,502	2,232	2,107	1,828
Liabilities and Stockholders' Equity											
Total Current Liabilities	-	-	-	83	156	173	190	84	101	64	58
Long-term Debt	-	-	-	-	-	-	491	694	648	297	297
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Other Liabilities and Deferred Credits	-	-	-	78	80	75	72	149	150	136	142
Total Liabilities	-	-	-	161	236	248	754	927	899	497	496
Minority Interests	-	-	-	31	8	8	8	-	-	-	-
Stockholders' Equity											
Common Shares	-	-	-	41	44	44	44	44	44	44	44
Contributed Surplus (Paid-in Capital)	-	-	-	3,824	4,074	4,074	4,074	4,074	4,074	4,074	4,074
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	(55)	(206)	(22)	(392)	(1,543)	(2,785)	(2,508)	(2,787)
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	(0)	0
Total Shareholders' Equity	-	-	-	3,811	3,912	4,096	3,726	2,575	1,333	1,610	1,331
Total Liabilities and Shareholders' Equity	-	-	-	4,003	4,156	4,353	4,487	3,502	2,232	2,107	1,828
Return on Capital Employed (ROCE)				**-3.2%**	**2.4%**	**5.6%**	**-8.1%**	**-34.4%**	**-55.0%**	**20.1%**	**-17.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	-	$3.87	$20.84	$23.19	$19.99	$11.09	$10.04	$17.61	$29.59	$17.61	$16.22
Production Costs	-	-	-	$0.45	$2.43	$2.88	$2.26	$1.15	$1.79	$2.02	$2.25	$1.98	$1.80
Exploration	-	-	-	$0.00	$1.86	-$0.21	$0.22	$0.93	$1.90	$0.15	$0.13	$0.90	$0.73
DD&A	-	-	-	$3.00	$10.59	$6.50	$5.55	$5.56	$6.78	$9.03	$11.35	$8.69	$6.92
G&A / Other	-	-	-	$10.49	$1.72	$1.79	$1.81	$5.23	$8.53	-$3.01	$1.87	$2.46	$2.89
Pre-tax Results of Operations	-	-	-	-$10.07	$4.24	$12.23	$10.15	-$1.79	-$8.96	$9.42	$13.99	$3.57	$3.88
Income Taxes	-	-	-	$0.00	$0.00	$0.06	$0.05	-$0.01	-$0.04	$0.03	-$0.01	$0.01	$0.02
Results of Operations	-	-	-	-$10.07	$4.24	$12.17	$10.10	-$1.78	-$8.92	$9.39	$14.00	$3.56	$3.86

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Genel Energy (GENL - LSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquids Production (b/d)	-	-	-	17,000	43,836	41,096	71,233	84,932	52,055	35,616	32,877	40,183	55,342
Total Production (boe/d)	-	-	-	17,000	43,836	41,096	71,233	84,932	52,055	35,616	32,877	40,183	55,342
% Gas Production	-	-	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Production	-	-	-	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Oil Reserves (mmbbls)	-	-	-	412.0	445.0	453.0	429.0	264.0	99.0	97.0	96.0	97.3	197.0
Closing Total Proven Reserves (mmboe)	-	-	-	412.0	445.0	453.0	429.0	264.0	99.0	97.0	96.0	97.3	197.0
% Gas Reserves	-	-	-	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	-	-	-	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	-	-	-	66.4	27.8	30.2	16.5	8.5	5.2	7.5	8.0	6.9	9.1
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil Additions (mmbbls)	-	-	-	161.2	49.0	23.0	2.0	-134.0	-5.0	10.0	11.0	16.0	-116.0
Total Additions (mmboe)	-	-	-	161.2	49.0	23.0	2.0	-134.0	-5.0	10.0	11.0	16.0	-116.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	0.0	57.0	23.0	2.0	0.0	0.0	3.0	0.0	3.0	5.0
Net Acquisitions	-	-	-	161.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revisions of Estimates	-	-	-	0.0	-8.0	0.0	0.0	-134.0	-5.0	7.0	11.0	13.0	-121.0
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	-	0.0%	116.3%	100.0%	100.0%	0.0%	0.0%	30.0%	0.0%	18.8%	-4.3%
Net Acquisitions	-	-	-	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	-	-	-	0.0%	-16.3%	0.0%	0.0%	100.0%	100.0%	70.0%	100.0%	81.3%	104.3%
Additions as % of Production:													
Gas	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	-	-	-	nm	306.3%	153.3%	7.7%	-432.3%	-26.3%	76.9%	91.7%	36.4%	-114.9%
Total	-	-	-	nm	306.3%	153.3%	7.7%	-432.3%	-26.3%	76.9%	91.7%	36.4%	-114.9%
Additions as % of Reserves:													
Gas	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	-	-	-	39.1%	11.0%	5.1%	0.5%	-50.8%	-5.1%	10.3%	11.5%	16.4%	-58.9%
Total	-	-	-	39.1%	11.0%	5.1%	0.5%	-50.8%	-5.1%	10.3%	11.5%	16.4%	-58.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	-	-	-	-$59	$1,218	$607	$754	$254	$91	$78	$97	$266	$1,274
Net Acquisitions	-	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	-	-	-	-$59	$1,218	$607	$754	$254	$91	$78	$97	$266	$1,274
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	-	-	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-	-	-	-$28	$294	$305	$135	$262	$138	$184	$309	$632	$1,029
Cashflow (US$/boe)	-	-	-	-$4.50	$18.37	$20.36	$5.20	$8.46	$7.27	$14.19	$25.75	$14.36	$10.19
Recycle Ratio	-	-	-	-8.4x	0.7x	0.8x	0.0x	-4.5x	-0.4x	1.8x	2.9x	0.9x	-0.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	nm	$24.85	$26.39	$376.85	-$1.90	-$18.28	$7.82	$8.77	$16.63	-$10.98
Net Acquisition Costs	-	-	-	$0.00	na	na	na	na	na	na	na	na	na
All Sources (incl. revisions)	-	-	-	$0.53	$24.85	$26.39	$376.85	-$1.90	-$18.28	$7.82	$8.77	$16.63	-$10.98
Exploration & Development (excl. revisions)	-	-	-	nm	$21.36	$26.39	$376.85	nm	nm	nm	nm	$88.70	$254.82
Net Acquisition Costs	-	-	-	$0.00	na	na	na	na	na	na	na	na	na
All Sources (excl. revisions)	-	-	-	nm	$21.36	$26.39	$376.85	nm	nm	nm	nm	$88.70	$254.82
Geographically Segmented Costs													
North America	-	-	-	na	na	na	na	na	na	na	na	na	na
International	-	-	-	$0.53	$24.85	$26.39	$376.85	-$1.90	-$18.28	$7.82	$8.77	$16.63	-$10.98

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Genel Energy (GENL - LSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	0.45	2.43	2.88	2.26	1.15	1.79	2.02	2.25	1.98	1.80
Exploration Expense	-	-	-	-	1.86	(0.21)	0.22	0.93	1.90	0.15	0.13	0.90	0.73
G&A/Other	-	-	-	10.49	1.72	1.79	1.81	5.23	8.53	(3.01)	1.87	2.46	2.89
F&D Costs (1-Year)	-	-	-	0.53	24.85	26.39	34.84	64.60	41.94	7.82	8.77	19.51	31.59
Return on Capital	-	-	-	1.05	48.96	56.52	37.68	34.44	13.92	3.63	4.38	8.42	22.80
Income Taxes	-	-	-	-	-	0.27	0.18	0.17	0.07	0.01	(0.00)	0.02	0.10
Breakeven Oil Price	**-**	**-**	**-**	**12.53**	**79.81**	**87.64**	**76.99**	**106.52**	**68.14**	**10.62**	**17.40**	**33.30**	**59.92**
Quality Differential	-	-	-	107.09	90.86	85.54	79.39	42.46	35.09	37.18	41.92	38.06	59.01
Required Brent Price	**-**	**-**	**-**	**119.62**	**170.67**	**173.18**	**156.38**	**148.99**	**103.23**	**47.80**	**59.32**	**71.36**	**118.93**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

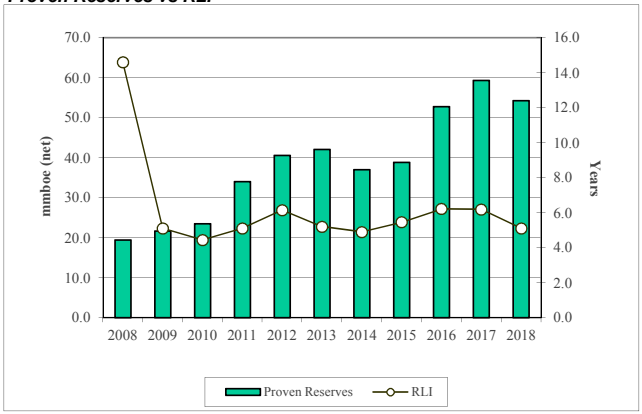
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	0.45	2.43	2.88	2.26	1.15	1.79	2.02	2.25	1.98	1.80
Exploration Expense	-	-	-	-	1.86	(0.21)	0.22	0.93	1.90	0.15	0.13	0.90	0.73
G&A/Other	-	-	-	10.49	1.72	1.79	1.81	5.23	8.53	(23.64)	1.87	31.66	31.71
F&D Costs (1-Year)	-	-	-	0.53	24.85	26.39	34.84	64.60	41.94	26.07	8.77	25.59	35.24
Return on Capital	-	-	-	2.20	48.96	56.52	37.68	34.44	13.92	12.18	4.38	11.05	25.42
Income Taxes	-	-	-	-	-	0.27	0.18	0.17	0.07	0.04	(0.00)	0.03	0.09
Breakeven Oil Price	**-**	**-**	**-**	**13.68**	**79.81**	**87.64**	**76.99**	**106.52**	**68.14**	**16.81**	**17.40**	**71.21**	**95.00**
Quality Differential	-	-	-	107.09	90.86	85.54	79.39	42.46	45.12	37.18	55.29	45.86	64.86
Required Brent Price	**-**	**-**	**-**	**120.76**	**170.67**	**173.18**	**156.38**	**148.99**	**113.27**	**54.00**	**72.69**	**117.08**	**159.86**

Source: BMO Capital Markets, Company Reports

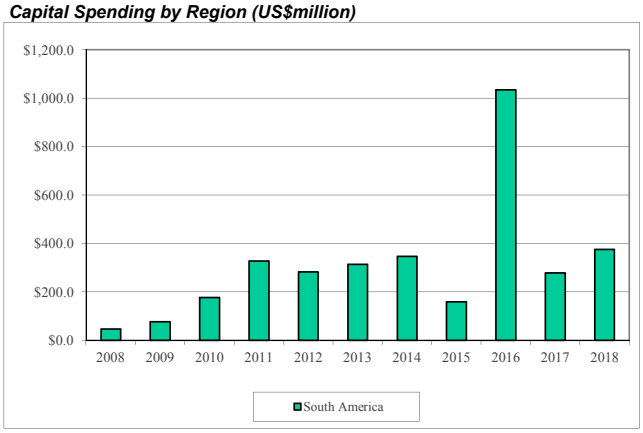
Gran Tierra (GTE - TSX, AMEX) US$, net

- Gran Tierra reported results of operations of $13.66/boe in 2018 versus $8.79/boe in 2017.
- The company reported ROCE of 9.2% in 2018.
- One-year F&D costs jumped to $67.32/boe from $12.25/boe last year. On a realized oil:gas price ratio basis, three-year average F&D costs came in at $33.51/boe.
- Gran Tierra's 2018 operations implied a required Brent breakeven oil price of $82.46/boe on a realized oil:gas price ratio basis.

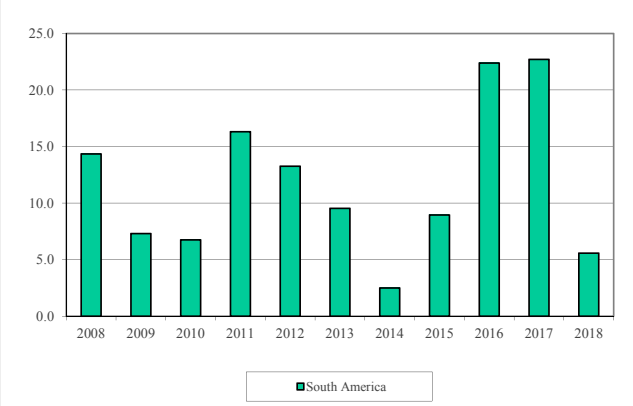
Proven Reserves vs RLI



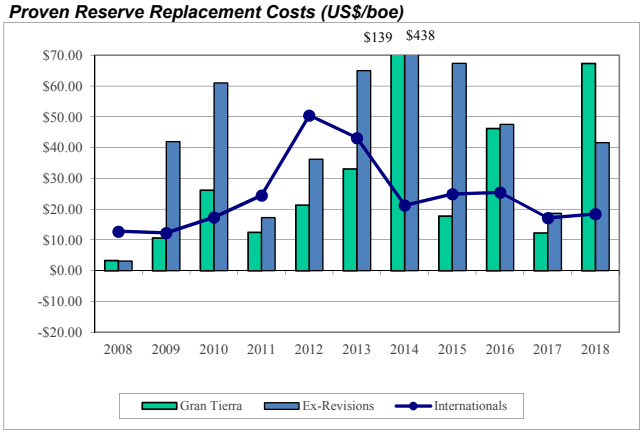
Capital Spending by Region (US$million)



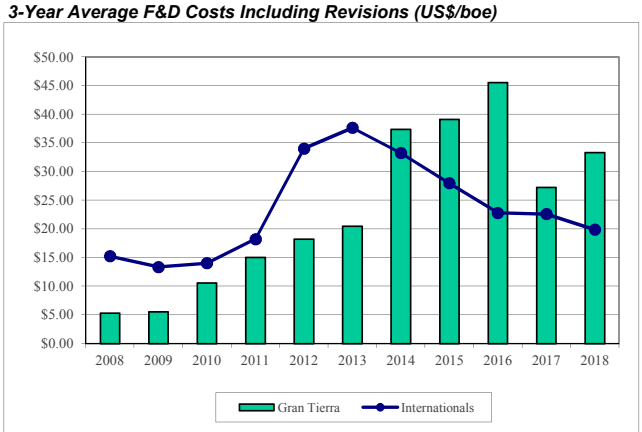
Proven Reserve Additions by Region (million boe)



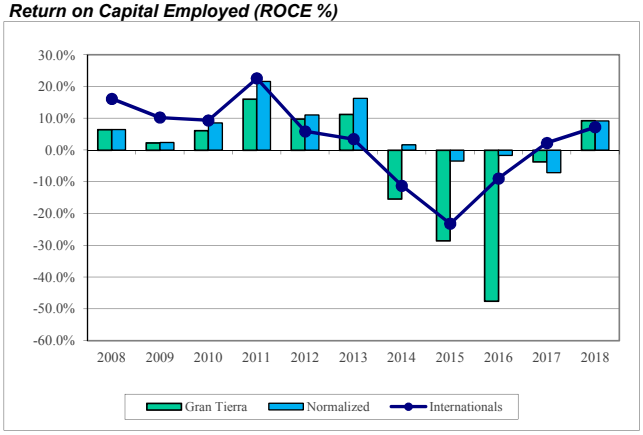
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



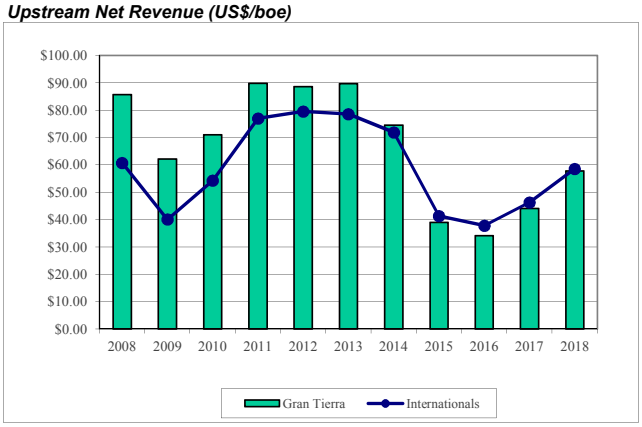
Source: BMO Capital Markets, Company Reports

Gran Tierra (GTE - TSX, AMEX)

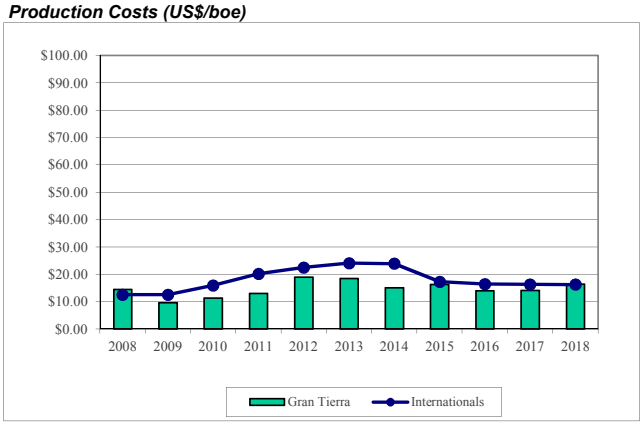
US$, net

International

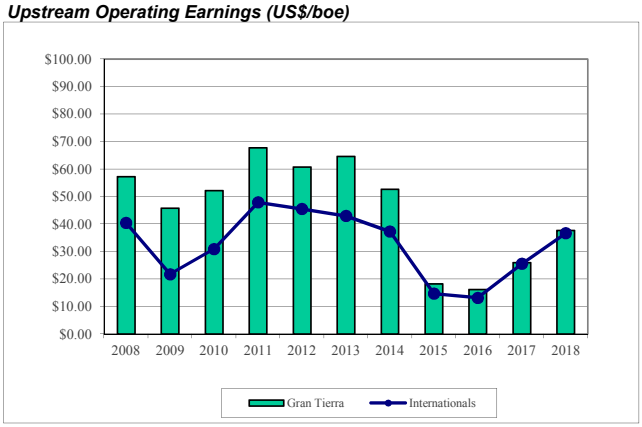
Upstream Net Revenue (US$/boe)



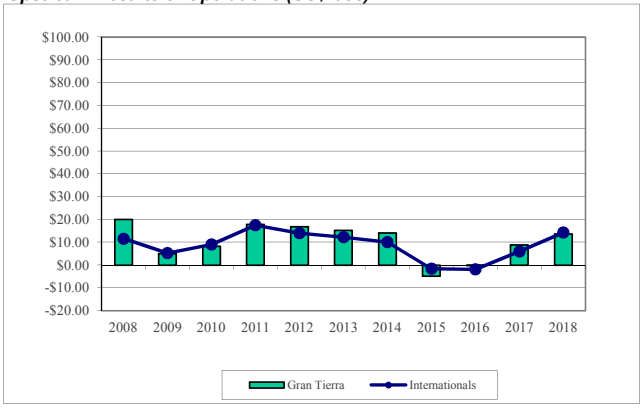
Production Costs (US$/boe)



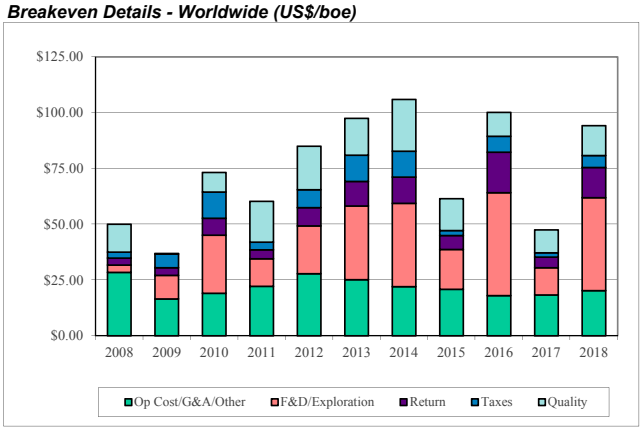
Upstream Operating Earnings (US$/boe)



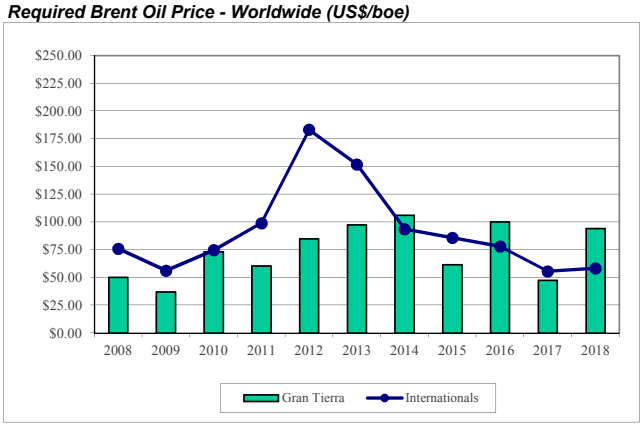
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Gran Tierra (GTE - TSX, AMEX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	113	263	373	596	583	720	559	276	289	422	613
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	1	1	1	1	2	3	3	1	-	-	-
Total Revenue and Other Income	114	264	374	597	585	724	562	277	289	422	613
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	19	41	59	86	125	149	114	116	119	135	175
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	19	29	40	60	59	53	51	32	33	39	39
Depreciation, Depletion and Amortization	26	136	164	231	182	267	186	176	140	131	198
Interest, net	-	-	-	-	-	-	-	-	12	13	25
Other	6	20	17	(15)	22	(8)	228	321	636	66	25
Earnings Before Income Tax	44	38	94	234	197	262	(17)	(368)	(650)	37	151
Current Income Taxes	25	39	77	136	71	165	93	15	20	24	44
Future Income Taxes	(4)	(14)	(20)	(29)	26	(29)	34	(115)	(205)	45	5
Total Income Taxes	21	24	57	107	98	136	127	(100)	(185)	69	49
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	23	14	37	127	100	126	(144)	(268)	(466)	(32)	103
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	(27)	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	23	14	37	127	100	126	(171)	(268)	(466)	(32)	103
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	23	14	37	127	100	126	(171)	(268)	(466)	(32)	103

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	23	14	37	127	100	126	(144)	(268)	(466)	(32)	103
Charges and Credits Not Impacting Cash	19	121	143	202	208	238	485	385	551	178	203
Other	7	25	22	(10)	(21)	(11)	(34)	(15)	19	73	0
Cash Flow From Operations	49	159	203	319	287	353	307	102	104	219	306
Change in Working Capital / Other	60	6	1	38	(131)	168	(98)	(40)	(11)	(29)	(21)
Net Cash From Operating Activities	110	165	204	357	156	521	209	62	93	190	285
Total Capital Expenditures	(55)	(81)	(152)	(333)	(276)	(367)	(347)	(157)	(128)	(251)	(347)
Acquisitions, net	82	-	-	12	(35)	60	-	-	(516)	(1)	(53)
Other	0	5	8	9	12	(1)	30	(76)	23	9	18
Net Cash From Investing Activities	27	(76)	(144)	(312)	(300)	(308)	(317)	(233)	(621)	(244)	(383)
Net Change in Debt	-	-	-	(54)	-	-	-	-	113	57	140
Net Change in Common Stock	22	5	25	5	4	4	11	(9)	294	(18)	(13)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	(0)	1
Net Cash From Financing Activities	22	5	25	(49)	4	4	11	(9)	407	39	128
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	(7)	0	(2)	(3)
Net Increase/(Decrease) in Cash	159	94	85	(4)	(139)	216	(97)	(187)	(120)	(17)	28
Cash and Equivalents, Beginning of Year	18	177	271	355	352	213	429	332	145	25	27
Cash and Equivalents, End of Year	177	271	355	352	213	429	332	145	25	9	54

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Gran Tierra (GTE - TSX, AMEX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	195	321	418	458	414	512	465	234	132	145	203
Net Property, Plant and Equipment	768	713	727	1,045	1,205	1,260	1,129	789	1,067	1,099	1,313
Other Assets	110	110	104	124	114	132	120	123	170	185	161
Total Assets	1,073	1,144	1,249	1,627	1,733	1,905	1,714	1,146	1,368	1,430	1,677
Total Current Liabilities	62	106	152	245	191	267	225	74	155	157	169
Long-term Debt	0	-	-	-	-	-	-	-	197	257	399
Deferred Income Taxes	214	217	205	187	225	177	175	35	107	28	23
Other Liabilities and Deferred Credits	4	5	6	21	25	31	37	36	50	51	55
Total Liabilities	281	327	362	452	441	475	437	144	509	493	647
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	0	1	5	8	8	10	10	10	10	10	10
Contributed Surplus (Paid-in Capital)	753	767	822	980	999	1,009	1,027	1,020	1,343	1,327	1,318
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	7	21	58	185	285	411	240	(28)	(494)	(401)	(299)
Other / Comprehensive Income (Loss)	31	27	2	2	-	-	-	-	-	-	-
Total Shareholders' Equity	792	816	887	1,174	1,291	1,430	1,277	1,002	859	936	1,030
Total Liabilities and Shareholders' Equity	1,073	1,144	1,249	1,627	1,733	1,905	1,714	1,146	1,368	1,430	1,677

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$85.69	$62.20	$71.07	$89.82	$88.62	$89.66	$74.54	$38.99	$34.09	$44.08	$57.85	$46.22	$49.96
Production Costs	$14.44	$9.62	$11.28	$13.00	$18.92	$18.47	$15.11	$16.27	$13.99	$14.11	$16.48	$14.95	$15.19
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$19.34	$32.05	$31.05	$34.76	$27.57	$33.10	$24.64	$24.79	$16.44	$13.73	$18.66	$16.36	$19.19
G&A/Other	$13.97	$6.79	$7.64	$9.08	$8.92	$6.62	$6.79	$4.55	$3.91	$4.08	$3.72	$3.90	$4.51
Pre-tax Results of Operations	$37.94	$13.75	$21.11	$32.97	$33.22	$31.48	$28.00	-$6.62	-$0.26	$12.17	$18.99	$11.01	$11.07
Income Taxes	$17.88	$8.74	$12.80	$15.11	$16.45	$16.29	$14.00	-$1.80	-$0.07	$3.38	$5.34	$3.09	$3.58
Results of Operations	$20.06	$5.00	$8.31	$17.86	$16.77	$15.18	$14.00	-$4.82	-$0.18	$8.79	$13.66	$7.92	$7.50

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Gran Tierra (GTE - TSX, AMEX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	0.0	0.1	0.7	3.7	4.1	3.9	2.9	0.9	1.6	1.6	0.6	1.3	1.5
Liquids Production (b/d)	3,639	11,593	14,312	17,608	17,414	21,463	20,189	19,345	22,978	25,942	28,956	25,959	23,482
Total Production (boe/d)	3,646	11,615	14,434	18,223	18,091	22,111	20,665	19,490	23,249	26,211	29,052	26,171	23,733
% Gas Production	0%	0%	1%	3%	4%	3%	2%	1%	1%	1%	0%	1%	1%
% Oil Production	100%	100%	99%	97%	96%	97%	98%	99%	99%	99%	100%	99%	99%
Proven Reserves:													
Closing Gas Reserves (bcf)	1.2	1.9	1.2	18.3	12.8	13.5	1.0	4.6	5.2	2.1	2.2	3.1	3.0
Closing Oil Reserves (mmbbls)	19.2	21.4	23.3	31.0	38.5	39.8	36.9	38.1	51.9	59.0	53.9	54.9	48.0
Closing Total Proven Reserves (mmboe)	19.4	21.7	23.5	34.0	40.6	42.1	37.0	38.9	52.8	59.3	54.3	55.5	48.5
% Gas Reserves	1%	1%	1%	9%	5%	5%	0%	2%	2%	1%	1%	1%	1%
% Oil Reserves	99%	99%	99%	91%	95%	95%	100%	98%	98%	99%	99%	99%	99%
Proven Reserve Life Index	14.6	5.1	4.5	5.1	6.2	5.2	4.9	5.5	6.2	6.2	5.1	5.8	5.6
Proven Reserve Additions:													
Gas Additions (bcf)	1.2	0.7	-0.3	18.3	-4.1	2.1	-11.4	4.0	1.1	1.1	0.3	2.5	-4.9
Oil Additions (mmbbls)	14.1	7.2	6.8	13.3	13.9	9.2	4.4	8.3	22.2	22.5	5.5	50.3	63.0
Total Additions (mmboe)	14.3	7.3	6.8	16.3	13.3	9.5	2.5	9.0	22.4	22.7	5.6	50.7	62.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	5.7	2.0	2.9	3.9	7.6	4.8	4.7	2.4	1.2	12.9	7.2	21.3	28.3
Net Acquisitions	9.2	-0.1	0.0	7.9	0.2	0.0	-3.9	0.0	20.6	2.0	1.9	24.5	20.6
Revisions of Estimates	-0.6	5.5	3.9	4.6	5.4	4.7	1.7	6.6	0.6	7.8	-3.5	5.0	13.3
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	39.9%	26.7%	42.9%	23.9%	57.2%	50.8%	187.0%	26.4%	5.4%	56.7%	128.3%	41.9%	45.5%
Net Acquisitions	64.2%	-1.5%	0.0%	48.2%	1.7%	0.0%	-155.3%	0.0%	91.8%	9.0%	33.5%	48.3%	33.1%
Revisions of Estimates	-4.1%	74.7%	57.1%	27.9%	41.1%	49.2%	68.3%	73.6%	2.8%	34.4%	-61.8%	9.8%	21.3%
Additions as % of Production:													
Gas	nm	nm	-116.7%	nm	-273.7%	147.7%	nm	nm	193.1%	183.2%	146.9%	182.0%	-179.4%
Oil	1065.3%	169.7%	130.5%	206.4%	219.2%	117.3%	59.8%	117.4%	264.8%	238.1%	52.4%	176.9%	147.0%
Total	1078.0%	172.2%	128.4%	245.2%	200.7%	118.2%	33.1%	125.8%	264.0%	237.5%	52.7%	177.0%	143.5%
Additions as % of Reserves:													
Gas	101.3%	38.6%	-25.5%	99.8%	-31.8%	15.6%	-1162.6%	85.6%	22.1%	51.7%	14.1%	80.4%	-163.8%
Oil	73.5%	33.6%	29.3%	42.8%	36.2%	23.1%	11.9%	21.8%	42.8%	38.2%	10.3%	91.5%	131.3%
Total	73.8%	33.6%	28.8%	47.9%	32.6%	22.7%	6.7%	23.0%	42.4%	38.3%	10.3%	91.4%	128.3%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$0	$24	$60	$30	$0	$93	$96	$22	$44	$64	$78	$186	$304
Exploration & Development	$0	$53	$117	$173	$197	$281	$320	$138	$82	$171	$246	$499	$957
Net Acquisitions	$47	$0	$0	$0	$86	-$60	-$69	$0	$909	$43	$52	$1,004	$935
Total Expenditures	$47	$77	$177	$203	$282	$315	$347	$159	$1,035	$278	$376	$1,690	$2,196
Expenditures as % of Total (US$million):													
Land & Seismic	0.0%	31.5%	33.7%	14.8%	0.0%	29.5%	27.7%	13.6%	4.3%	23.0%	20.7%	11.0%	13.8%
Exploration & Development	0.0%	68.5%	66.3%	85.2%	69.6%	89.4%	92.3%	86.4%	7.9%	61.6%	65.4%	29.6%	43.6%
Net Acquisitions	100.0%	0.0%	0.0%	0.0%	30.4%	-18.9%	-20.0%	0.0%	87.8%	15.4%	13.9%	59.4%	42.6%
Cashflow (US$million)	$49	$159	$203	$319	$287	$353	$307	$102	$104	$219	$306	$629	$1,038
Cashflow (US$/boe)	$37.15	$37.62	$38.56	$47.97	$43.52	$43.73	$40.64	$14.35	$12.30	$22.88	$28.85	$21.96	$23.96
Recycle Ratio	11.4x	3.6x	1.5x	3.9x	2.0x	1.3x	0.3x	0.8x	0.3x	1.9x	0.4x	0.7x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$0.00	$10.43	$26.17	$23.97	$15.09	$39.26	$65.27	$17.79	$68.81	$11.39	$87.15	$26.13	$30.34
Net Acquisition Costs	$5.07	$0.00	na	$0.00	$386.57	na	$17.86	na	$44.19	$21.04	$27.91	$41.02	$45.38
All Sources (incl. revisions)	$3.26	$10.59	$26.17	$12.42	$21.31	$33.01	$138.89	$17.79	$46.21	$12.25	$67.32	$33.32	$35.32
Exploration & Development (excl. revisions)	$0.00	$39.59	$61.02	$51.97	$25.94	$77.36	$89.12	$67.42	$103.75	$18.29	$45.20	$32.24	$44.57
Net Acquisition Costs	$5.07	$0.00	na	$0.00	$386.57	na	$17.86	na	$44.19	$21.04	$27.91	$41.02	$45.38
All Sources (excl. revisions)	$3.13	$41.93	$61.02	$17.23	$36.20	$65.04	$438.50	$67.42	$47.52	$18.66	$41.62	$36.94	$44.91
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
South America	$3.26	$10.59	$26.17	$20.09	$21.31	$33.01	$138.85	$17.79	$46.21	$12.25	$67.32	$33.32	$33.25

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Gran Tierra (GTE - TSX, AMEX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.44	9.62	11.28	13.00	18.92	18.47	15.11	16.27	13.99	14.95	15.19	14.95	15.19
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	13.97	6.79	7.64	9.08	8.92	6.62	6.79	4.55	3.91	3.90	4.51	3.90	4.51
F&D Costs (1-Year)	3.26	10.59	26.17	12.42	21.31	33.01	37.34	17.79	46.21	33.32	35.32	33.32	35.32
Return on Capital	3.07	3.45	7.57	4.03	8.19	10.99	11.75	6.19	18.12	12.31	12.54	12.31	12.54
Income Taxes	2.73	6.03	11.65	3.40	8.02	11.79	11.75	2.31	7.19	4.81	5.98	4.81	5.98
Breakeven Oil Price	**37.47**	**36.47**	**64.31**	**41.93**	**65.36**	**80.88**	**82.74**	**47.11**	**89.41**	**69.28**	**73.55**	**69.28**	**73.55**
Quality Differential	12.50	0.35	8.81	18.21	19.53	16.54	23.14	14.29	10.69	11.50	14.39	11.50	14.39
Required Brent Price	**49.97**	**36.83**	**73.12**	**60.14**	**84.88**	**97.42**	**105.87**	**61.40**	**100.10**	**80.78**	**87.93**	**80.78**	**87.93**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.46	9.63	11.35	13.35	19.48	18.88	15.35	16.33	14.09	14.22	16.52	15.03	15.30
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	13.99	6.80	7.68	9.32	9.18	6.76	6.90	4.56	3.94	4.11	3.73	3.92	4.54
F&D Costs (1-Year)	3.29	10.69	26.03	23.48	20.51	33.93	35.19	18.40	46.44	12.32	33.51	33.51	34.93
Return on Capital	3.08	3.46	7.53	7.33	7.79	11.09	11.18	6.37	18.16	4.83	10.92	12.37	12.41
Income Taxes	2.74	6.04	11.59	6.20	7.64	11.90	11.18	2.38	7.20	1.86	4.27	4.83	5.92
Breakeven Oil Price	**37.55**	**36.62**	**64.18**	**59.68**	**64.60**	**82.56**	**79.79**	**48.04**	**89.83**	**37.34**	**68.94**	**69.66**	**73.09**
Quality Differential	12.51	0.35	8.86	18.70	20.10	16.90	23.50	14.33	10.76	10.41	13.52	11.56	14.51
Required Brent Price	**50.07**	**36.97**	**73.04**	**78.38**	**84.71**	**99.47**	**103.29**	**62.37**	**100.59**	**47.75**	**82.46**	**81.23**	**87.60**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	14.46	9.63	11.35	13.35	19.48	18.88	15.35	16.33	14.09	14.22	16.52	15.03	15.30
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	13.99	6.80	7.68	9.32	9.18	6.76	6.90	4.56	3.94	4.11	3.73	3.92	4.54
F&D Costs (1-Year)	6.98	5.34	46.87	19.42	25.35	31.08	35.34	17.96	68.72	24.26	47.69	49.08	38.79
Return on Capital	6.53	1.73	13.59	6.09	9.71	10.16	11.22	6.22	26.83	9.51	15.46	18.13	13.75
Income Taxes	5.82	3.02	20.92	5.15	9.52	10.90	11.22	2.32	10.64	3.66	6.04	7.08	6.56
Breakeven Oil Price	**47.79**	**26.51**	**100.41**	**53.33**	**73.23**	**77.78**	**80.04**	**47.39**	**124.22**	**55.75**	**89.44**	**93.24**	**78.95**
Quality Differential	12.51	0.35	8.86	18.70	20.10	16.90	23.50	14.33	10.76	10.41	13.52	11.56	14.51
Required Brent Price	**60.30**	**26.87**	**109.27**	**72.02**	**93.34**	**94.68**	**103.54**	**61.72**	**134.98**	**66.16**	**102.95**	**104.80**	**93.45**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

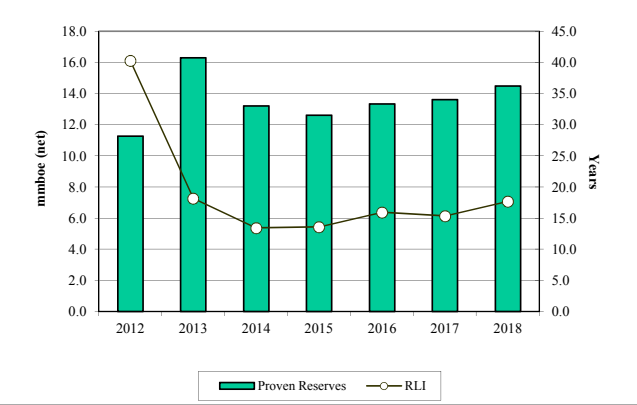
Igas Energy (IGAS - LSE)

US$, net

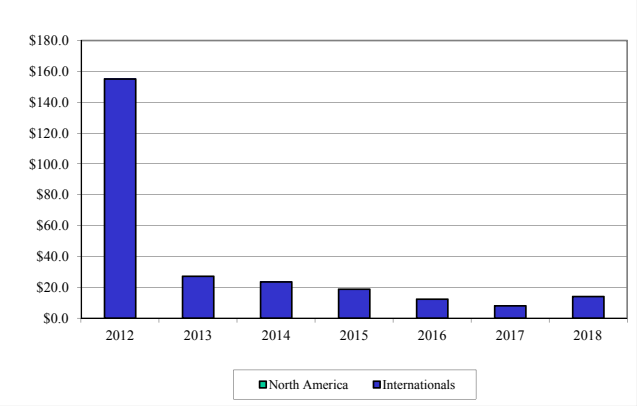
- Igas reported a loss from operations of $29.24/boe in 2018 versus a gain of $3.05/boe in 2017.
- The company reported a loss on capital employed of 10.7% in 2018.
- 2018 F&D costs rose to $8.33/boe compared to $6.89/boe last year.
- Igas' 2018 operations implied a required Brent breakeven oil price of $112.99/boe.

Notes: Financial figures have been converted from British Pounds to U.S. Dollars using average annual exchange rates; Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

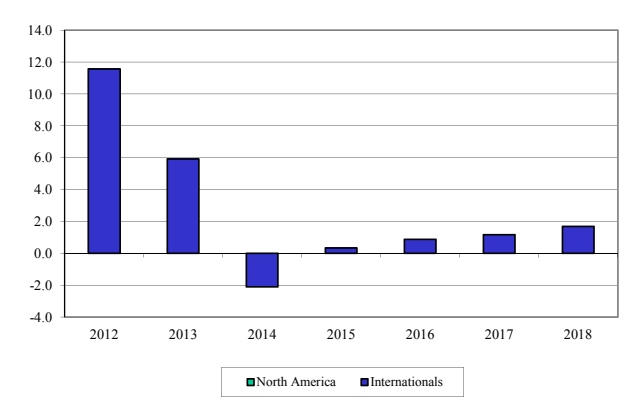
Proven Reserves vs RLI



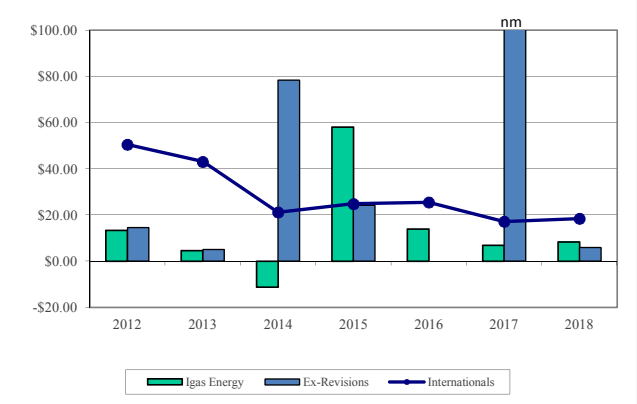
Capital Spending by Region (US$million)



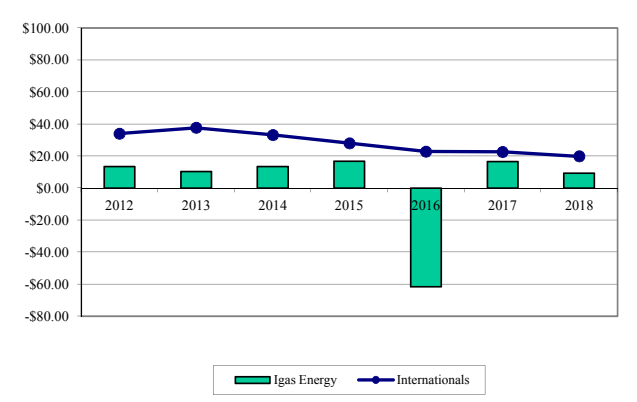
Proven Reserve Additions by Region (million boe)



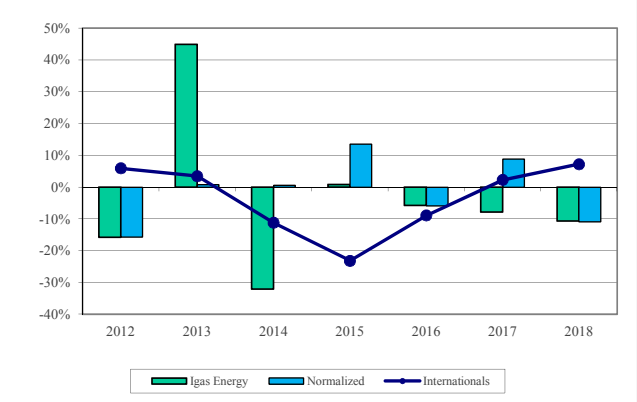
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



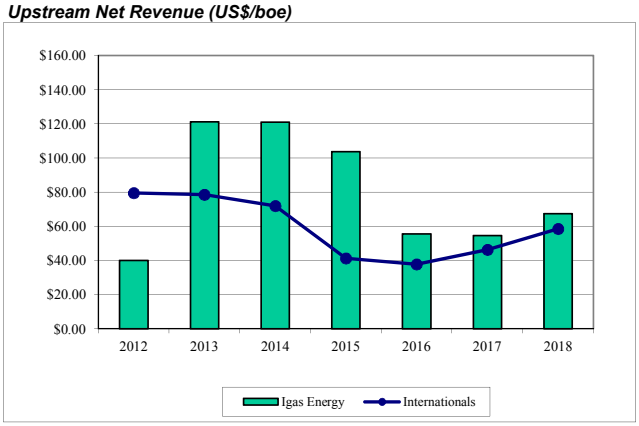
Source: BMO Capital Markets, Company Reports

Igas Energy (IGAS - LSE)

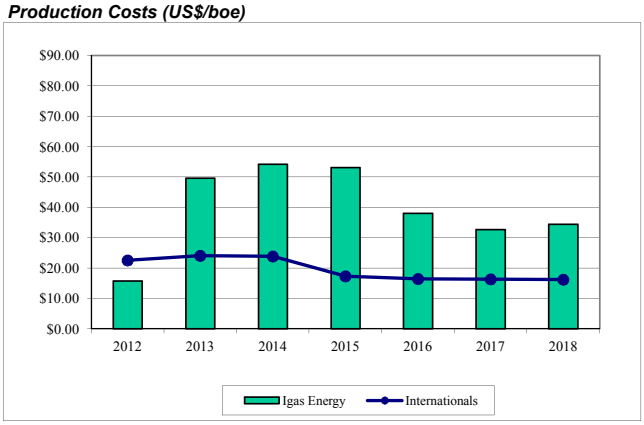
US$, net

International

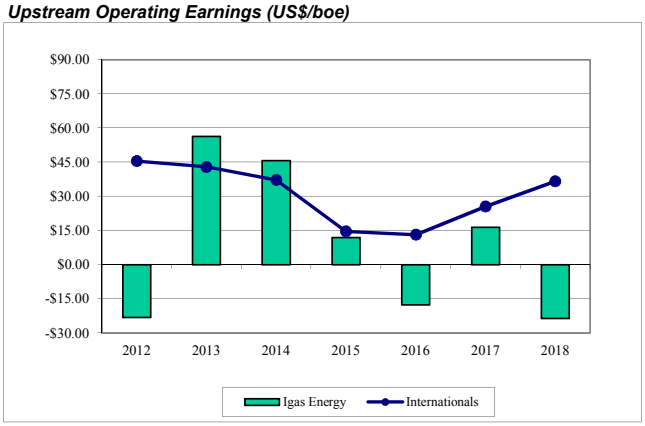
Upstream Net Revenue (US$/boe)



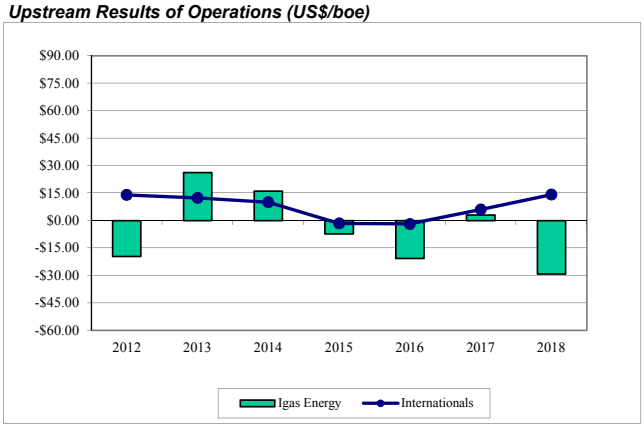
Production Costs (US$/boe)



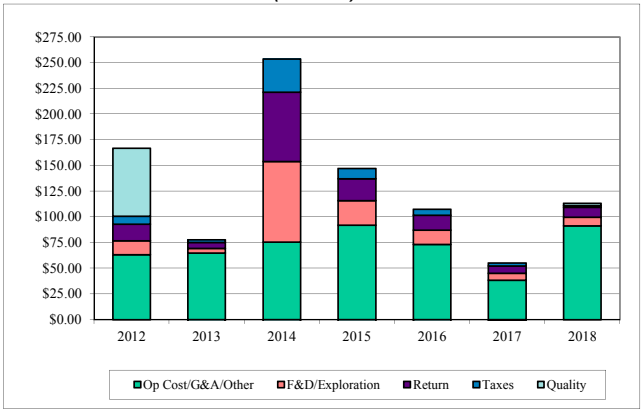
Upstream Operating Earnings (US$/boe)



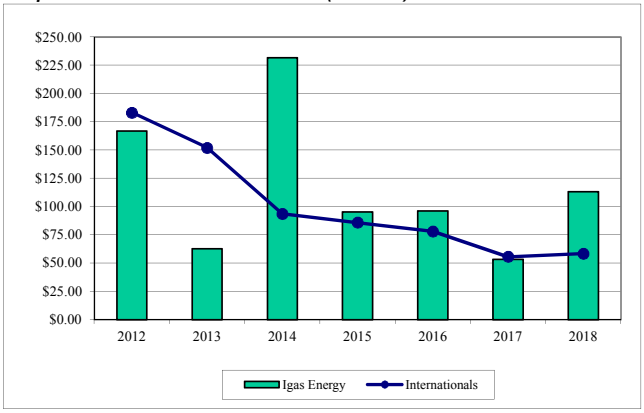
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Igas Energy (IGAS - LSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	1	35	107	125	89	41	46	57
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	0	0	0	0	-	-	-
Total Revenue and Other Income	-	-	-	1	35	107	125	89	41	46	57
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	1	14	44	56	46	28	28	29
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	-	3	8	13	13	13	15	8	19
Depreciation, Depletion and Amortization	-	-	-	-	5	16	23	20	9	10	9
Interest, net	-	-	-	(0)	3	44	21	19	39	8	4
Other	-	-	-	-	34	0	9	20	11	(4)	29
Earnings Before Income Tax	-	-	-	(2)	(28)	(9)	4	(28)	(61)	(4)	(34)
Income Taxes:											
Current Income Taxes	-	-	-	-	(9)	19	-	2	(0)	(1)	0
Future Income Taxes	-	-	-	-	-	-	17	(38)	(17)	(24)	(5)
Total Income Taxes	-	-	-	-	(9)	19	17	(36)	(18)	(25)	(5)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	(2)	(19)	(29)	(13)	8	(43)	20	(29)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	(0)	(2)	(0)	0
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	(2)	(19)	(29)	(13)	8	(45)	20	(28)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	(2)	(19)	(29)	(13)	8	(45)	20	(28)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	(2)	(19)	(29)	(13)	8	(43)	20	(29)
Charges and Credits Not Impacting Cash	-	-	-	0	5	18	45	(18)	(9)	(14)	4
Other	-	-	-	(0)	18	53	16	50	65	5	40
Cash Flow From Operations	-	-	-	(3)	4	42	49	40	13	11	15
Change in Working Capital / Other	-	-	-	(0)	(8)	3	(7)	(0)	5	(3)	2
Net Cash From Operating Activities	-	-	-	(3)	(4)	45	41	40	18	9	18
Total Capital Expenditures	-	-	-	-	-	-	-	(26)	(12)	(8)	(14)
Acquisitions, net	-	-	-	(6)	(156)	(27)	(24)	4	(0)	0	0
Other	-	-	-	0	1	0	0	2	(0)	0	0
Net Cash From Investing Activities	-	-	-	(6)	(155)	(27)	(24)	(19)	(12)	(8)	(14)
Net Change in Debt	-	-	-	-	129	(37)	32	(21)	(0)	(58)	(2)
Extraordinary Charges	-	-	-	0	33	36	7	2	0	55	0
Extraordinary Charges - After Tax	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	(6)	(10)	(14)	(13)	(12)	(6)	(2)
Net Cash From Financing Activities	-	-	-	0	156	(10)	25	(33)	(11)	(9)	(4)
Effect of Exchange Rate on Cash	-	-	-	-	0	1	(3)	4	6	(2)	0
Net Increase/(Decrease) in Cash	-	-	-	(9)	(3)	8	40	(7)	1	(10)	0
Cash and Equivalents, Beginning of Year	-	-	-	28	19	12	16	43	39	32	21
Cash and Equivalents, End of Year	-	-	-	19	16	21	56	36	39	22	21

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Igas Energy (IGAS - LSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	20	33	191	68	56	45	32	51
Net Property, Plant and Equipment	-	-	-	0	159	217	190	159	132	120	122
Other Assets	-	-	-	7	128	146	215	299	159	177	154
Total Assets	-	-	-	28	320	554	472	515	336	329	327
Total Current Liabilities	-	-	-	1	66	204	38	32	22	15	33
Long-term Debt	-	-	-	-	93	149	171	156	161	25	25
Deferred Income Taxes	-	-	-	-	33	63	95	50	2	-	-
Other Liabilities and Deferred Credits	-	-	-	-	42	45	47	52	55	55	53
Total Liabilities	-	-	-	1	233	461	350	291	241	95	111
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	32	86	89	28	40	41	39	41
Contributed Surplus (Paid-in Capital)	-	-	-	4	29	59	97	180	0	132	137
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	(7)	(26)	(54)	(70)	(56)	26	62	36
Other / Comprehensive Income (Loss)	-	-	-	(2)	(2)	(1)	67	60	28	1	2
Total Shareholders' Equity	-	-	-	27	87	93	122	224	96	234	216
Total Liabilities and Shareholders' Equity	-	-	-	28	320	554	472	515	336	329	327
Return on Capital Employed (ROCE)				**-35.3%**	**-15.7%**	**45.0%**	**-32.0%**	**0.8%**	**-5.7%**	**-7.9%**	**-10.7%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	-	-	$39.99	$121.15	$121.10	$103.67	$55.56	$54.61	$67.47	$56.84	$80.61
Production Costs	-	-	-	-	$15.81	$49.62	$54.21	$53.11	$38.03	$32.70	$34.47	$33.45	$41.95
Exploration	-	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	-	-	$5.73	$17.63	$22.09	$22.73	$11.53	$11.95	$10.73	$10.91	$15.75
G&A / Other	-	-	-	-	$47.40	$15.14	$21.13	$38.59	$35.16	$5.53	$56.64	$30.99	$30.06
Pre-tax Results of Operations	-	-	-	-	-$28.95	$38.76	$23.67	-$10.76	-$29.16	$4.43	-$34.36	-$18.51	-$7.15
Income Taxes	-	-	-	-	-$9.34	$12.50	$7.64	-$3.47	-$8.47	$1.38	-$5.12	-$4.64	-$2.00
Results of Operations	-	-	-	-	-$19.61	$26.25	$16.04	-$7.29	-$20.69	$3.05	-$29.24	-$13.87	-$5.15

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Igas Energy (IGAS - LSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	0.0	0.4	0.1	0.6	0.5	0.8	0.5	0.6	0.5
Liquids Production (b/d)	-	-	-	-	767	2,384	2,685	2,438	2,219	2,301	2,164	2,228	2,362
Total Production (boe/d)	-	-	-	-	767	2,457	2,694	2,543	2,297	2,434	2,247	2,326	2,443
% Gas Production	-	-	-	-	0%	3%	0%	4%	3%	5%	4%	4%	3%
% Oil Production	-	-	-	-	100%	97%	100%	96%	97%	95%	96%	96%	97%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	8.2	8.0	5.9	3.5	4.0	2.3	11.4	5.9	5.4
Closing Oil Reserves (mmbbls)	-	-	-	-	9.9	15.0	12.2	12.0	12.7	13.3	12.6	12.8	12.6
Closing Total Proven Reserves (mmboe)	-	-	-	-	11.3	16.3	13.2	12.6	13.3	13.6	14.5	13.8	13.5
% Gas Reserves	-	-	-	-	12%	8%	7%	5%	5%	3%	13%	7%	7%
% Oil Reserves	-	-	-	-	88%	92%	93%	95%	95%	97%	87%	93%	93%
Proven Reserve Life Index	-	-	-	-	40.3	18.2	13.4	13.6	15.9	15.3	17.7	16.3	15.2
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	8.2	-0.1	-2.0	-2.2	0.0	-1.4	9.3	8.0	3.7
Oil Additions (mmbbls)	-	-	-	-	10.2	5.9	-1.8	0.7	0.9	1.4	0.1	2.4	1.3
Total Additions (mmboe)	-	-	-	-	11.6	5.9	-2.1	0.3	0.9	1.2	1.7	3.7	2.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	0.0	0.0	0.0	0.8	0.0	0.0	2.4	2.4	3.2
Net Acquisitions	-	-	-	-	10.7	5.4	0.3	0.0	0.0	0.0	0.0	0.0	0.3
Revisions of Estimates	-	-	-	-	0.9	0.5	-2.4	-0.5	0.9	1.2	-0.7	1.4	-1.5
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	0.0%	0.0%	0.0%	240.0%	0.0%	0.0%	141.3%	63.8%	161.1%
Net Acquisitions	-	-	-	-	92.1%	90.8%	-14.3%	0.0%	0.0%	0.0%	0.0%	0.0%	15.3%
Revisions of Estimates	-	-	-	-	7.9%	9.2%	114.3%	-140.0%	100.0%	100.0%	-41.3%	36.2%	-76.4%
Additions as % of Production:													
Gas	-	-	-	-	0.0%	-62.5%	-10100.0%	-952.2%	11.8%	-486.2%	5188.9%	1242.2%	420.2%
Oil	-	-	-	-	3639.3%	681.6%	-179.6%	77.5%	108.6%	166.7%	16.5%	98.8%	31.1%
Total	-	-	-	-	4128.0%	659.5%	-213.2%	35.0%	105.4%	131.1%	205.7%	146.7%	44.0%
Additions as % of Reserves:													
Gas	-	-	-	-	100.0%	-1.3%	-34.2%	-62.8%	0.5%	-62.7%	81.9%	135.4%	69.2%
Oil	-	-	-	-	102.8%	39.6%	-14.4%	5.7%	6.9%	10.6%	1.0%	18.8%	10.7%
Total	-	-	-	-	102.5%	36.3%	-15.9%	2.6%	6.6%	8.6%	11.6%	27.0%	14.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	-	-	-	-	$155	$27	$24	$19	$12	$8	$14	$34	$77
Net Acquisitions	-	-	-	-	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	-	-	-	-	$155	$27	$24	$19	$12	$8	$14	$34	$77
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	-	-	-	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-	-	-	-	$2	$27	$30	$26	$10	$9	$12	$30	$86
Cashflow (US$/boe)	-	-	-	-	$8.33	$29.75	$30.11	$28.53	$11.43	$10.04	$14.12	$11.81	$19.33
Recycle Ratio	-	-	-	-	0.6x	6.5x	-2.7x	0.5x	0.8x	1.5x	1.7x	1.3x	0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	-	$170.73	$50.20	-$9.82	$58.03	$13.97	$6.89	$8.33	$9.22	$46.18
Net Acquisition Costs	-	-	-	-	nm	nm	nm	nm	nm	$0.00	$0.00	nm	nm
All Sources (incl. revisions)	-	-	-	-	$13.42	$4.61	-$11.23	$58.03	$13.97	$6.89	$8.33	$9.22	$39.13
Exploration & Development (excl. revisions)	-	-	-	-	nm	nm	nm	$24.18	nm	nm	nm	$14.44	$24.28
Net Acquisition Costs	-	-	-	-	nm	nm	nm	nm	nm	$0.00	$0.00	nm	nm
All Sources (excl. revisions)	-	-	-	-	$14.56	$5.08	$78.45	$24.18	nm	nm	nm	$14.44	$22.18
Geographically Segmented Costs													
North America	-	-	-	-	na	na	na	na	na	na	na	na	na
International	-	-	-	-	$13.42	$4.61	-$11.23	$58.03	$13.97	$6.89	$8.33	$9.22	$39.13

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Igas Energy (IGAS - LSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	15.81	49.62	54.21	53.11	38.03	32.70	34.47	33.45	41.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	47.40	15.14	21.13	38.59	35.16	5.53	56.64	30.99	30.06
F&D Costs (1-Year)	-	-	-	-	13.42	4.61	78.45	24.18	13.97	6.89	8.33	9.22	26.36
Return on Capital	-	-	-	-	16.20	5.56	67.56	21.05	14.39	6.86	9.75	9.84	25.94
Income Taxes	-	-	-	-	7.72	2.65	32.17	10.02	5.89	3.11	1.71	3.29	10.05
Breakeven Oil Price	**-**	**-**	**-**	**-**	**100.55**	**77.58**	**253.52**	**146.96**	**107.45**	**55.10**	**110.89**	**86.79**	**134.37**
Quality Differential	-	-	-	-	66.17	(14.99)	(21.96)	(51.67)	(11.44)	(1.82)	2.09	(3.72)	(16.96)
Required Brent Price	**-**	**-**	**-**	**-**	**166.72**	**62.59**	**231.56**	**95.29**	**96.01**	**53.28**	**112.99**	**83.06**	**117.41**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	-	15.81	49.62	54.21	53.11	38.03	32.70	34.47	34.46	42.95
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	-	8.87	14.76	12.53	15.17	20.80	9.96	22.28	31.93	30.78
F&D Costs (1-Year)	-	-	-	-	13.42	4.61	78.45	24.18	13.97	6.89	8.33	9.73	26.36
Return on Capital	-	-	-	-	16.20	5.56	67.56	21.05	14.39	6.86	9.75	10.39	25.94
Income Taxes	-	-	-	-	7.72	2.65	32.17	10.02	5.89	3.11	1.71	3.47	10.05
Breakeven Oil Price	**-**	**-**	**-**	**-**	**62.01**	**77.20**	**244.93**	**123.53**	**93.08**	**59.52**	**76.53**	**89.98**	**136.09**
Quality Differential	-	-	-	-	66.17	(14.99)	(21.96)	(51.67)	(11.44)	(1.82)	2.09	(3.72)	(16.96)
Required Brent Price	**-**	**-**	**-**	**-**	**128.18**	**62.21**	**222.96**	**71.86**	**81.64**	**57.71**	**78.63**	**86.26**	**119.13**

Source: BMO Capital Markets, Company Reports

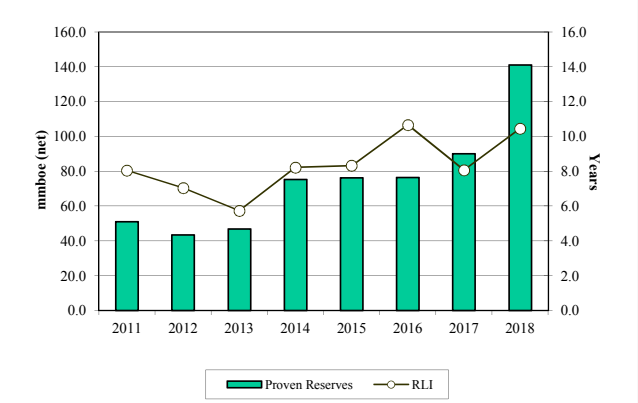
See pages F1 to F4 for analyst coverage.

Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB) US$, net

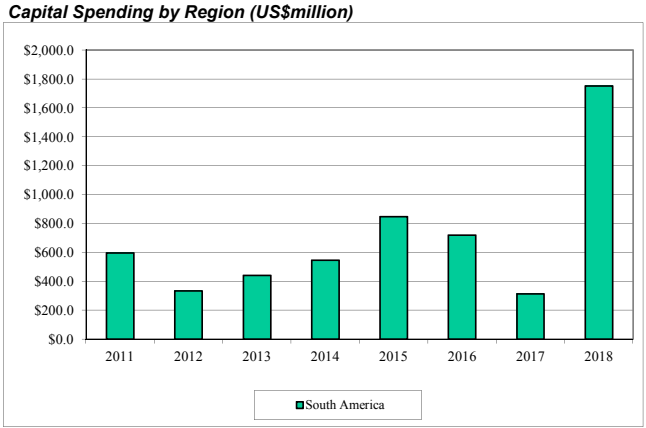
- Kosmos managed to narrow its loss from operations to $1.98/boe in 2018 from a loss of $3.98/boe last year.
- The company reported ROCE of 3.7 % in 2018.
- 2018 F&D costs came in at $27.16/boe, up from $12.62/boe last year. On a realized oil:gas price ratio basis, F&D costs rose to $29.30/boe from $13.34/boe.
- Kosmos' 2018 operations suggest a Brent breakeven oil price of $116.35/boe on a realized ratio basis.

Notes: Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

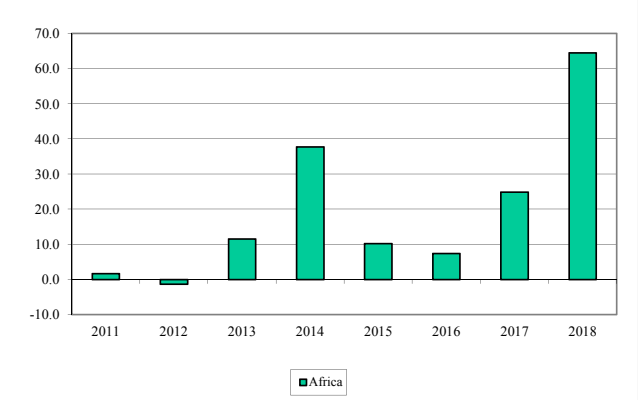
Proven Reserves vs RLI



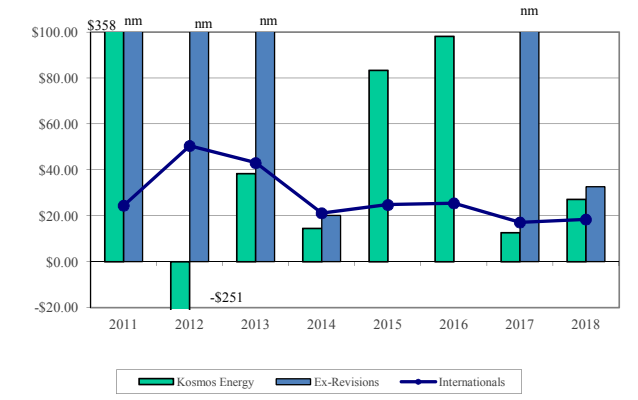
Capital Spending by Region (US$million)



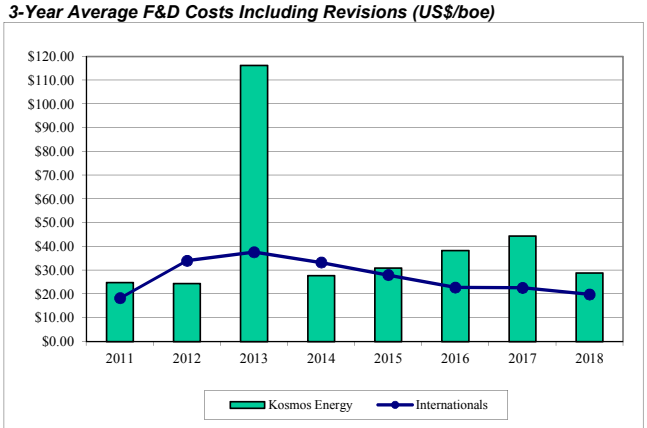
Proven Reserve Additions by Region (million boe)



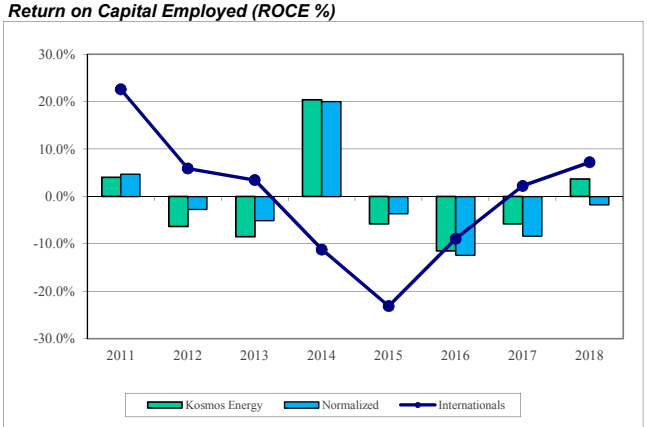
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)

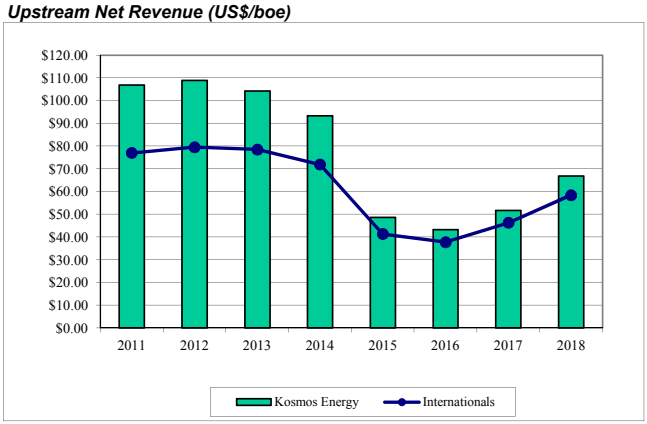


Source: BMO Capital Markets, Company Reports

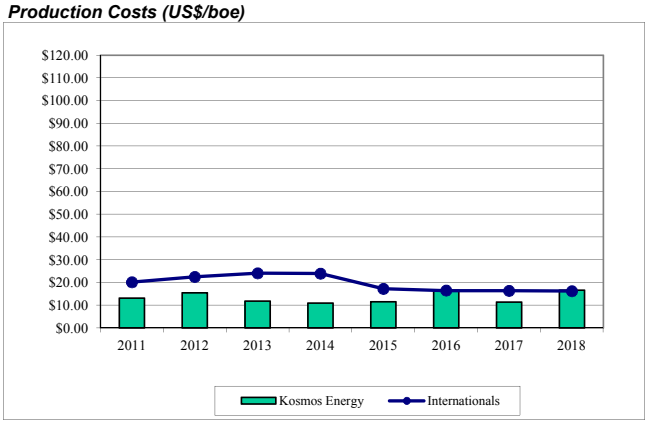
Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB) US$, net

International

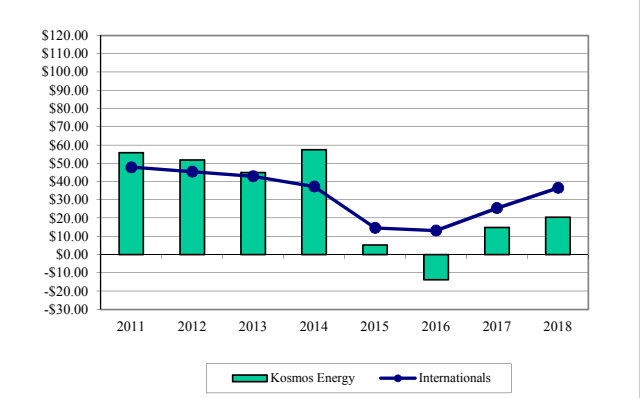
Upstream Net Revenue (US$/boe)



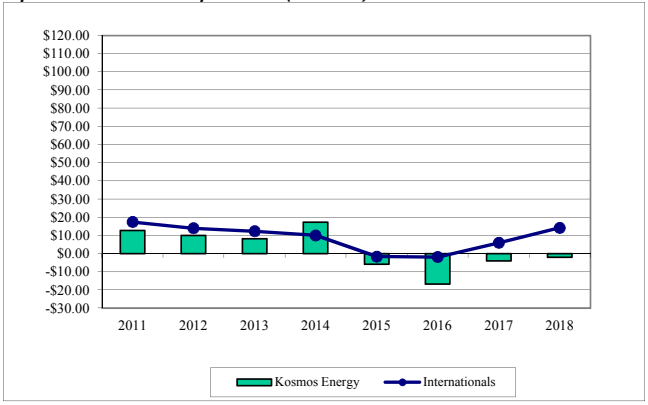
Production Costs (US$/boe)



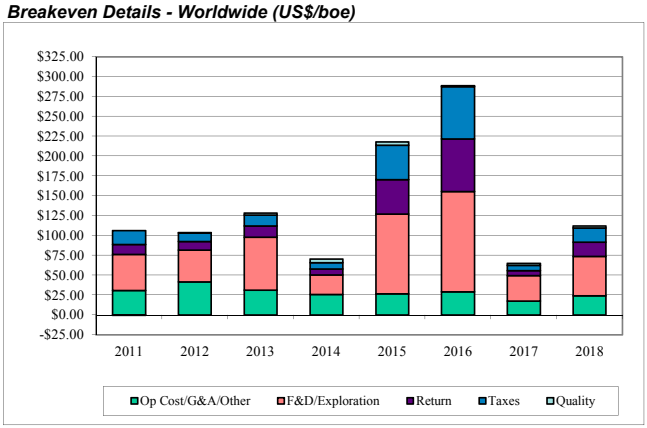
Upstream Operating Earnings (US$/boe)



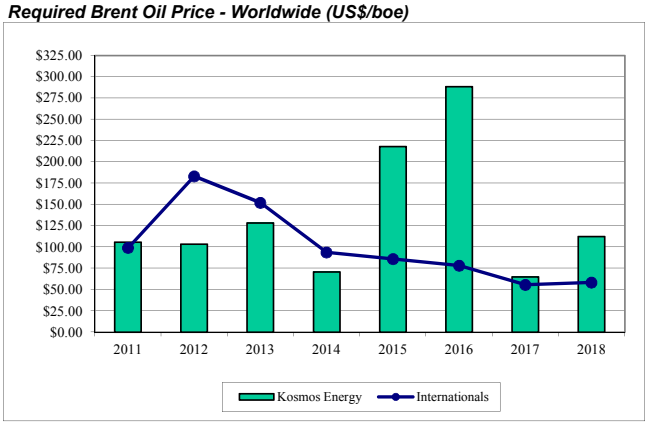
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	667	668	851	856	447	310	578	887
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	8	10	9	10	4	1	-	-	-	-	16
Total Revenue and Other Income	8	10	9	677	672	852	856	447	310	578	902
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	84	95	97	100	105	119	127	225
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	15	22	73	129	98	230	94	156	202	216	301
General and Administrative	40	56	99	111	160	158	135	137	88	68	100
Depreciation, Depletion and Amortization	1	4	31	157	195	234	198	156	140	255	330
Interest, net	0	7	60	66	52	37	46	37	44	78	101
Other	0	0	1	0	1	4	(295)	(230)	11	12	(104)
Earnings Before Income Tax	(49)	(79)	(255)	131	71	93	578	85	(295)	(178)	(51)
Current Income Taxes	0	1	(77)	77	101	167	299	155	(11)	35	34
Future Income Taxes	-	-	-	-	-	-	-	-	-	10	9
Total Income Taxes	0	1	(77)	77	101	167	299	155	(11)	45	43
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(49)	(80)	(178)	54	(30)	(74)	279	(70)	(284)	(223)	(94)
Discontinued Operations/Extraordinary Items	-	-	(68)	(32)	(37)	(17)	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(49)	(80)	(246)	22	(67)	(91)	279	(70)	(284)	(223)	(94)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(49)	(80)	(246)	22	(67)	(91)	279	(70)	(284)	(223)	(94)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(49)	(80)	(178)	54	(30)	(74)	279	(70)	(284)	(223)	(94)
Charges and Credits Not Impacting Cash	1	5	(46)	213	275	316	414	267	117	265	339
Other	-	6	80	135	82	154	(513)	177	305	203	(10)
Cash Flow From Operations	(48)	(69)	(144)	402	326	396	181	374	138	245	235
Change in Working Capital / Other	-	42	(48)	(37)	45	126	263	66	(86)	(9)	16
Net Cash From Operating Activities	(48)	(28)	(192)	365	372	522	444	441	52	237	251
Total Capital Expenditures	-	(418)	(446)	(483)	(379)	(322)	(427)	(825)	(538)	(143)	(222)
Acquisitions, net	-	-	-	-	-	-	58	29	0	222	(948)
Other	-	(82)	(144)	98	(24)	(2)	21	(4)	-	(231)	185
Net Cash From Investing Activities	-	(500)	(590)	(385)	(403)	(324)	(348)	(800)	(538)	(153)	(985)
Net Change in Debt	-	285	760	65	(110)	(100)	(106)	107	450	(50)	850
Net Change in Common Stock	-	-	-	580	(8)	(13)	(11)	(18)	(2)	(2)	(206)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	235	(17)	(52)	(8)	(2)	(22)	(9)	-	(0)	(39)
Net Cash From Financing Activities	-	520	743	593	(127)	(115)	(139)	80	448	(52)	605
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	(48)	(8)	(39)	573	(158)	83	(43)	(280)	(38)	32	(129)
Cash and Equivalents, Beginning of Year	(58)	148	140	100	673	515	598	555	232	202	293
Cash and Equivalents, End of Year	(106)	140	100	673	515	598	555	275	194	233	164

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	560	1,112	750	735	1,010	734	475	534	510
Net Property, Plant and Equipment	-	-	998	1,377	1,526	1,523	1,785	2,323	2,709	2,318	3,460
Other Assets	-	-	134	62	90	88	177	146	157	341	119
Total Assets	-	-	1,692	2,552	2,366	2,346	2,973	3,203	3,341	3,193	4,088
Total Current Liabilities	-	-	482	340	190	219	449	457	370	429	384
Long-term Debt	-	-	800	1,110	1,000	900	794	861	1,322	1,283	2,121
Deferred Income Taxes	-	-	13	48	104	170	338	502	482	477	477
Other Liabilities and Deferred Credits	-	-	33	34	43	64	53	58	86	107	165
Total Liabilities	-	-	1,327	1,531	1,337	1,353	1,634	1,878	2,260	2,295	3,147
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	4	4	4	4	4	4	4	4
Contributed Surplus (Paid-in Capital)	-	-	-	1,629	1,713	1,782	1,860	1,933	1,975	2,015	2,341
Preferred Stock	-	-	979	-	-	-	-	-	-	-	-
Retained Earnings	-	-	(616)	(616)	(683)	(774)	(495)	(565)	(850)	(1,073)	(1,167)
Other / Comprehensive Income (Loss)	-	-	1	4	(5)	(19)	(30)	(47)	(48)	(48)	(237)
Total Shareholders' Equity	-	-	364	1,021	1,029	992	1,339	1,326	1,081	897	941
Total Liabilities and Shareholders' Equity	-	-	1,692	2,552	2,366	2,346	2,973	3,203	3,341	3,193	4,088

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	-	$106.86	$109.01	$104.38	$93.37	$48.73	$43.31	$51.77	$66.84	$56.26	$61.66
Production Costs	-	-	-	$13.19	$15.42	$11.85	$10.92	$11.49	$16.66	$11.36	$16.65	$14.79	$13.48
Exploration	-	-	-	$20.33	$15.85	$28.20	$10.20	$17.04	$28.23	$19.35	$22.33	$22.61	$19.33
DD&A	-	-	-	$24.74	$31.57	$28.60	$21.61	$17.01	$19.59	$22.85	$24.43	$22.79	$21.52
G&A/Other	-	-	-	$17.56	$25.95	$19.40	$14.75	$14.92	$12.23	$6.12	$7.40	$8.04	$10.52
Pre-tax Results of Operations	-	-	-	$31.04	$20.22	$16.32	$35.88	-$11.74	-$33.39	-$7.90	-$3.97	-$11.97	-$3.19
Income Taxes	-	-	-	$18.21	$10.11	$8.16	$18.55	-$5.87	-$16.70	-$3.95	-$1.98	-$5.99	-$1.59
Results of Operations	-	-	-	$12.82	$10.11	$8.16	$17.34	-$5.87	-$16.70	-$3.95	-$1.98	-$5.99	-$1.59

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	5.5	2.7	2.7	2.7	2.7	2.7	2.7	8.2	4.6	3.8
Liquids Production (b/d)	-	-	-	16,438	16,438	21,918	24,658	24,658	19,178	30,137	35,616	28,311	26,849
Total Production (boe/d)	-	-	-	17,352	16,895	22,374	25,114	25,114	19,635	30,594	36,986	29,072	27,489
% Gas Production	-	-	-	5%	3%	2%	2%	2%	2%	1%	4%	3%	2%
% Oil Production	-	-	-	95%	97%	98%	98%	98%	98%	99%	96%	97%	98%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	24.0	9.0	11.0	14.0	14.0	15.0	49.0	85.0	49.7	35.4
Closing Oil Reserves (mmbbls)	-	-	-	47.0	42.0	45.0	73.0	74.0	74.0	82.0	127.0	94.3	86.0
Closing Total Proven Reserves (mmboe)	-	-	-	51.0	43.5	46.8	75.3	76.3	76.5	90.2	141.2	102.6	91.9
% Gas Reserves	-	-	-	8%	3%	4%	3%	3%	3%	9%	10%	8%	6%
% Oil Reserves	-	-	-	92%	97%	96%	97%	97%	97%	91%	90%	92%	94%
Proven Reserve Life Index				8.1	7.1	5.7	8.2	8.3	10.7	8.1	10.5	9.7	9.2
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	4.0	-14.0	3.0	4.0	1.0	2.0	35.0	39.0	76.0	81.0
Oil Additions (mmbbls)	-	-	-	1.0	1.0	11.0	37.0	10.0	7.0	19.0	58.0	84.0	131.0
Total Additions (mmboe)	-	-	-	1.7	-1.3	11.5	37.7	10.2	7.3	24.8	64.5	96.7	144.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	0.0	0.0	0.0	27.0	0.0	0.0	1.0	0.0	1.0	28.0
Net Acquisitions	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.7	53.7	53.7
Revisions of Estimates	-	-	-	1.7	-1.3	11.5	10.7	10.2	7.3	23.8	10.8	42.0	62.8
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	-	0.0%	0.0%	0.0%	71.7%	0.0%	0.0%	4.0%	0.0%	1.0%	19.4%
Net Acquisitions	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	83.2%	55.5%	37.1%
Revisions of Estimates	-	-	-	100.0%	100.0%	100.0%	28.3%	100.0%	100.0%	96.0%	16.8%	43.4%	43.5%
Additions as % of Production:													
Gas	-	-	-	200.0%	-1400.0%	300.0%	400.0%	100.0%	200.0%	3500.0%	1300.0%	1520.0%	1157.1%
Oil	-	-	-	16.7%	16.7%	137.5%	411.1%	111.1%	100.0%	172.7%	446.2%	271.0%	267.3%
Total	-	-	-	26.3%	-21.6%	140.8%	410.9%	110.9%	102.3%	222.4%	477.8%	303.7%	288.0%
Additions as % of Reserves:													
Gas	-	-	-	16.7%	-155.6%	27.3%	28.6%	7.1%	13.3%	71.4%	45.9%	153.0%	228.8%
Oil	-	-	-	2.1%	2.4%	24.4%	50.7%	13.5%	9.5%	23.2%	45.7%	89.0%	152.3%
Total	-	-	-	3.3%	-3.1%	24.6%	50.0%	13.3%	9.6%	27.5%	45.7%	94.2%	157.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	-	$0	$0	$367	$230	$380	$437	$71	$272	$780	$1,390
Exploration & Development	-	-	-	$597	$335	$61	$317	$462	$265	$1	$136	$403	$1,182
Net Acquisitions	-	-	-	$0	$0	$14	$0	$6	$17	$241	$1,343	$1,602	$1,608
Total Expenditures	-	-	-	$597	$335	$442	$547	$848	$720	$313	$1,752	$2,785	$4,180
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	-	0.0%	0.0%	83.1%	42.1%	44.8%	60.7%	22.6%	15.5%	28.0%	33.3%
Exploration & Development	-	-	-	100.0%	100.0%	13.8%	57.9%	54.5%	36.9%	0.4%	7.8%	14.5%	28.3%
Net Acquisitions	-	-	-	0.0%	0.0%	3.1%	0.0%	0.7%	2.4%	77.0%	76.7%	57.5%	38.5%
Cashflow (US$million)	-	-	-	$402	$326	$396	$181	$374	$138	$245	$244	$628	$1,183
Cashflow (US$/boe)	-	-	-	$63.52	$52.94	$48.50	$19.75	$40.84	$19.29	$21.95	$18.10	$19.72	$23.59
Recycle Ratio	-	-	-	0.2x	nm	1.3x	1.4x	0.5x	0.2x	1.7x	0.7x	0.7x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	$358.38	nm	$37.21	$14.52	$82.79	$95.80	$2.91	$37.71	$27.52	$28.31
Net Acquisition Costs	-	-	-	na	na	na	na	na	na	na	$25.03	na	na
All Sources (incl. revisions)	-	-	-	$358.38	nm	$38.41	$14.52	$83.41	$98.16	$12.62	$27.16	$28.81	$28.93
Exploration & Development (excl. revisions)	-	-	-	nm	nm	nm	$20.26	nm	nm	$72.15	nm	$1,183.20	$91.85
Net Acquisition Costs	-	-	-	na	na	na	na	na	na	na	$25.03	na	na
All Sources (excl. revisions)	-	-	-	nm	nm	nm	$20.26	nm	nm	$313.29	$32.64	$50.94	$51.18
Geographically Segmented Costs													
North America	-	-	-	na	na	na	na	na	na	na	na	na	na
South America	-	-	-	$358.38	nm	$38.41	$14.52	$83.41	$98.16	$12.62	$27.16	$28.81	$28.93

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Kosmos Energy (KOS - NYMEX, KOS - FF, KOS - BB)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	13.19	15.42	11.85	10.92	11.49	16.66	11.36	16.65	14.79	13.48
Exploration Expense	-	-	-	20.33	15.85	28.20	10.20	17.04	28.23	19.35	22.33	22.61	19.33
G&A/Other	-	-	-	17.56	25.95	19.40	14.75	14.92	12.23	6.12	7.40	8.04	10.52
F&D Costs (1-Year)	-	-	-	24.87	24.43	38.41	14.52	83.41	98.16	12.62	27.16	28.81	14.89
Return on Capital	-	-	-	12.50	10.78	13.93	7.41	43.44	66.03	6.36	17.88	17.60	8.76
Income Taxes	-	-	-	17.75	10.78	13.93	7.93	43.44	66.03	6.36	17.88	17.60	8.76
Breakeven Oil Price	**-**	**-**	**-**	**106.20**	**103.21**	**125.71**	**65.74**	**213.75**	**287.33**	**62.15**	**109.29**	**109.45**	**75.73**
Quality Differential	-	-	-	(0.48)	0.13	2.59	4.67	4.14	1.12	2.47	2.70	2.10	2.61
Required Brent Price	**-**	**-**	**-**	**105.73**	**103.34**	**128.30**	**70.41**	**217.89**	**288.46**	**64.62**	**111.99**	**111.54**	**78.34**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	13.57	15.64	11.96	11.02	11.54	16.75	11.40	17.11	15.00	13.64
Exploration Expense	-	-	-	20.91	16.07	28.45	10.30	17.11	28.38	19.41	22.95	22.93	19.55
G&A/Other	-	-	-	18.06	26.31	19.57	14.89	14.99	12.29	6.14	7.60	8.15	10.64
F&D Costs (1-Year)	-	-	-	26.06	25.07	39.14	14.65	83.72	99.21	13.34	29.30	30.76	30.29
Return on Capital	-	-	-	12.91	11.01	14.09	7.43	43.48	66.58	6.60	18.31	18.36	17.48
Income Taxes	-	-	-	18.34	11.01	14.09	7.94	43.48	66.58	6.60	18.31	18.36	17.48
Breakeven Oil Price	**-**	**-**	**-**	**109.85**	**105.12**	**127.30**	**66.24**	**214.32**	**289.79**	**63.50**	**113.57**	**113.57**	**109.08**
Quality Differential	-	-	-	(0.49)	0.13	2.61	4.72	4.16	1.13	2.48	2.78	2.13	2.63
Required Brent Price	**-**	**-**	**-**	**109.36**	**105.25**	**129.91**	**70.95**	**218.48**	**290.92**	**65.97**	**116.35**	**115.69**	**111.71**

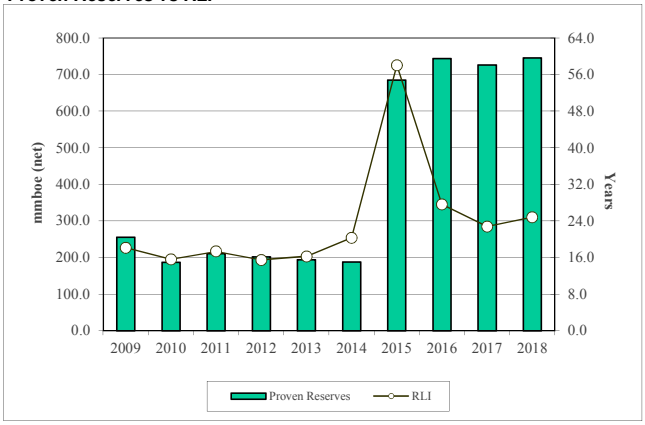
Source: BMO Capital Markets, Company Reports

Lundin Petroleum AB (LUPE - OMX, TSX) US$, net

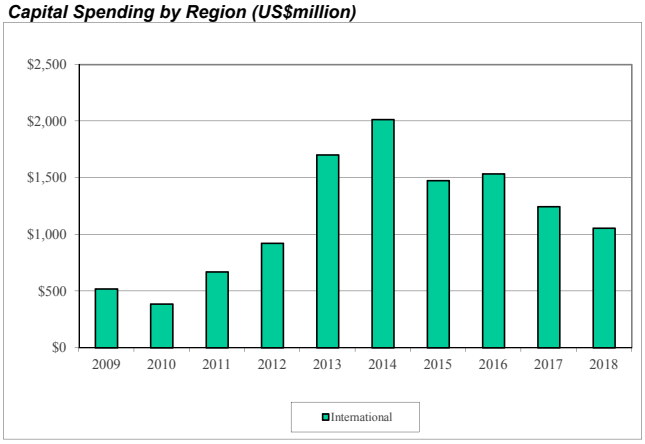
- The company reported results from operations of $35.02/boe compared to $11.63/boe in 2017.
- The company reported ROCE of 9.1% in 2018.
- Lundin's F&D costs dropped to $21.49/boe from $36.08/boe last year. On a realized oil:gas basis, F&D costs came in at $21.99/boe compared to $28.77/boe the year before.
- Lundin's 2018 Brent breakeven oil price came in at $80.28/boe on a realized oil:gas price ratio basis compared to $144.53/boe last year (impacted by high F&D costs).

Notes: Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

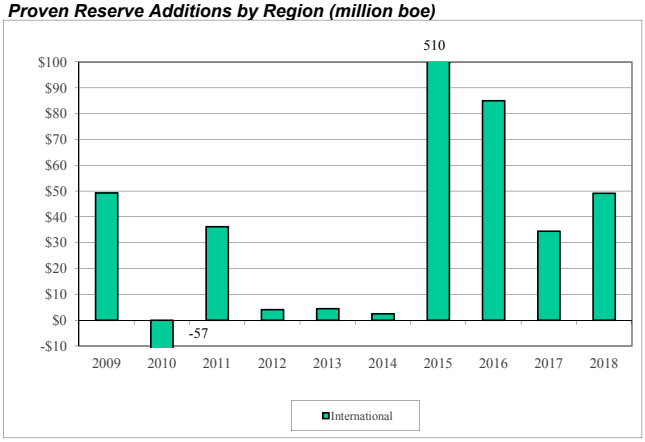
Proven Reserves vs RLI



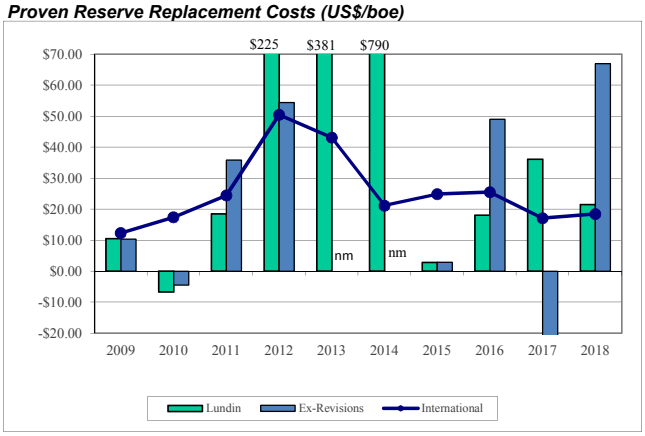
Capital Spending by Region (US$million)



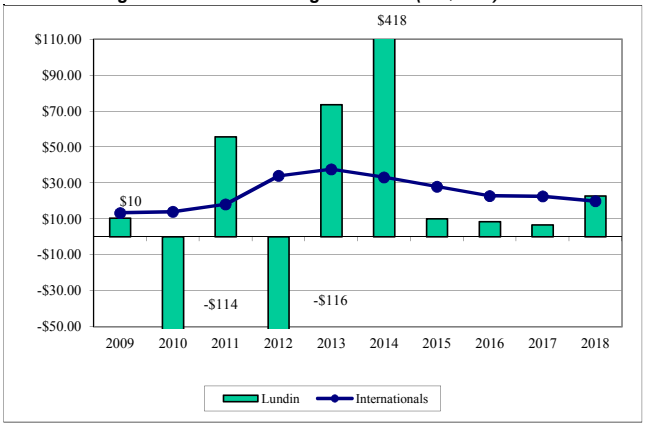
Proven Reserve Additions by Region (million boe)



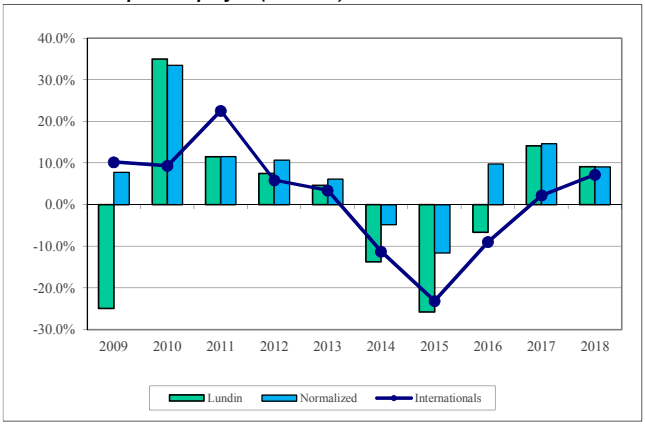
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

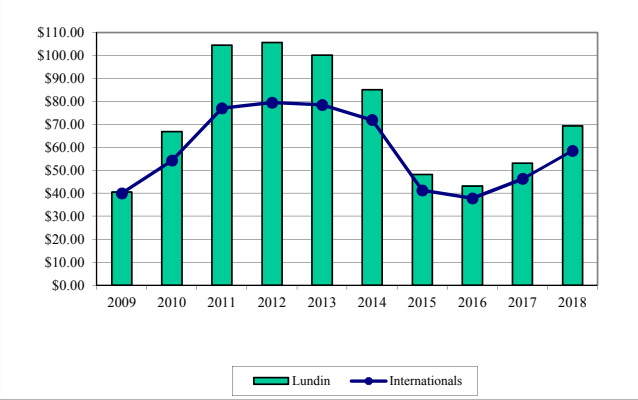
See pages F1 to F4 for analyst coverage.

Lundin Petroleum AB (LUPE - OMX, TSX)

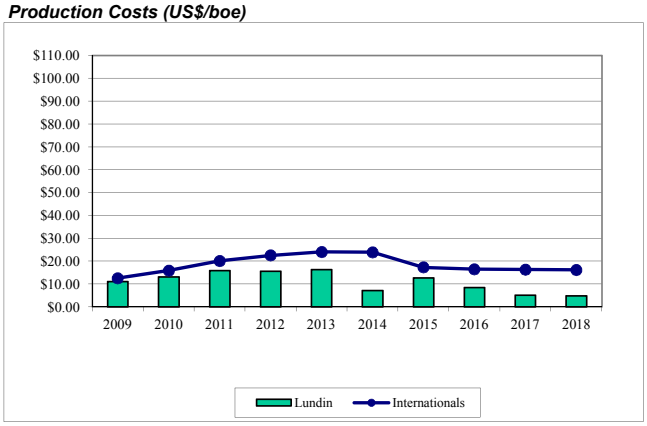
US$, net

International

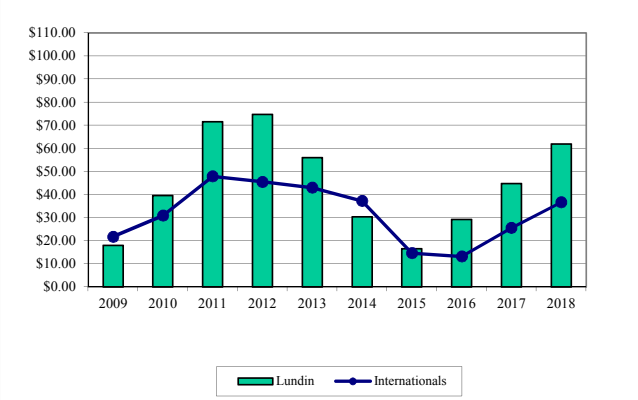
Upstream Net Revenue (US$/boe)



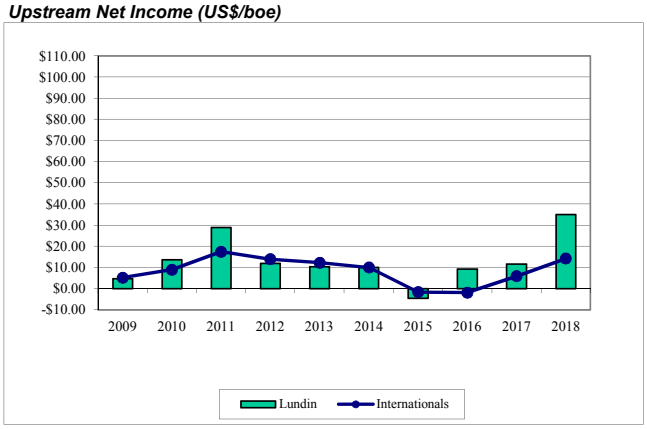
Production Costs (US$/boe)



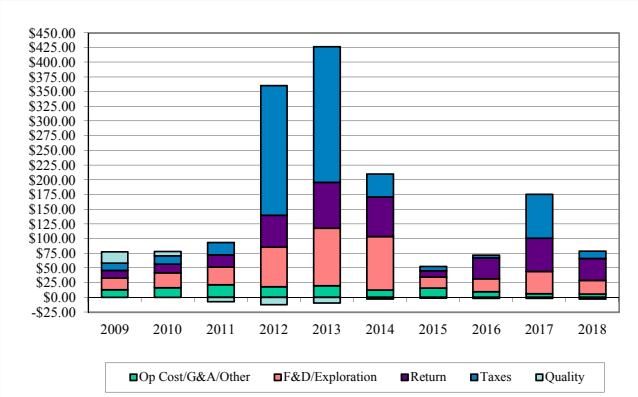
Upstream Operating Earnings (US$/boe)



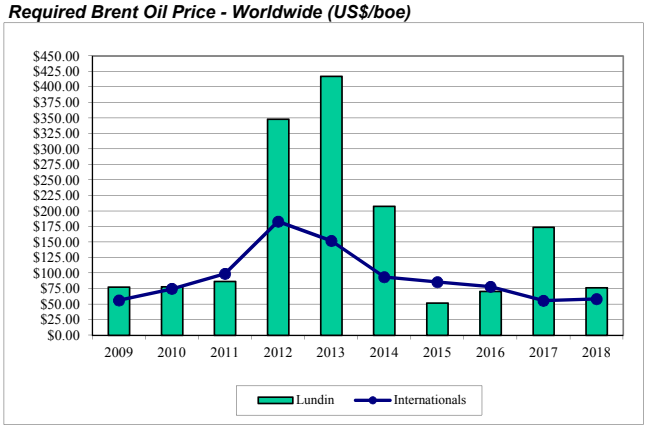
Upstream Net Income (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Lundin Petroleum AB (LUPE - OMX, TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	567	785	1,258	1,376	1,196	785	569	1,160	1,694	2,074
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	4	13	12	-	-	-	-	-	-	10
Total Revenue and Other Income	-	572	799	1,270	1,376	1,196	785	569	1,160	1,694	2,084
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	155	157	193	203	196	67	150	228	164	145
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	135	128	140	168	288	386	184	116	73	53
General and Administrative	-	29	42	67	32	44	52	40	32	32	25
Depreciation, Depletion and Amortization	-	118	145	165	191	174	132	284	503	567	458
Interest, net	-	(30)	13	(25)	21	83	64	87	144	157	345
Other	-	664	(67)	-	238	123	770	1,261	696	(181)	(191)
Earnings Before Income Tax	-	(500)	381	730	522	288	(685)	(1,436)	(559)	882	1,248
Current Income Taxes	-	46	252	574	341	25	(420)	(281)	(81)	(0)	90
Future Income Taxes	-	-	-	-	77	191	167	(290)	21	502	935
Total Income Taxes	-	46	252	574	418	215	(253)	(570)	(59)	501	1,026
Minority Interest	-	126	13	-	4	5	5	5	143	4	-
Earnings From Continuing Operations	-	(420)	143	155	108	78	(427)	(862)	(357)	385	222
Discontinued Operations/Extraordinary Items	-	9	369	-	-	-	-	-	-	47	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	(411)	512	155	108	78	(427)	(862)	(357)	431	222
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	(411)	512	155	108	78	(427)	(862)	(357)	431	222

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	(420)	143	155	108	78	(427)	(862)	(357)	385	222
Charges and Credits Not Impacting Cash	-	253	273	305	360	462	518	468	619	1,142	1,447
Other	-	723	(148)	915	262	215	442	901	873	(186)	56
Cash Flow From Operations	-	556	267	1,376	730	754	532	507	1,135	1,341	1,724
Change in Working Capital / Other	-	51	(66)	(479)	94	165	109	(194)	(221)	(88)	(9)
Net Cash From Operating Activities	-	607	202	897	823	919	642	314	914	1,253	1,716
Total Capital Expenditures	-	(482)	(349)	(670)	(919)	(1,702)	(1,958)	(1,443)	(1,056)	(1,178)	(1,060)
Acquisitions, net	-	-	(23)	54	-	-	-	-	24	94	-
Other	-	(1)	(94)	(3)	(42)	(42)	(104)	(51)	16	(11)	5
Net Cash From Investing Activities	-	(483)	(466)	(619)	(961)	(1,744)	(2,062)	(1,494)	(1,016)	(1,096)	(1,055)
Net Change in Debt	-	5	(125)	(252)	226	845	1,419	1,171	289	(189)	(490)
Net Change in Common Stock	-	-	(11)	-	-	(20)	(10)	-	64	(28)	(14)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	(153)
Other	-	(0)	15	(0)	(58)	(0)	(11)	(3)	(114)	32	(17)
Net Cash From Financing Activities	-	5	(121)	(252)	168	825	1,398	1,168	239	(185)	(675)
Effect of Exchange Rate on Cash	-	9	1	(0)	(2)	(0)	20	6	(3)	(3)	7
Net Increase/(Decrease) in Cash	-	137	(384)	25	28	0	(2)	(7)	134	(31)	(7)
Cash and Equivalents, Beginning of Year	-	57	77	49	74	97	82	81	72	56	71
Cash and Equivalents, End of Year	-	194	(307)	74	102	97	81	74	205	25	64

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Lundin Petroleum AB (LUPE - OMX, TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	257	275	285	298	336	378	659	542	492	417	357
Net Property, Plant and Equipment	2,536	2,540	1,999	2,329	2,914	2,937	4,383	4,220	4,543	4,950	5,355
Other Assets	260	135	145	63	44	1,059	50	24	168	161	131
Total Assets	3,053	2,951	2,429	2,690	3,294	4,375	5,092	4,785	5,202	5,529	5,843
Total Current Liabilities	245	257	185	403	432	492	648	422	353	274	307
Long-term Debt	524	546	459	207	384	1,239	2,654	3,835	4,048	3,880	3,262
Deferred Income Taxes	636	744	651	803	942	1,068	973	543	669	1,302	2,103
Other Liabilities and Deferred Credits	99	167	137	206	285	309	351	460	484	424	554
Total Liabilities	1,504	1,713	1,431	1,620	2,044	3,108	4,626	5,259	5,554	5,880	6,227
Minority Interests	170	96	77	69	68	60	34	24	(114)	-	-
Common Shares	0	0	0	0	1	1	1	1	1	1	0
Contributed Surplus (Paid-in Capital)	854	909	484	484	475	455	445	445	979	528	340
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	668	301	503	503	663	771	849	427	(787)	(434)	(206)
Other / Comprehensive Income (Loss)	(142)	(69)	(66)	14	44	(19)	(863)	(1,371)	(431)	(446)	(518)
Total Shareholders' Equity	1,379	1,142	920	1,001	1,182	1,207	432	(498)	(239)	(351)	(384)
Total Liabilities and Shareholders' Equity	3,053	2,951	2,429	2,690	3,294	4,375	5,092	4,785	5,202	5,529	5,843

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	$40.59	$66.88	$104.48	$105.76	$100.14	$85.19	$48.25	$43.15	$53.20	$69.38	$55.63	$57.32
Production Costs	-	$11.02	$13.15	$15.89	$15.62	$16.40	$7.22	$12.74	$8.46	$5.16	$4.84	$6.05	$6.87
Exploration	-	$9.57	$10.68	$11.52	$12.94	$24.10	$41.92	$15.60	$4.32	$2.30	$1.77	$2.73	$7.41
DD&A	-	$8.39	$12.17	$13.59	$14.71	$14.59	$14.28	$24.09	$18.69	$17.82	$15.25	$17.21	$17.71
Other	-	$2.05	$3.52	$5.52	$2.44	$3.65	$5.66	$3.35	$1.19	$1.00	$0.82	$0.99	$1.64
Pre-tax Earnings	-	$9.57	$27.36	$57.96	$60.03	$41.40	$16.11	-$7.53	$10.49	$26.93	$46.69	$28.64	$23.70
Income Taxes	-	$4.78	$13.68	$28.98	$48.10	$30.92	$5.95	-$2.99	$1.11	$15.30	$11.67	$8.82	$8.01
Net Earnings	-	$4.78	$13.68	$28.98	$11.94	$10.48	$10.16	-$4.54	$9.37	$11.63	$35.02	$19.81	$15.68

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Lundin Petroleum AB (LUPE - OMX, TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	18.9	24.0	31.4	40.7	41.3	34.7	32.8	48.9	43.2	43.2	45.1	40.5
Liquids Production (b/d)	-	35,333	28,626	27,973	28,762	25,738	19,399	26,776	65,301	79,781	74,863	73,315	53,224
Total Production (boe/d)	-	38,490	32,624	33,200	35,544	32,628	25,182	32,240	73,452	86,976	82,058	80,829	59,982
% Gas Production	-	8%	12%	16%	19%	21%	23%	17%	11%	8%	9%	9%	11%
% Oil Production	-	92%	88%	84%	81%	79%	77%	83%	89%	92%	91%	91%	89%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	208.7	177.4	166.2	108.4	91.4	88.6	169.1	189.2	183.6	177.5	183.4	161.6
Closing Oil Reserves (mmbbls)	-	221.1	157.1	183.0	183.5	178.8	172.8	657.3	712.1	695.7	715.8	707.9	590.7
Closing Total Proven Reserves (mmboe)	-	255.9	186.7	210.7	201.5	194.1	187.5	685.4	743.6	726.3	745.4	738.4	617.6
% Gas Reserves	-	14%	16%	13%	9%	8%	8%	4%	4%	4%	4%	4%	4%
% Oil Reserves	-	86%	84%	87%	91%	92%	92%	96%	96%	96%	96%	96%	96%
Proven Reserve Life Index	-	18.2	15.6	17.3	15.5	16.3	20.3	58.1	27.7	22.8	24.8	25.1	30.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	26.2	-22.5	0.3	-42.9	-1.9	9.9	92.5	38.0	21.3	9.7	69.0	171.4
Oil Additions (mmbbls)	-	45.0	-53.5	36.2	11.2	4.8	0.9	494.3	78.7	30.9	47.5	157.1	652.3
Total Additions (mmboe)	-	49.3	-57.3	36.2	4.1	4.5	2.6	509.7	85.0	34.5	49.1	168.6	680.9
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	56.0	0.0	14.6	0.0	0.0	3.9	513.2	1.9	2.3	15.8	19.9	537.0
Net Acquisitions	-	-6.0	-85.5	4.0	16.9	0.0	-5.6	-0.8	29.5	-11.3	0.0	18.2	11.8
Revisions of Estimates	-	-0.7	28.3	17.5	-12.8	4.5	4.2	-2.7	53.7	43.5	33.4	130.5	132.1
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	113.6%	0.0%	40.4%	0.0%	0.0%	153.6%	100.7%	2.2%	6.6%	32.1%	11.8%	78.9%
Net Acquisitions	-	-12.1%	149.3%	11.1%	414.4%	0.0%	-219.6%	-0.2%	34.6%	-32.6%	0.0%	10.8%	1.7%
Revisions of Estimates	-	-1.5%	-49.3%	48.4%	-314.4%	100.0%	166.0%	-0.5%	63.2%	126.0%	67.9%	77.4%	19.4%
Additions as % of Production:													
Gas	-	379.6%	-257.3%	2.4%	-288.9%	-12.3%	78.2%	772.9%	212.9%	135.2%	61.6%	139.8%	231.6%
Oil	-	348.6%	-512.3%	354.2%	107.1%	50.9%	12.7%	5057.7%	330.2%	106.3%	173.8%	195.7%	671.6%
Total	-	351.1%	-481.0%	298.8%	31.5%	37.5%	27.7%	4331.5%	317.2%	108.7%	164.0%	190.5%	622.0%
Additions as % of Reserves:													
Gas	-	12.6%	-12.7%	0.2%	-39.6%	-2.0%	11.2%	54.7%	20.1%	11.6%	5.5%	37.6%	106.1%
Oil	-	20.3%	-34.1%	19.8%	6.1%	2.7%	0.5%	75.2%	11.1%	4.4%	6.6%	22.2%	110.4%
Total	-	19.3%	-30.7%	17.2%	2.0%	2.3%	1.4%	74.4%	11.4%	4.7%	6.6%	22.8%	110.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	-	$519	$385	$670	$922	$1,702	$2,014	$1,474	$1,536	$1,245	$1,055	$3,836	$7,324
Net Acquisitions	-	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	-	$519	$385	$670	$922	$1,702	$2,014	$1,474	$1,536	$1,245	$1,055	$3,836	$7,324
Expenditures as % of Total (US$million):													
Land & Seismic	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	-	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-	$439	$623	$1,376	$726	$750	$532	$505	$999	$1,387	$1,727	$4,114	$5,151
Cashflow (US$/boe)	-	$31.17	$52.16	$113.21	$55.77	$62.77	$57.75	$42.81	$37.16	$43.58	$57.51	$46.48	$47.06
Recycle Ratio	-	3.0x	-7.8x	6.1x	0.2x	0.2x	0.1x	14.8x	2.1x	1.2x	2.7x	2.0x	4.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	$9.38	$13.64	$20.83	-$71.74	$380.93	$247.12	$2.89	$27.63	$27.20	$21.49	$25.49	$10.95
Net Acquisition Costs	-	$0.00	$0.00	$0.00	$0.00	na	$0.00	$0.00	$0.00	$0.00	na	$0.00	$0.00
All Sources (incl. revisions)	-	$10.51	-$6.73	$18.50	$225.54	$380.93	$789.80	$2.89	$18.06	$36.08	$21.49	$22.74	$10.76
Exploration & Development (excl. revisions)	-	$9.25	na	$45.77	na	na	$514.21	$2.87	$822.64	$545.08	$66.93	$192.58	$13.64
Net Acquisition Costs	-	$0.00	$0.00	$0.00	$0.00	na	$0.00	$0.00	$0.00	$0.00	na	$0.00	$0.00
All Sources (excl. revisions)	-	$10.36	-$4.50	$35.88	$54.43	nm	nm	$2.88	$49.03	-$138.71	$66.93	$100.64	$13.35
Geographically Segmented Costs													
International	-	$10.51	-$6.73	$18.50	$225.54	$380.93	$789.80	$2.89	$18.06	$36.08	$21.49	$1.76	$2.42

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Lundin Petroleum AB (LUPE - OMX, TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	11.02	13.15	15.89	15.62	16.40	7.22	12.74	8.46	5.16	4.84	6.05	6.87
Exploration Expense	-	9.57	10.68	11.52	12.94	24.10	41.92	15.60	4.32	2.30	1.77	2.73	7.41
G&A/Other	-	2.05	3.52	5.52	2.44	3.65	5.66	3.35	1.19	1.00	0.82	0.99	1.64
F&D Costs (1-Year)	-	10.51	14.51	18.50	54.43	73.58	48.84	2.89	18.06	36.08	21.49	25.21	25.47
Return on Capital	-	12.64	14.63	21.15	54.65	78.19	67.20	10.87	35.49	56.47	37.33	44.32	55.70
Income Taxes	-	12.64	14.63	21.15	220.16	230.72	39.39	7.15	4.21	74.30	12.44	19.74	28.46
Breakeven Oil Price	**-**	**58.44**	**71.12**	**93.74**	**360.24**	**426.64**	**210.23**	**52.60**	**71.73**	**175.30**	**78.69**	**99.04**	**125.54**
Quality Differential	-	18.95	6.84	(7.19)	(12.14)	(9.64)	(2.76)	(1.09)	(1.33)	(1.44)	(2.52)	(1.76)	(1.83)
Required Brent Price	**-**	**77.39**	**77.97**	**86.55**	**348.11**	**417.00**	**207.47**	**51.51**	**70.40**	**173.86**	**76.17**	**97.28**	**123.72**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	11.70	14.39	17.86	18.03	19.24	8.60	14.45	9.18	5.48	5.16	6.47	7.46
Exploration Expense	-	10.15	11.68	12.95	14.94	28.28	49.95	17.70	4.68	2.44	1.89	2.92	8.04
G&A/Other	-	2.17	3.85	6.20	2.82	4.28	6.75	3.80	1.29	1.06	0.87	1.06	1.78
F&D Costs (1-Year)	-	9.93	14.20	18.52	54.76	65.94	67.71	2.95	19.05	28.77	21.99	22.32	28.09
Return on Capital	-	11.41	13.93	21.66	59.64	78.77	106.57	11.81	39.51	46.78	39.79	41.08	66.41
Income Taxes	-	11.41	13.93	21.66	240.29	232.43	62.48	7.77	4.69	61.55	13.26	18.30	33.93
Breakeven Oil Price	**-**	**56.76**	**71.98**	**98.85**	**390.49**	**428.95**	**302.06**	**58.49**	**78.40**	**146.06**	**82.96**	**92.16**	**145.72**
Quality Differential	-	20.10	7.49	(8.08)	(14.01)	(11.31)	(3.29)	(1.24)	(1.44)	(1.53)	(2.69)	(1.89)	(2.04)
Required Brent Price	**-**	**76.87**	**79.47**	**90.77**	**376.48**	**417.64**	**298.77**	**57.25**	**76.95**	**144.53**	**80.28**	**90.27**	**143.68**

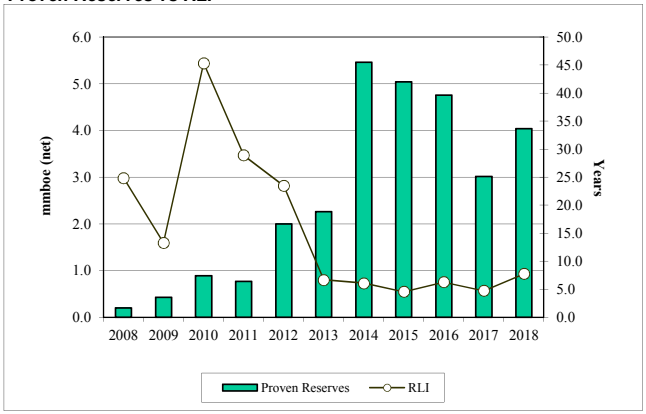
Source: BMO Capital Markets, Company Reports

Madalena Energy (MVN - TSX)

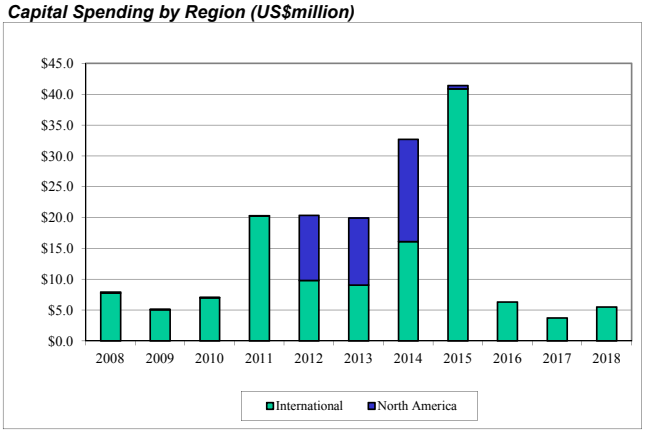
US$, net

- Madalena's loss from of operations narrowed to $1.07/boe in 2018 versus $17.71/boe in 2017.
- The company reported a loss on capital of 2.8% in 2018 compared to a loss of 58.5% last year (unadjusted).
- One-year F&D costs were $3.58/boe in 2018. On a realized oil:gas price ratio basis, F&D costs came in at $3.67/boe. The adjusted PD costs were $14.86/boe in 2018.
- Madalena's 2018 operations implied a required Brent breakeven oil price of $66.60/boe on a realized oil:gas price ratio basis, while its PD cost assessment implied a Brent breakeven oil price of $92.74/boe.

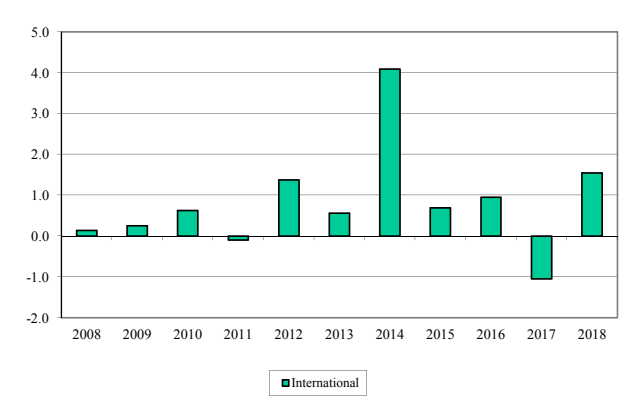
Proven Reserves vs RLI



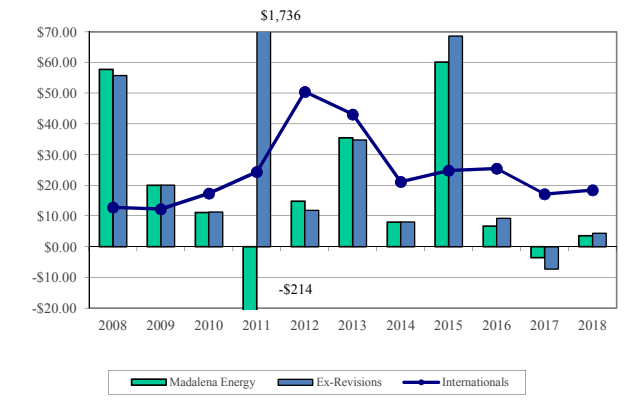
Capital Spending by Region (US$million)



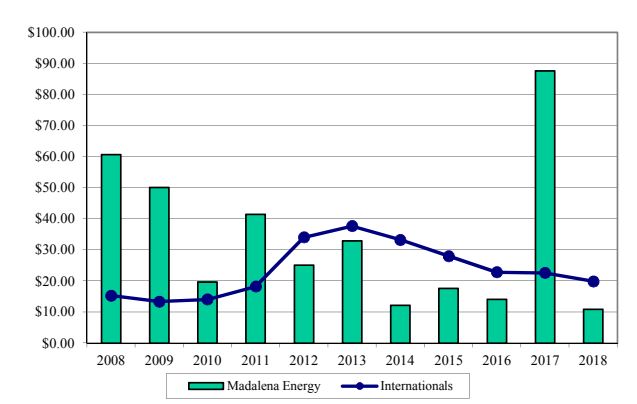
Proven Reserve Additions by Region (million boe)



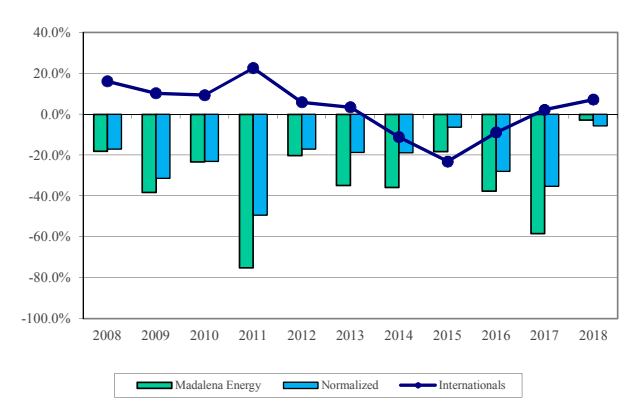
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

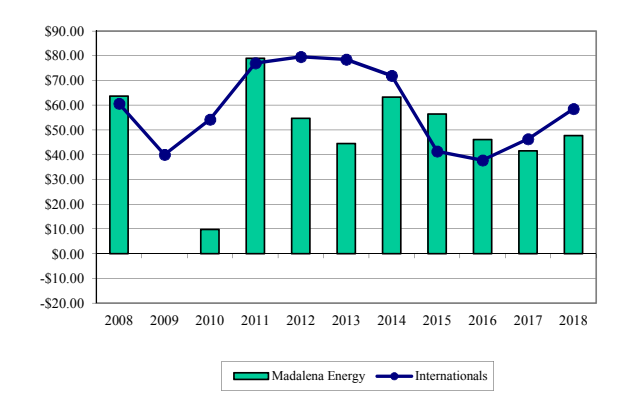
See pages F1 to F4 for analyst coverage.

Madalena Energy (MVN - TSX)

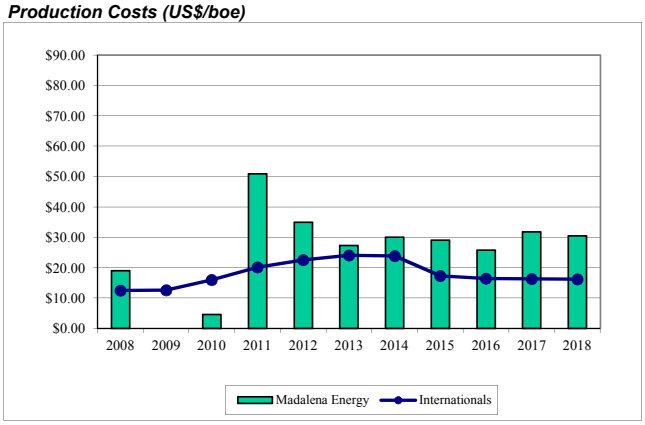
US$, net

International

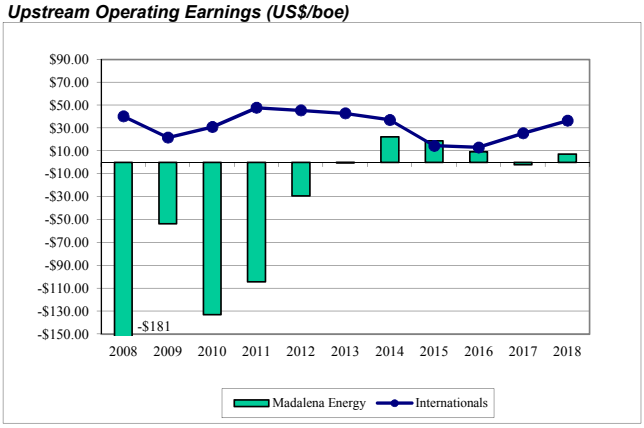
Upstream Net Revenue (US$/boe)



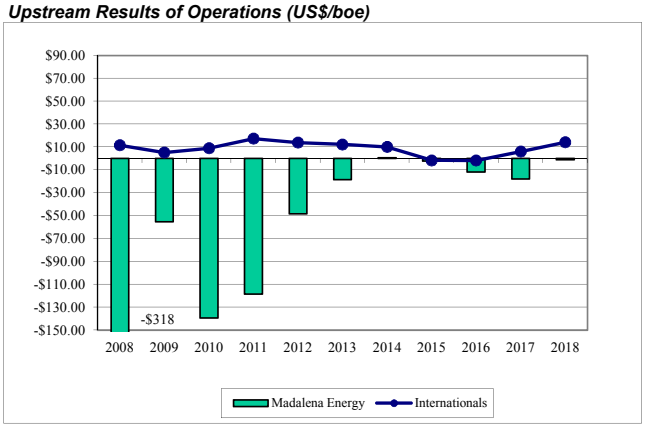
Production Costs (US$/boe)



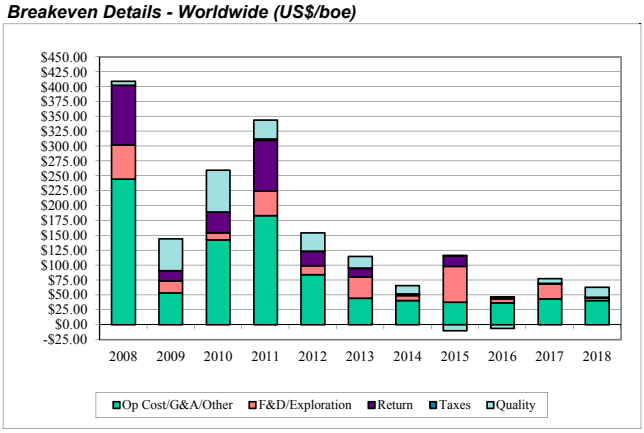
Upstream Operating Earnings (US$/boe)



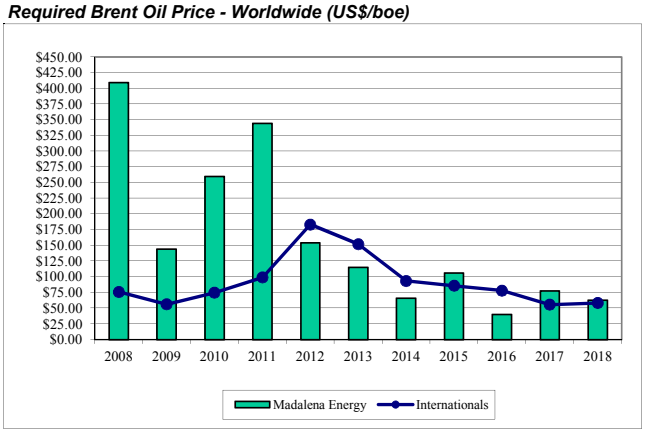
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Madalena Energy (MVN - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1	-	0	2	5	15	57	70	42	32	30
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	0
Total Revenue and Other Income	1	-	0	2	5	15	57	70	42	32	31
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	0	-	0	1	3	9	27	36	24	24	20
Marketing Expenses	-	-	-	-	1	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	2	2	3	4	4	6	10	11	10	9	6
Depreciation, Depletion and Amortization	1	0	0	0	2	6	20	26	20	15	6
Interest, net	(0)	(0)	(0)	(0)	0	(0)	0	(1)	3	0	3
Other	(1)	3	2	13	4	17	31	1	17	24	0
Earnings Before Income Tax	(2)	(4)	(4)	(16)	(9)	(23)	(31)	(3)	(31)	(41)	(4)
Current Income Taxes	-	-	-	0	0	-	3	5	2	(0)	-
Future Income Taxes	-	-	-	-	-	(1)	(1)	6	(2)	(7)	(1)
Total Income Taxes	-	-	-	0	0	(1)	2	11	1	(7)	(1)
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(2)	(4)	(4)	(16)	(9)	(23)	(33)	(14)	(32)	(34)	(3)
Discontinued Operations/Extraordinary Items	-	(1)	0	-	-	-	-	-	(4)	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(2)	(6)	(4)	(16)	(9)	(23)	(33)	(14)	(37)	(34)	(3)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(2)	(6)	(4)	(16)	(9)	(23)	(33)	(14)	(37)	(34)	(3)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(2)	(4)	(4)	(16)	(9)	(23)	(33)	(14)	(32)	(34)	(3)
Charges and Credits Not Impacting Cash	1	2	0	12	4	25	47	46	37	30	4
Other	(1)	0	2	2	2	1	2	(4)	1	1	3
Cash Flow From Operations	(1)	(2)	(3)	(3)	(3)	4	16	28	5	(3)	4
Change in Working Capital / Other	0	0	3	0	(0)	(2)	6	(6)	7	(2)	(0)
Net Cash From Operating Activities	(1)	(2)	1	(3)	(3)	2	22	22	13	(5)	4
Total Capital Expenditures	(8)	(5)	(7)	(20)	(23)	(42)	(37)	(41)	(6)	(2)	(6)
Acquisitions, net	-	-	-	-	(16)	1	(43)	-	0	9	-
Other	0	1	4	(2)	4	(1)	(13)	3	(5)	(3)	1
Net Cash From Investing Activities	(7)	(4)	(4)	(22)	(35)	(42)	(93)	(39)	(11)	4	(4)
Net Change in Debt	-	-	-	-	-	-	-	9	(2)	(2)	-
Net Change in Common Stock	2	8	33	2	64	18	68	0	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	0	(0)	(0)	(4)	-	0	-	1	-	-
Net Cash From Financing Activities	2	8	33	2	59	18	68	9	(2)	(2)	-
Effect of Exchange Rate on Cash	1	(0)	(0)	(1)	(0)	(0)	1	(0)	0	0	-
Net Increase/(Decrease) in Cash	(5)	2	30	(25)	22	(23)	(1)	(8)	0	(3)	(0)
Cash and Equivalents, Beginning of Year	12	7	10	41	16	37	13	12	4	4	1
Cash and Equivalents, End of Year	7	9	40	17	38	14	12	4	4	1	1

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Madalena Energy (MVN - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	8	9	41	18	41	19	34	30	20	13	8
Net Property, Plant and Equipment	15	15	20	25	66	74	144	134	103	60	53
Other Assets	-	-	-	-	-	-	-	-	-	0	0
Total Assets	23	24	61	43	108	94	178	164	123	73	62
Total Current Liabilities	1	1	5	3	11	12	23	30	24	14	9
Long-term Debt	-	-	-	-	-	-	-	2	1	1	0
Deferred Income Taxes	-	-	-	-	-	-	5	10	8	1	0
Other Liabilities and Deferred Credits	0	0	1	0	4	5	27	22	19	20	17
Total Liabilities	1	2	6	3	15	17	55	64	53	36	27
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	30	34	73	79	142	155	226	239	239	239	239
Contributed Surplus (Paid-in Capital)	6	6	8	10	12	12	13	15	16	16	18
Preferred Stock	-	2	-	-	-	-	-	-	-	-	-
Retained Earnings	(15)	(19)	(25)	(44)	(53)	(74)	(102)	(121)	(158)	(191)	(195)
Other / Comprehensive Income (Loss)	-	-	-	(5)	(8)	(17)	(15)	(32)	(27)	(27)	(27)
Total Shareholders' Equity	21	23	56	39	92	77	123	100	70	37	35
Total Liabilities and Shareholders' Equity	23	24	61	43	108	94	178	164	123	73	62

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$63.72	$0.00	$9.83	$79.08	$54.82	$44.59	$63.28	$56.46	$46.15	$41.61	$47.72	$45.09	$51.91
Production Costs	$19.02	$0.00	$4.65	$50.90	$35.01	$27.28	$30.05	$29.04	$25.83	$31.84	$30.50	$29.11	$29.28
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$137.67	$1.65	$6.25	$17.25	$20.27	$18.99	$21.81	$21.23	$21.70	$19.50	$8.85	$17.40	$19.35
G&A / Other	$225.46	$53.53	$138.18	$132.44	$48.97	$17.31	$10.75	$8.56	$10.80	$11.69	$9.78	$10.81	$10.17
Pre-Tax Results of Operations	-$318.42	-$55.18	-$139.24	-$121.51	-$49.43	-$18.99	$0.66	-$2.37	-$12.18	-$21.43	-$1.41	-$12.23	-$6.90
Income Taxes	$0.00	$0.00	$0.00	-$3.04	-$1.24	-$0.47	$0.02	-$0.06	-$0.30	-$3.72	-$0.34	-$1.79	-$0.67
Results of Operations	-$318.42	-$55.18	-$139.24	-$118.47	-$48.20	-$18.52	$0.65	-$2.32	-$11.88	-$17.71	-$1.07	-$10.44	-$6.22

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Madalena Energy (MVN - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	0.1	0.1	-	-	0.4	2.9	4.5	3.5	1.9	1.5	0.9	1.5	2.5
Liquids Production (b/d)	8	67	54	73	168	449	1,710	2,425	1,750	1,478	1,272	1,500	1,727
Total Production (boe/d)	22	89	54	73	233	930	2,459	3,014	2,068	1,735	1,424	1,743	2,140
% Gas Production	62%	24%	0%	0%	28%	52%	30%	20%	15%	15%	11%	14%	19%
% Oil Production	38%	76%	100%	100%	72%	48%	70%	80%	85%	85%	89%	86%	81%
Proven Reserves:													
Closing Gas Reserves (bcf)	0.3	0.2	1.6	0.9	6.6	6.8	7.3	4.1	3.769	3.031	3.180	3.3	4.3
Closing Oil Reserves (mmbbls)	0.2	0.4	0.6	0.6	0.9	1.1	4.2	4.4	4.128	2.511	3.513	3.4	3.8
Closing Total Proven Reserves (mmboe)	0.2	0.4	0.9	0.8	2.0	2.3	5.5	5.0	4.8	3.0	4.0	3.9	4.5
% Gas Reserves	24%	10%	29%	20%	55%	50%	22%	14%	13%	17%	13%	14%	16%
% Oil Reserves	76%	90%	71%	80%	45%	50%	78%	86%	87%	83%	87%	86%	84%
Proven Reserve Life Index	24.9	13.3	45.4	28.9	23.5	6.7	6.1	4.6	6.3	4.8	7.8	6.3	5.9
Proven Reserve Additions:													
Gas Additions (bcf)	0.0	0.0	1.3	-0.6	5.9	1.2	2.1	-1.8	1.8	-0.1	0.5	2.2	2.4
Oil Additions (mmbbls)	0.1	0.3	0.4	0.0	0.4	0.4	3.7	1.0	0.7	-1.0	1.5	1.1	5.8
Total Additions (mmboe)	0.1	0.3	0.6	-0.1	1.4	0.6	4.1	0.7	0.9	-1.0	1.5	1.4	6.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.1	0.3	0.8	0.3	0.6	0.5	0.2	0.6	0.4	0.0	0.8	1.3	2.1
Net Acquisitions	0.0	-0.1	-0.2	-0.3	1.1	0.1	3.9	0.0	0.2	-0.5	0.4	0.2	4.0
Revisions of Estimates	0.0	0.0	0.0	-0.1	-0.4	0.0	0.0	0.1	0.3	-0.5	0.3	0.0	0.1
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	103.6%	125.4%	126.2%	-334.6%	43.4%	87.9%	4.8%	87.7%	45.8%	-1.7%	51.9%	87.0%	33.0%
Net Acquisitions	0.0%	-26.1%	-26.7%	322.3%	82.2%	14.0%	94.6%	0.0%	25.9%	50.4%	28.7%	11.0%	64.7%
Revisions of Estimates	-3.6%	0.8%	0.5%	112.3%	-25.7%	-1.9%	0.6%	12.3%	28.4%	51.3%	19.4%	2.1%	2.3%
Additions as % of Production:													
Gas	-6.2%	-10.7%	0.0%	0.0%	4145.0%	114.0%	127.5%	-142.0%	257.3%	-18.6%	140.3%	135.3%	53.4%
Oil	4406.3%	1041.0%	2062.3%	50.3%	637.9%	221.3%	599.2%	112.1%	101.8%	-191.4%	314.7%	65.8%	184.4%
Total	1656.2%	786.1%	3166.9%	-355.9%	1614.4%	165.8%	455.5%	62.5%	125.8%	-165.7%	296.1%	75.4%	159.2%
Additions as % of Reserves:													
Gas	-0.6%	-2.0%	83.9%	-71.8%	89.1%	17.6%	28.6%	-44.7%	47.6%	-3.5%	14.7%	64.8%	56.5%
Oil	87.7%	65.5%	64.1%	2.2%	43.6%	32.3%	88.1%	22.8%	15.8%	-41.1%	41.6%	31.9%	154.9%
Total	66.6%	59.0%	69.8%	-12.3%	68.7%	24.9%	74.8%	13.6%	20.0%	-34.8%	38.1%	36.6%	139.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$5	$1	$1	$0	$3	$4	$2	$11	$0	$2	$2	$4	$17
Exploration & Development	$3	$4	$6	$20	$9	$16	$31	$30	$6	$2	$4	$12	$73
Net Acquisitions	$0	$0	$0	$0	$8	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$8	$5	$7	$20	$20	$20	$33	$41	$6	$4	$6	$16	$90
Expenditures as % of Total (US$million):													
Land & Seismic	59.8%	15.4%	13.7%	0.9%	16.2%	20.9%	5.8%	27.6%	5.2%	49.2%	29.8%	24.5%	19.1%
Exploration & Development	40.2%	84.6%	86.3%	99.1%	42.3%	79.1%	94.2%	72.4%	94.8%	50.8%	70.2%	75.5%	80.9%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	41.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-$1	-$2	-$3	-$3	-$3	$4	$16	$28	$5	-$3	$4	$7	$51
Cashflow (US$/boe)	-$152.51	-$68.33	-$135.61	-$110.66	-$30.64	$10.95	$17.88	$25.27	$7.14	-$4.06	$7.79	$3.60	$12.99
Recycle Ratio	-2.6x	-3.4x	-12.1x	0.5x	na	na	na	na	na	na	na	0.3x	0.9x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$57.76	$15.85	$8.84	$96.41	$48.84	$41.20	$146.87	$60.22	$9.00	-$7.20	$5.02	$12.17	$40.93
Net Acquisition Costs	na	$0.00	$0.00	$0.00	$7.49	$0.00	$0.00	na	$0.00	$0.00	$0.00	$0.00	$0.00
All Sources (incl. revisions)	$57.76	$19.98	$11.21	-$214.28	$14.85	$35.45	$8.00	$60.22	$6.68	-$3.57	$3.58	$10.84	$14.43
Exploration & Development (excl. revisions)	$55.77	$15.94	$8.88	nm	$20.00	nm	nm	$68.68	$14.58	$214.50	$6.90	$12.47	$43.72
Net Acquisition Costs	na	$0.00	$0.00	$0.00	$7.49	$0.00	$0.00	na	$0.00	$0.00	$0.00	$0.00	$0.00
All Sources (excl. revisions)	$55.77	$20.14	$11.27	$1,735.82	$11.82	$34.79	$8.05	$68.68	$9.32	-$7.33	$4.45	$11.07	$14.77

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Madalena Energy (MVN - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	19.02	-	4.65	50.90	35.01	27.28	30.05	29.04	25.83	31.84	30.50	29.11	29.28
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	225.46	53.53	138.18	132.44	48.97	17.31	10.75	8.56	10.80	11.69	9.78	10.81	10.17
F&D Costs (1-Year)	57.76	19.98	11.21	41.37	14.85	35.45	8.00	60.22	6.68	24.96	4.45	12.03	20.86
Return on Capital	100.27	17.04	35.14	85.20	24.13	14.77	3.06	17.77	2.65	1.00	1.00	1.00	1.00
Income Taxes	-	-	-	2.18	0.62	0.38	0.08	0.46	0.07	0.21	0.32	0.17	0.11
Breakeven Oil Price	**402.51**	**90.56**	**189.18**	**312.10**	**123.58**	**95.19**	**51.94**	**116.04**	**46.02**	**69.70**	**46.04**	**53.12**	**61.42**
Quality Differential	6.57	53.51	70.51	31.87	30.50	19.52	13.63	(10.11)	(6.13)	7.67	16.63	6.06	4.34
Required Brent Price	**409.08**	**144.07**	**259.69**	**343.97**	**154.08**	**114.71**	**65.57**	**105.94**	**39.89**	**77.37**	**62.67**	**59.17**	**65.76**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	27.04	-	4.65	50.90	43.91	44.95	37.50	32.92	28.32	33.70	32.50	31.29	32.86
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	320.59	60.28	138.18	132.44	61.43	28.52	13.41	9.71	11.84	12.37	10.42	11.62	11.42
F&D Costs (1-Year)	58.86	20.04	13.49	42.79	30.96	48.57	8.47	47.27	7.96	21.23	3.67	10.95	17.72
Return on Capital	132.00	18.51	37.41	74.80	36.19	20.66	3.45	14.51	3.20	6.48	1.75	4.32	6.69
Income Taxes	-	-	-	1.92	0.93	0.53	0.09	0.37	0.08	1.36	0.56	0.74	0.73
Breakeven Oil Price	**538.49**	**98.83**	**193.73**	**302.84**	**173.41**	**143.23**	**62.92**	**104.77**	**51.40**	**75.15**	**48.89**	**58.93**	**69.42**
Quality Differential	9.34	60.25	70.51	31.87	38.25	32.16	17.01	(11.46)	(6.72)	8.12	17.71	6.37	4.93
Required Brent Price	**547.83**	**159.07**	**264.25**	**334.72**	**211.67**	**175.40**	**79.94**	**93.32**	**44.68**	**83.26**	**66.60**	**65.30**	**74.35**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	27.04	-	4.65	50.90	43.91	44.95	37.50	32.92	28.32	33.70	32.50	31.29	32.86
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	320.59	60.28	138.18	132.44	61.43	28.52	13.41	9.71	11.84	12.37	10.42	11.62	11.42
F&D Costs (1-Year)	221.31	50.60	25.37	59.91	31.20	61.22	9.45	80.30	21.54	8.50	14.86	14.97	26.93
Return on Capital	542.38	46.68	84.08	104.27	36.46	26.02	3.84	24.72	8.65	21.93	13.11	15.75	15.80
Income Taxes	-	-	-	2.67	0.93	0.67	0.10	0.63	0.22	4.60	4.15	2.70	1.71
Breakeven Oil Price	**1,111.31**	**157.55**	**252.28**	**350.20**	**173.94**	**161.38**	**64.30**	**148.28**	**70.58**	**81.11**	**75.03**	**76.33**	**88.73**
Quality Differential	9.34	60.25	70.51	31.87	38.25	32.16	17.01	(11.46)	(6.72)	8.12	17.71	6.37	4.93
Required Brent Price	**1,120.66**	**217.80**	**322.79**	**382.07**	**212.19**	**193.54**	**81.31**	**136.82**	**63.86**	**89.23**	**92.74**	**82.70**	**93.66**

Source: BMO Capital Markets, Company Reports

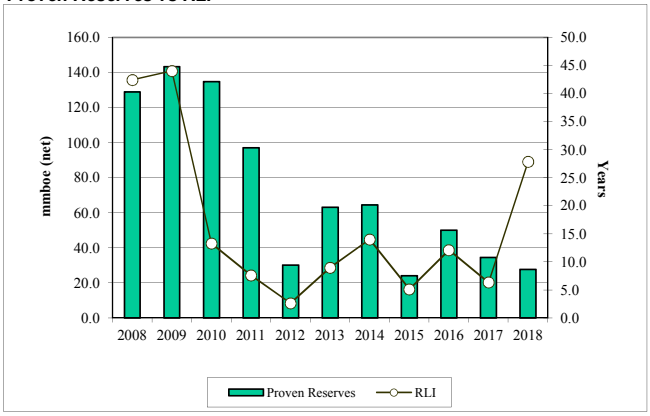
See pages F1 to F4 for analyst coverage.

Niko Resources Ltd. (NKO - TSX)

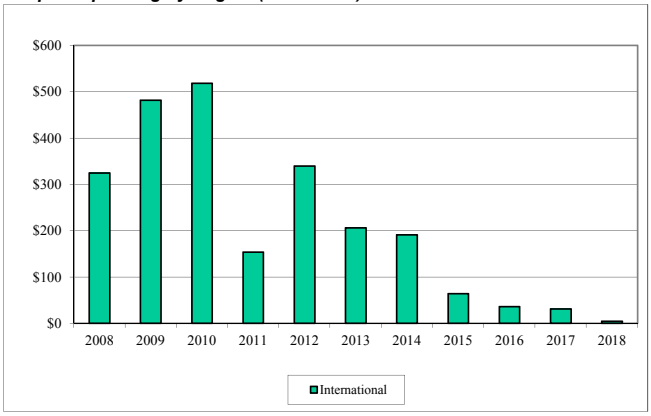
US$, net

- Niko's loss from of operations widened to $35.14/boe in 2018 versus $2.13/boe in 2017.
- The company reported a loss on capital employed of 24.2% relative to a normalized ROCE of 26.8% in 2017.
- One-year F&D costs were non-meaningful due to negative revisions. So, our calculations are based on a three-year simple average cost of $13.20/boe. On a realized oil:gas price ratio basis, three-year F&D costs came in at $34.32/boe. The PD costs came in at $47.15/boe.
- Niko's 2018 operations implied a required Brent breakeven oil price of $170.83/boe on a realized oil:gas price ratio basis, while its PD cost assessment implied a Brent breakeven oil price of $231.52/boe.

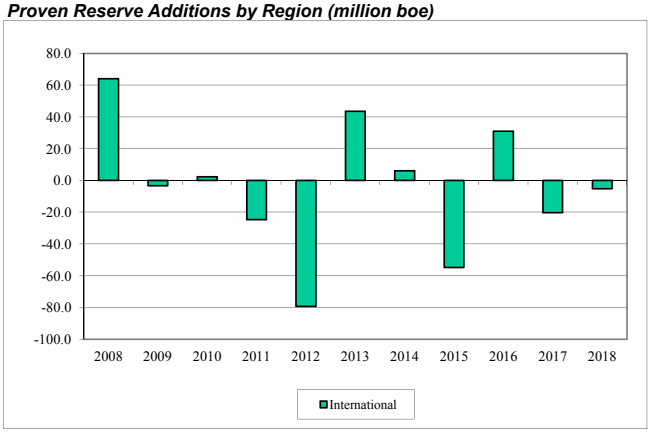
Proven Reserves vs RLI



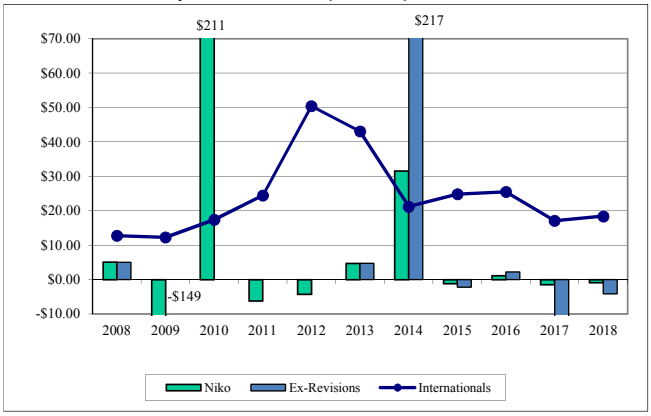
Capital Spending by Region (US$million)



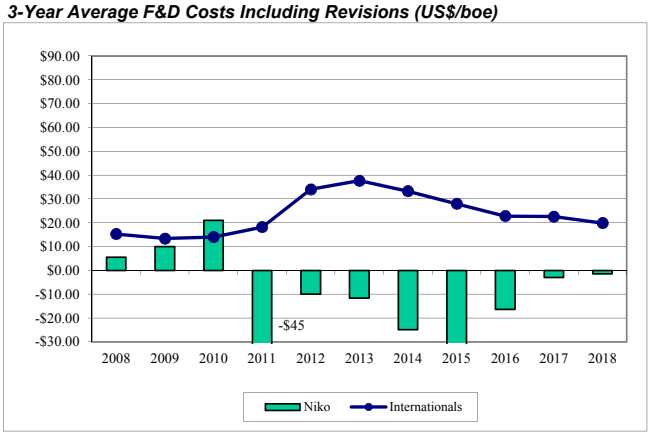
Proven Reserve Additions by Region (million boe)



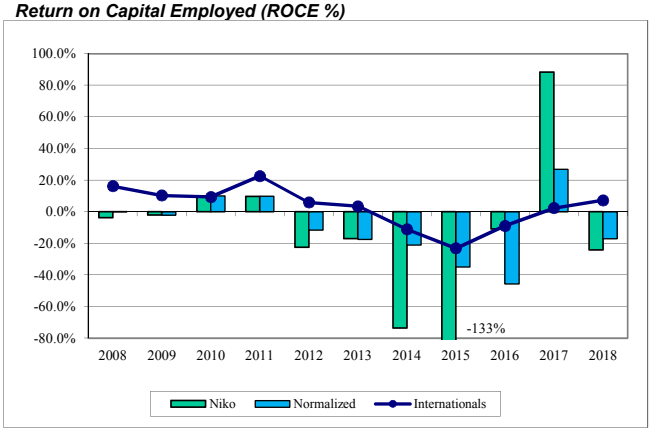
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

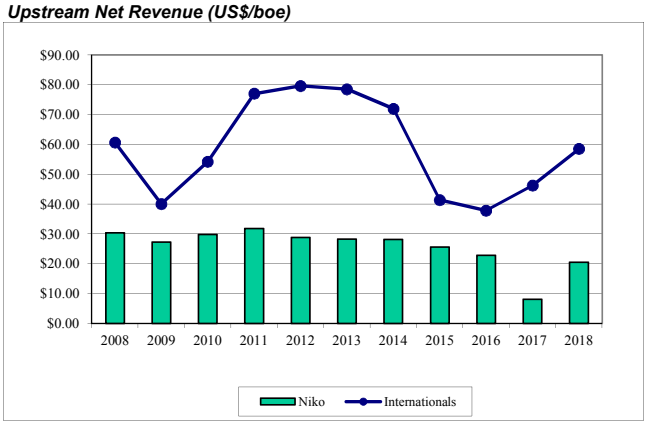
See pages F1 to F4 for analyst coverage.

Niko Resources Ltd. (NKO - TSX)

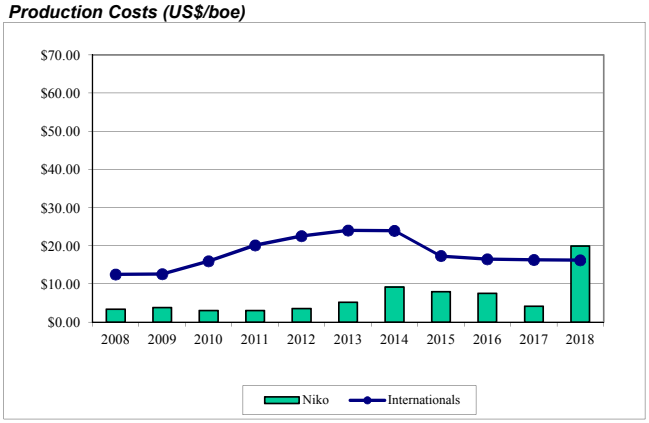
US$, net

International

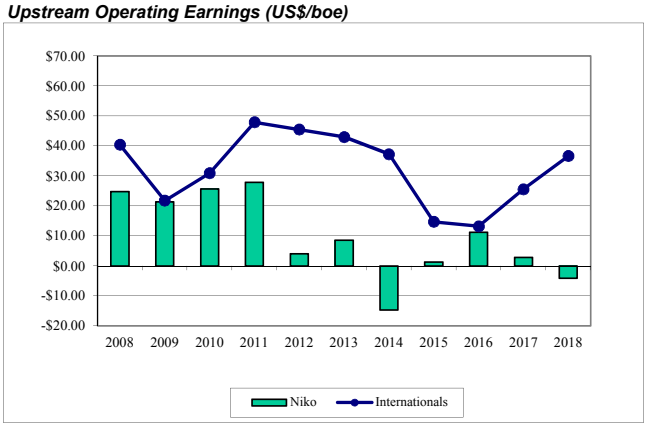
Upstream Net Revenue (US$/boe)



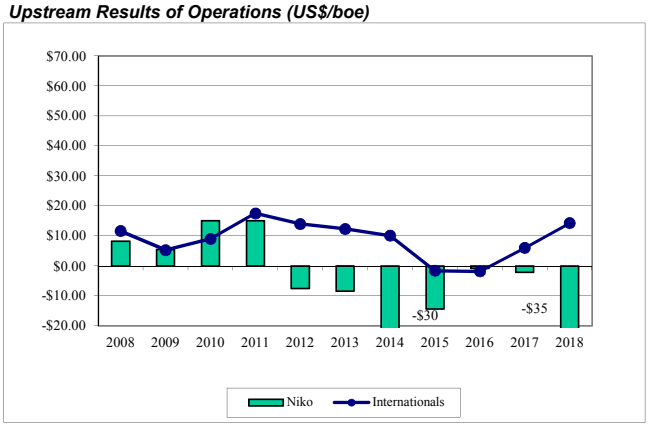
Production Costs (US$/boe)



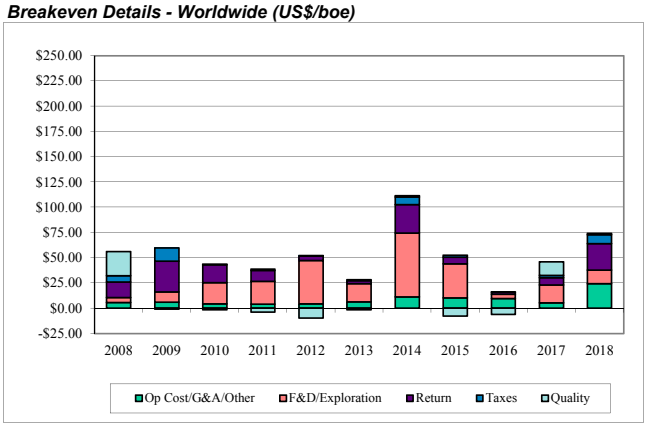
Upstream Operating Earnings (US$/boe)



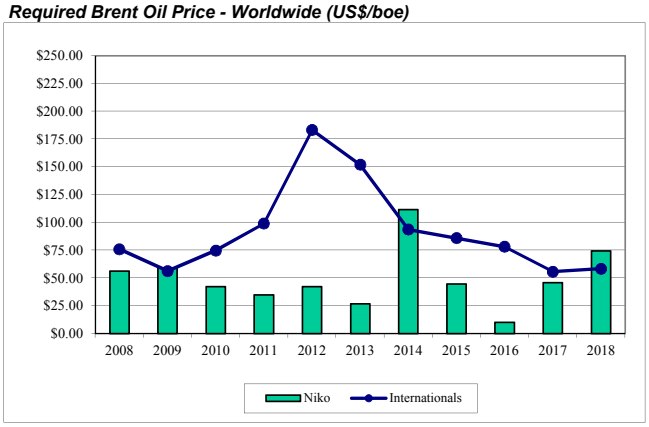
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Niko Resources Ltd. (NKO - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	93	100	319	433	321	199	129	121	94	44	20
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(1)	(11)	(17)	(28)	6	-	-	-	-	-	-
Total Revenue and Other Income	92	89	302	405	328	199	129	121	94	44	20
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	10	12	31	38	40	37	42	38	31	23	20
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	233	95	145	67	8	1	0
General and Administrative	7	7	11	12	9	7	10	10	8	5	4
Depreciation, Depletion and Amortization	40	44	101	139	141	145	109	97	51	31	42
Interest, net	-	1	20	30	30	35	66	193	77	26	5
Other	56	41	16	51	59	57	589	399	(65)	(268)	30
Earnings Before Income Tax	(20)	(18)	123	135	(185)	(176)	(832)	(683)	(16)	227	(82)
Current Income Taxes	2	5	25	37	15	(0)	0	0	0	-	-
Future Income Taxes	-	-	(20)	(22)	(34)	40	(175)	(10)	40	(40)	-
Total Income Taxes	2	5	4	15	(19)	40	(175)	(10)	40	(40)	-
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	(22)	(23)	119	120	(166)	(216)	(657)	(673)	(56)	267	(82)
Discontinued Operations/Extraordinary Items	-	-	-	-	(156)	-	-	-	(30)	(2)	0
Cumulative Change in Accounting Principle	-	-	-	-	6	-	-	-	-	-	-
Net Earnings	(22)	(23)	119	120	(316)	(216)	(657)	(673)	(86)	264	(81)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(22)	(23)	119	120	(316)	(216)	(657)	(673)	(86)	264	(81)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(22)	(23)	119	120	(166)	(216)	(657)	(673)	(56)	267	(82)
Charges and Credits Not Impacting Cash	65	45	81	117	108	246	546	418	(30)	6	44
Other	29	44	14	46	138	29	62	258	72	(278)	32
Cash Flow From Operations	72	66	214	283	79	59	(49)	4	(13)	(6)	(6)
Change in Working Capital / Other	(14)	6	(32)	(43)	28	1	4	(8)	47	8	1
Net Cash From Operating Activities	58	72	182	240	108	60	(45)	(5)	34	2	(5)
Total Capital Expenditures	(325)	(482)	(216)	(146)	(186)	(204)	(154)	(47)	(28)	(31)	(5)
Acquisitions, net	-	-	(303)	-	-	70	25	64	(1)	-	1
Other	(159)	15	153	(13)	20	58	53	(44)	(5)	11	3
Net Cash From Investing Activities	(484)	(467)	(366)	(159)	(166)	(76)	(76)	(27)	(33)	(20)	(1)
Net Change in Debt	182	-	298	(193)	25	(136)	(142)	(48)	(38)	(21)	(10)
Net Change in Common Stock	490	12	55	39	7	153	30	-	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(5)	(5)	(6)	(11)	(13)	(3)	-	-	-	-	-
Other	-	-	-	(5)	(5)	(5)	260	57	14	13	7
Net Cash From Financing Activities	667	7	347	(170)	15	8	147	9	(24)	(8)	(2)
Effect of Exchange Rate on Cash	(8)	(24)	3	1	(0)	0	0	-	-	-	-
Net Increase/(Decrease) in Cash	233	(413)	166	(88)	(44)	(8)	26	(23)	(23)	(26)	(9)
Cash and Equivalents, Beginning of Year	197	444	31	197	108	64	56	82	60	37	11
Cash and Equivalents, End of Year	430	31	197	108	64	56	82	60	37	11	3

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Niko Resources Ltd. (NKO - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	486	248	306	205	143	153	224	158	77	30	26
Net Property, Plant and Equipment	610	1,154	1,845	1,861	1,366	1,290	700	252	351	349	312
Other Assets	182	66	96	141	109	51	61	45	47	47	26
Total Assets	1,277	1,469	2,246	2,208	1,618	1,494	985	455	475	426	363
Total Current Liabilities	19	133	291	98	414	185	210	762	848	410	436
Long-term Debt	187	193	329	-	25	170	317	23	14	215	211
Deferred Income Taxes	-	-	228	228	196	185	10	-	40	-	-
Other Liabilities and Deferred Credits	9	86	84	400	84	78	183	73	62	48	45
Total Liabilities	215	411	931	726	718	618	720	857	964	673	692
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	1,066	1,002	1,107	1,158	1,171	1,324	1,361	1,367	1,367	1,367	1,367
Contributed Surplus (Paid-in Capital)	36	52	48	67	105	139	143	143	143	143	143
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	41	6	132	241	(389)	(608)	(1,265)	(1,938)	(2,024)	(1,759)	(1,841)
Other / Comprehensive Income (Loss)	(81)	(2)	27	15	13	20	25	25	25	2	2
Total Shareholders' Equity	1,062	1,057	1,315	1,482	901	876	264	(403)	(488)	(247)	(328)
Total Liabilities and Shareholders' Equity	1,277	1,469	2,246	2,208	1,618	1,494	985	455	475	426	363

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$30.36	$27.32	$29.85	$31.82	$28.85	$28.28	$28.14	$25.66	$22.85	$8.15	$20.48	$15.04	$20.59
Production Costs	$3.43	$3.80	$3.07	$3.02	$3.54	$5.22	$9.21	$8.01	$7.55	$4.17	$19.93	$6.97	$7.74
Exploration	$0.00	$0.00	$0.00	$0.00	$20.51	$13.50	$31.54	$14.30	$2.02	$0.14	$0.19	$0.88	$11.16
DD&A	$13.01	$13.52	$10.01	$10.95	$12.44	$20.60	$23.75	$20.47	$12.33	$5.67	$42.71	$11.75	$16.60
G&A/Other	$2.20	$2.19	$1.09	$0.95	$0.77	$0.98	$2.07	$2.09	$2.04	$1.00	$4.51	$1.73	$1.90
Pre-tax Results of Operations	$11.73	$7.82	$15.68	$16.91	-$8.40	-$12.03	-$38.44	-$19.21	-$1.09	-$2.84	-$46.86	-$6.30	-$16.80
Income Taxes	$3.52	$2.35	$0.56	$1.89	-$0.85	-$3.61	-$8.07	-$4.80	-$0.27	-$0.71	-$11.71	-$1.57	-$4.07
Results of Operations	$8.21	$5.47	$15.11	$15.02	-$7.55	-$8.42	-$30.37	-$14.41	-$0.82	-$2.13	-$35.14	-$4.72	-$12.73

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Niko Resources Ltd. (NKO - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	48.8	51.2	160.3	199.8	182.3	109.8	71.6	73.4	64.5	81.5	15.2	53.7	61.2
Liquids Production (b/d)	155	361	942	1,454	647	956	634	659	512	1,311	187	670	661
Total Production (boe/d)	8,295	8,897	27,664	34,758	31,038	19,263	12,565	12,895	11,261	14,888	2,715	9,621	10,865
% Gas Production	98%	96%	97%	96%	98%	95%	95%	95%	95%	91%	93%	93%	94%
% Oil Production	2%	4%	3%	4%	2%	5%	5%	5%	5%	9%	7%	7%	6%
Proven Reserves:													
Closing Gas Reserves (bcf)	743.4	827.3	777.6	573.7	175.2	372.2	380.4	140.1	276.5	185.6	147.7	203.3	226.1
Closing Oil Reserves (mmbbls)	5.0	5.6	5.3	1.6	1.0	1.2	1.2	0.9	4.0	3.7	3.1	3.6	2.6
Closing Total Proven Reserves (mmboe)	128.9	143.5	134.9	97.2	30.2	63.2	64.6	24.2	50.1	34.6	27.7	37.5	40.2
% Gas Reserves	96%	96%	96%	98%	97%	98%	98%	96%	92%	89%	89%	90%	94%
% Oil Reserves	4%	4%	4%	2%	3%	2%	2%	4%	8%	11%	11%	10%	6%
Proven Reserve Life Index	42.5	44.1	13.3	7.6	2.7	9.0	14.0	5.1	12.1	6.4	27.9	15.5	13.1
Proven Reserve Additions:													
Gas Additions (bcf)	354.1	-19.2	17.3	-145.5	-473.3	257.4	35.2	-328.3	166.1	-121.4	-29.1	15.6	-277.5
Oil Additions (mmbbls)	5.0	0.0	-0.4	-0.4	-0.4	0.7	0.2	-0.1	3.3	0.0	-0.4	2.9	3.0
Total Additions (mmboe)	64.0	-3.2	2.5	-24.7	-79.3	43.6	6.1	-54.8	31.0	-20.2	-5.2	5.5	-43.2
Addition Components (mmboe):													
Extensions, Discoveries and Additions	64.1	0.0	0.0	0.0	0.0	43.4	0.9	3.3	15.9	0.0	0.0	15.9	20.1
Net Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-32.9	0.0	0.0	-1.2	-1.2	-34.1
Revisions of Estimates	-0.1	-3.2	2.5	-24.7	-79.3	0.2	5.2	-25.2	15.1	-20.2	-4.1	-9.2	-29.2
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	100.2%	0.0%	0.0%	0.0%	0.0%	99.6%	14.5%	-6.0%	51.2%	0.0%	-0.7%	287.4%	-46.4%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	60.0%	0.0%	0.0%	22.7%	-21.5%	78.8%
Revisions of Estimates	-0.2%	100.0%	100.0%	100.0%	100.0%	0.4%	85.5%	46.0%	48.8%	100.0%	78.0%	-165.9%	67.6%
Additions as % of Production:													
Gas	1986.5%	-102.6%	29.5%	-199.5%	-711.1%	641.9%	134.5%	-1225.1%	705.7%	-408.4%	-524.8%	26.6%	-248.4%
Oil	8782.5%	-21.3%	-122.9%	-83.3%	-186.2%	203.1%	87.3%	-36.4%	1772.9%	2.1%	-584.1%	398.6%	252.1%
Total	2113.7%	-99.3%	24.3%	-194.6%	-700.1%	620.2%	132.2%	-1164.4%	754.3%	-372.3%	-528.9%	52.5%	-217.9%
Additions as % of Reserves:													
Gas	47.6%	-2.3%	2.2%	-25.4%	-270.1%	69.1%	9.2%	-234.3%	60.1%	-65.4%	-19.7%	7.7%	-122.7%
Oil	99.5%	-0.5%	-7.9%	-27.9%	-46.2%	58.7%	17.4%	-10.0%	83.4%	0.3%	-12.9%	81.5%	118.6%
Total	49.7%	-2.2%	1.8%	-25.4%	-263.1%	68.9%	9.4%	-226.1%	61.9%	-58.4%	-18.9%	14.8%	-107.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$5	$6	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$320	$475	$216	$154	$340	$206	$191	$64	$36	$31	$5	$72	$327
Net Acquisitions	$0	$0	$303	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$325	$482	$519	$154	$340	$206	$191	$64	$36	$31	$5	$72	$327
Expenditures as % of Total (US$million):													
Land & Seismic	1.5%	1.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	98.5%	98.7%	41.6%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	0.0%	0.0%	58.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$72	$66	$214	$283	$79	$59	-$49	$4	-$13	-$6	-$6	-$25	-$71
Cashflow (US$/boe)	$23.65	$20.34	$21.12	$22.26	$6.98	$8.34	-$10.70	$0.77	-$3.17	-$1.08	-$6.22	-$2.38	-$3.57
Recycle Ratio	4.7x	-0.1x	0.1x	-3.6x	-1.6x	1.8x	-0.3x	-0.7x	-2.7x	0.7x	6.9x	-0.2x	0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$5.07	-$149.39	$88.01	-$6.24	-$4.29	$4.73	$31.55	-$2.93	$1.16	-$1.53	-$1.17	$10.67	-$35.74
Net Acquisition Costs	na	na	na	na	na	na	na	$0.00	na	na	$0.00	0	0
All Sources (incl. revisions)	$5.07	-$149.39	$211.39	-$6.24	-$4.29	$4.73	$31.55	-$1.17	$1.16	-$1.53	-$0.90	$12.97	-$7.57
Exploration & Development (excl. revisions)	$5.06	na	na	na	na	$4.75	$217.48	$19.54	$2.27	na	$135.44	$4.51	$16.31
Net Acquisition Costs	na	na	na	na	na	na	na	$0.00	na	na	$0.00	$0.00	$0.00
All Sources (excl. revisions)	$5.06	nm	nm	nm	nm	$4.75	$217.48	-$2.17	$2.27	nm	-$4.11	$4.88	-$23.39
Geographically Segmented Costs													
International	$5.07	-$149.39	$211.39	-$6.24	-$4.29	$4.73	$31.55	-$1.17	$1.16	-$1.53	-$0.90	$0.71	$2.19

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Niko Resources Ltd. (NKO - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	3.43	3.80	3.07	3.02	3.54	5.22	9.21	8.01	7.55	4.17	19.93	6.97	7.74
Exploration Expense	-	-	-	-	20.51	13.50	31.54	14.30	2.02	0.14	0.19	0.88	11.16
G&A/Other	2.20	2.19	1.09	0.95	0.77	0.98	2.07	2.09	2.04	1.00	4.51	1.73	1.90
F&D Costs (1-Year)	5.07	9.97	20.96	22.53	22.53	4.73	31.55	19.54	2.27	17.79	13.20	11.09	16.87
Return on Capital	15.07	30.57	17.88	10.78	4.30	2.65	28.31	6.40	1.74	7.10	26.07	11.13	14.05
Income Taxes	6.46	13.10	0.67	1.36	0.48	1.14	7.53	2.13	0.58	2.37	8.69	3.71	4.49
Breakeven Oil Price	**32.22**	**59.63**	**43.68**	**38.63**	**52.14**	**28.22**	**110.21**	**52.48**	**16.19**	**32.56**	**72.58**	**35.52**	**56.20**
Quality Differential	23.86	(0.80)	(1.67)	(4.03)	(9.90)	(1.60)	1.17	(7.96)	(6.17)	13.21	1.61	2.88	0.37
Required Brent Price	**56.08**	**58.82**	**42.01**	**34.60**	**42.23**	**26.62**	**111.38**	**44.53**	**10.02**	**45.77**	**74.20**	**38.40**	**56.58**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.94	11.56	9.49	9.16	11.25	15.58	27.47	23.86	22.76	11.53	19.38	19.99	22.58
Exploration Expense	-	-	-	-	65.19	40.34	94.08	42.59	6.08	0.40	0.53	2.52	32.57
G&A/Other	7.01	6.66	3.38	2.89	2.46	2.94	6.17	6.23	6.14	2.76	12.95	4.97	5.54
F&D Costs (1-Year)	14.31	29.47	59.86	65.88	36.44	15.19	97.58	49.74	3.10	50.14	34.32	29.19	46.97
Return on Capital	43.88	89.60	51.63	29.65	7.09	7.90	81.54	15.71	2.57	20.78	74.26	31.87	40.92
Income Taxes	18.81	38.40	1.93	3.73	0.80	3.39	21.68	5.24	0.86	6.93	24.75	10.62	13.07
Breakeven Oil Price	**94.95**	**175.69**	**126.29**	**111.30**	**123.21**	**85.34**	**328.52**	**143.36**	**41.51**	**92.53**	**166.20**	**99.16**	**161.66**
Quality Differential	76.19	(2.45)	(5.15)	(12.25)	(31.48)	(4.79)	3.49	(23.70)	(18.60)	36.53	4.64	7.52	0.47
Required Brent Price	**171.14**	**173.25**	**121.15**	**99.05**	**91.74**	**80.55**	**332.01**	**119.67**	**22.91**	**129.06**	**170.83**	**106.68**	**162.13**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	11.56	9.49	9.16	11.25	15.58	27.47	23.86	22.76	11.53	19.38	19.99	22.58
Exploration Expense	-	-	-	65.19	40.34	94.08	42.59	6.08	0.40	0.53	2.52	32.57
G&A/Other	6.66	3.38	2.89	2.46	2.94	6.17	6.23	6.14	2.76	12.95	4.97	5.54
F&D Costs (1-Year)	18.08	99.61	38.17	64.34	84.06	70.31	40.33	23.07	22.67	47.15	30.96	40.71
Return on Capital	69.28	86.02	17.28	12.41	44.16	58.33	12.81	19.16	9.40	110.16	33.74	35.35
Income Taxes	29.69	3.22	2.17	1.40	18.93	15.51	4.27	6.39	3.13	36.72	11.25	11.28
Breakeven Oil Price	**135.27**	**201.72**	**69.68**	**157.04**	**206.00**	**271.88**	**130.10**	**83.59**	**49.89**	**226.89**	**103.43**	**148.03**
Quality Differential	(2.45)	(5.15)	(12.25)	(31.48)	(4.79)	3.49	(23.70)	(18.60)	36.53	4.64	7.52	0.47
Required Brent Price	**132.82**	**196.57**	**57.43**	**125.56**	**201.22**	**275.36**	**106.40**	**64.99**	**86.42**	**231.52**	**110.95**	**148.50**

Source: BMO Capital Markets, Company Reports

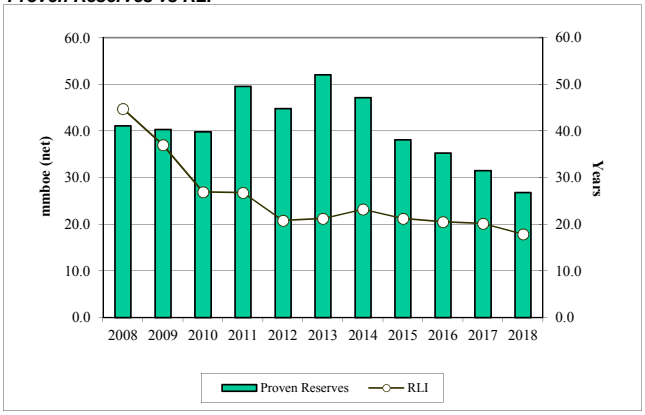
See pages F1 to F4 for analyst coverage.

Orca Exploration (ORC.B - TSX)

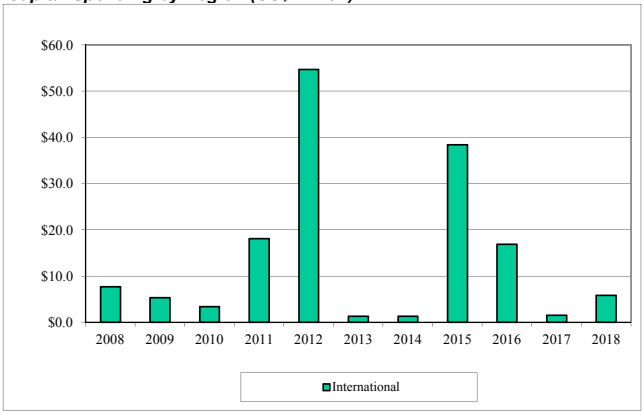
US$, net

- Orca's reported results of operations were somewhat flat at $8.59/boe in 2018 versus $8.39/boe in 2017.
- The company reported ROCE of 16.3% in 2018 versus 9.3% last year.
- One-year F&D costs were non-meaningful due to negative revisions and dispositions. Therefore, our calculations are based on the three-year simple average cost of $10.89/boe. On a realized oil:gas price ratio basis, three-year F&D costs came in at $39.41/boe. The adjusted PD costs came in at $39.41/boe.
- Orca's 2018 results imply a required Brent breakeven oil price of $105.61/boe on a realized oil:gas price ratio basis using three-year average F&D costs, while its PD cost assessment implies a breakeven of $105.77/boe.

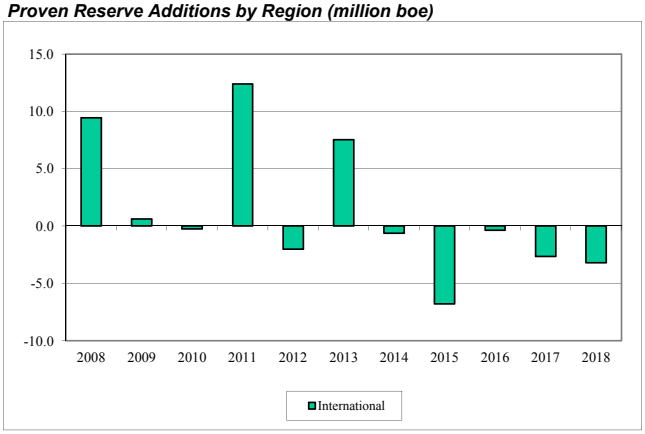
Proven Reserves vs RLI



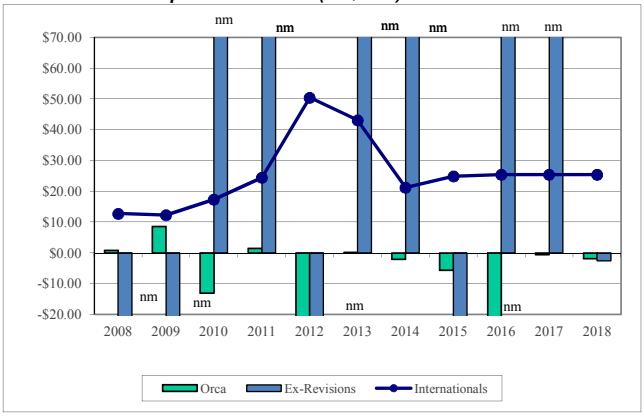
Capital Spending by Region (US$million)



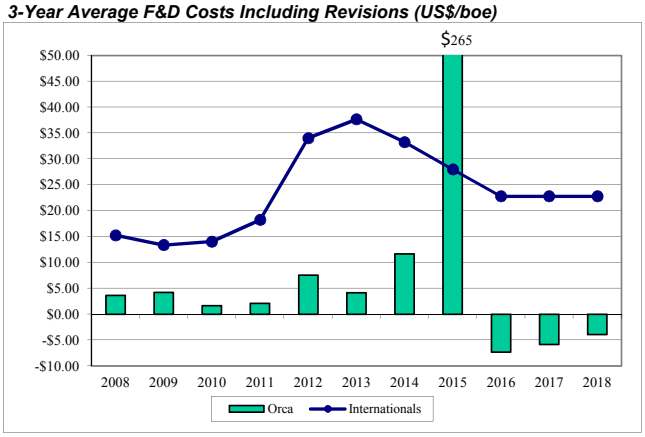
Proven Reserve Additions by Region (million boe)



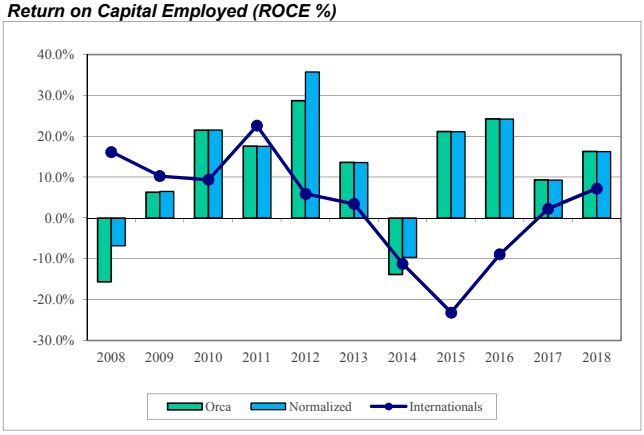
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

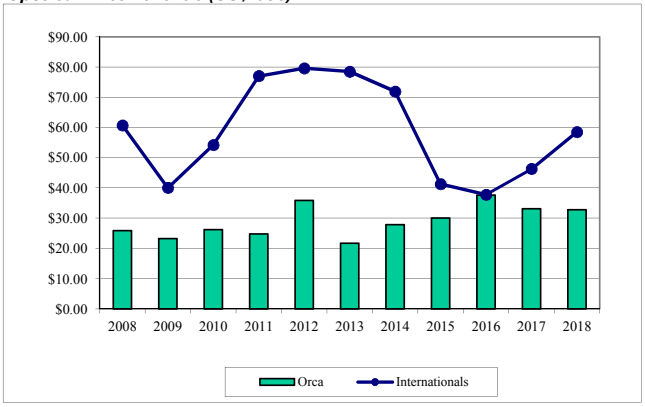
See pages F1 to F4 for analyst coverage.

Orca Exploration (ORC.B - TSX)

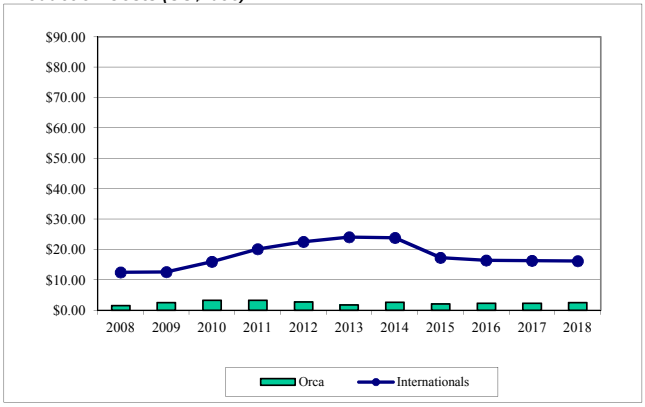
US$, net

International

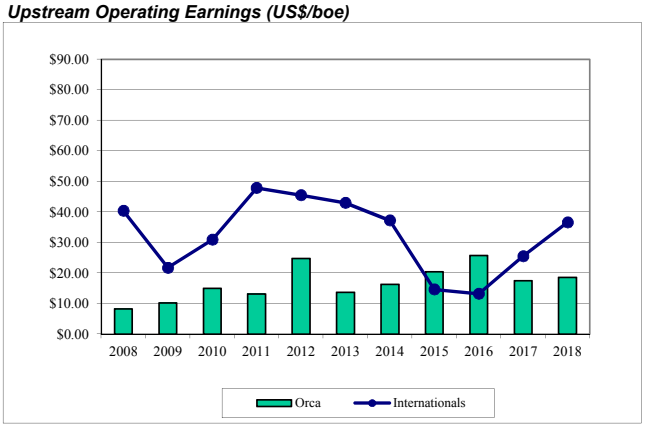
Upstream Net Revenue (US$/boe)



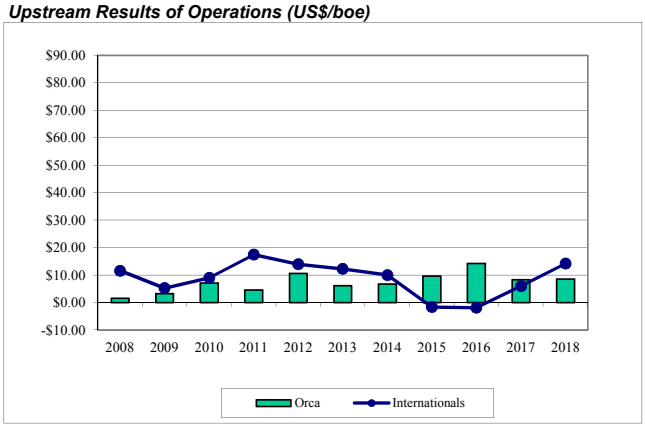
Production Costs (US$/boe)



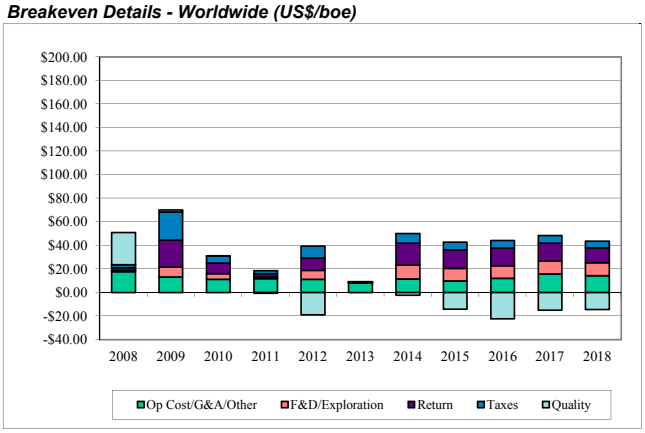
Upstream Operating Earnings (US$/boe)



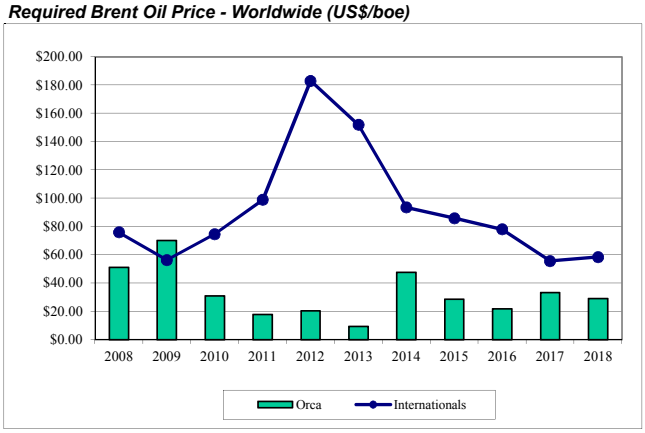
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Orca Exploration (ORC.B - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	24	26	36	42	64	54	53	50	56	45	46
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	(0)	(0)	3	4	13	(0)	4	4	9	7	3
Total Revenue and Other Income	24	25	39	46	77	53	57	54	65	52	49
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	1	3	5	6	6	4	5	4	4	4	4
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	15	11	12	15	18	15	18	14	16	21	17
Depreciation, Depletion and Amortization	5	4	5	8	9	12	14	12	9	9	9
Interest, net	0	0	1	1	1	26	41	14	20	12	(4)
Other	10	0	-	-	8	0	5	-	-	0	1
Earnings Before Income Tax	(7)	7	17	15	35	(5)	(27)	11	16	6	21
Current Income Taxes	0	-	3	5	12	10	12	8	10	10	7
Future Income Taxes	2	4	4	2	5	(8)	(0)	2	4	(1)	1
Total Income Taxes	2	4	7	7	17	2	11	9	13	9	8
Minority Interest	-	-	-	-	-	-	-	-	-	-	(0)
Earnings From Continuing Operations	(10)	3	10	8	18	(7)	(38)	2	2	(2)	13
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	(10)	3	10	8	18	(7)	(38)	2	2	(2)	13
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	(10)	3	10	8	18	(7)	(38)	2	2	(2)	13

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(10)	3	10	8	18	(7)	(38)	2	2	(2)	13
Charges and Credits Not Impacting Cash	17	8	9	10	22	4	18	14	13	8	11
Other	3	2	2	4	5	42	52	11	22	20	23
Cash Flow From Operations	10	12	21	22	46	40	32	26	37	25	46
Change in Working Capital / Other	(5)	(0)	(5)	(18)	(15)	(17)	(3)	(20)	(18)	23	(18)
Net Cash From Operating Activities	5	12	15	4	30	22	29	6	19	48	29
Total Capital Expenditures	(7)	(5)	(3)	(18)	(55)	(1)	(1)	(38)	(17)	(2)	(6)
Acquisitions, net	-	-	-	0	-	-	-	-	-	-	-
Other	(4)	(3)	0	4	(1)	-	-	8	(11)	(0)	1
Net Cash From Investing Activities	(11)	(8)	(3)	(15)	(55)	(1)	(1)	(30)	(28)	(2)	(5)
Net Change in Debt	-	-	-	-	6	(4)	(2)	19	40	-	-
Net Change in Common Stock	(0)	(0)	18	(1)	(0)	-	-	(0)	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	(17)
Other	-	-	0	-	0	(1)	0	(0)	(6)	(5)	(65)
Net Cash From Financing Activities	(0)	(0)	19	(1)	6	(5)	(2)	18	34	(5)	(82)
Effect of Exchange Rate on Cash	-	-	(0)	(0)	0	0	(2)	1	1	0	0
Net Increase/(Decrease) in Cash	(6)	4	31	(11)	(19)	16	24	(5)	27	41	(58)
Cash and Equivalents, Beginning of Year	17	11	15	46	35	16	33	58	54	81	122
Cash and Equivalents, End of Year	11	14	45	34	16	32	57	53	80	122	64

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Orca Exploration (ORC.B - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	24	24	64	81	104	85	119	85	115	135	149
Net Property, Plant and Equipment	61	63	61	71	108	96	78	104	111	111	107
Other Assets	-	-	-	-	-	30	1	1	1	3	6
Total Assets	85	86	124	152	212	211	198	190	227	250	262
Total Current Liabilities	14	7	11	25	58	57	85	52	43	66	64
Long-term Debt	-	-	-	-	-	-	-	19	58	59	54
Deferred Income Taxes	6	9	13	15	20	12	8	9	13	12	13
Other Liabilities and Deferred Credits	1	1	2	5	8	22	29	31	33	35	38
Total Liabilities	21	17	26	45	86	91	122	112	147	171	169
Minority Interests	-	-	-	-	-	-	-	-	-	-	0
Common Shares	67	66	85	85	85	85	86	85	85	87	87
Contributed Surplus (Paid-in Capital)	4	5	5	6	7	6	6	6	6	6	6
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	(6)	(2)	8	16	34	29	(15)	(14)	(11)	(14)	1
Other / Comprehensive Income (Loss)	-	-	-	-	0	(0)	(0)	(0)	(0)	(0)	(0)
Total Shareholders' Equity	65	69	98	107	126	120	77	78	80	79	93
Total Liabilities and Shareholders' Equity	85	86	124	152	212	211	198	190	227	250	262

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$25.89	$23.28	$26.23	$24.80	$35.89	$21.80	$27.87	$30.10	$37.65	$33.15	$32.80	$34.65	$32.11
Production Costs	$1.61	$2.58	$3.30	$3.29	$2.77	$1.80	$2.70	$2.09	$2.35	$2.32	$2.58	$2.41	$2.41
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	$5.13	$3.52	$3.27	$4.37	$4.17	$4.96	$6.68	$6.60	$5.35	$5.55	$6.32	$5.72	$6.13
G&A / Other	$15.99	$10.53	$7.92	$8.34	$8.36	$6.29	$8.82	$7.57	$9.51	$13.30	$11.63	$11.42	$10.00
Pre-Tax Results of Operations	$3.16	$6.66	$11.74	$8.79	$20.60	$8.75	$9.67	$13.84	$20.44	$11.98	$12.27	$15.11	$13.56
Income Taxes	$1.58	$3.44	$4.62	$4.21	$9.95	$2.62	$2.90	$4.15	$6.13	$3.59	$3.68	$4.53	$4.07
Results of Operations	$1.58	$3.21	$7.12	$4.58	$10.65	$6.12	$6.77	$9.69	$14.31	$8.39	$8.59	$10.57	$9.49

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Orca Exploration (ORC.B - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	15.1	17.9	24.3	30.4	35.4	40.3	33.4	29.5	28.2	25.7	24.7	26.2	28.3
Liquids Production (b/d)	0	0	0	0	0	0	0	0	0	0	0	0	0
Total Production (boe/d)	2,517	2,984	4,054	5,070	5,898	6,722	5,565	4,923	4,705	4,286	4,115	4,368	4,719
% Gas Production	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
% Oil Production	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Proven Reserves:													
Closing Gas Reserves (bcf)	246.7	241.9	239.0	297.6	269.0	312.6	282.9	229.0	211.7	189.3	161.1	187.4	214.8
Closing Oil Reserves (mmbbls)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Total Proven Reserves (mmboe)	41.1	40.3	39.8	49.6	44.8	52.1	47.1	38.2	35.3	31.5	26.8	31.2	35.8
% Gas Reserves	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
% Oil Reserves	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Proven Reserve Life Index	44.8	37.0	26.9	26.8	20.8	21.2	23.2	21.2	20.6	20.2	17.9	19.5	20.6
Proven Reserve Additions:													
Gas Additions (bcf)	56.7	3.7	-1.6	74.4	-12.1	45.3	-3.7	-40.6	-2.1	-15.8	-19.1	-37.1	-81.4
Oil Additions (mmbbls)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Additions (mmboe)	9.5	0.6	-0.3	12.4	-2.0	7.5	-0.6	-6.8	-0.4	-2.6	-3.2	-6.2	-13.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Acquisitions	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	-2.3	-2.3	-2.3
Revisions of Estimates	9.5	0.6	-0.3	12.4	-2.0	7.5	-0.6	-6.8	-0.4	-2.6	-0.9	-3.9	-11.3
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	72.6%	37.5%	17.1%
Revisions of Estimates	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	27.4%	62.5%	82.9%
Additions as % of Production:													
Gas	1028.7%	56.7%	-17.5%	670.3%	-93.7%	307.6%	-30.4%	-377.0%	-20.7%	-168.4%	-212.3%	-129.2%	-157.6%
Oil	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	1028.7%	56.7%	-17.5%	670.3%	-93.7%	307.6%	-30.4%	-377.0%	-20.7%	-168.4%	-212.3%	-129.2%	-157.6%
Additions as % of Reserves:													
Gas	23.0%	1.5%	-0.7%	25.0%	-4.5%	14.5%	-1.3%	-17.7%	-1.0%	-8.4%	-11.9%	-19.8%	-37.9%
Oil	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Total	23.0%	1.5%	-0.7%	25.0%	-4.5%	14.5%	-1.3%	-17.7%	-1.0%	-8.4%	-11.9%	-19.8%	-37.9%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$3	$0	$0	$16	$15	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$4	$6	$3	$2	$39	$1	$1	$38	$17	$2	$6	$24	$64
Net Acquisitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$8	$5	$3	$18	$55	$1	$1	$38	$17	$2	$6	$24	$64
Expenditures as % of Total (US$million):													
Land & Seismic	44.9%	-3.7%	11.8%	90.8%	28.3%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	55.1%	103.7%	88.2%	9.2%	71.7%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$10	$13	$21	$23	$46	$40	$32	$27	$38	$25	$46	$109	$168
Cashflow (US$/boe)	$10.61	$11.64	$14.08	$12.24	$21.35	$16.24	$15.97	$14.79	$21.85	$15.92	$30.94	$22.77	$19.50
Recycle Ratio	13.0x	1.4x	-1.1x	8.4x	-0.8x	95.1x	-7.5x	-2.6x	-0.5x	-27.1x	-16.9x	-5.8x	-4.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$0.82	$8.60	-$13.04	$1.46	-$27.12	$0.17	-$2.12	-$5.67	-$47.59	-$0.59	-$6.68	-$6.29	-$5.69
Net Acquisition Costs	na	na	na	na	na	na	na	na	na	na	$0.00	na	na
All Sources (incl. revisions)	$0.82	$8.60	-$13.04	$1.46	-$27.12	$0.17	-$2.12	-$5.67	-$47.59	-$0.59	-$1.83	-$3.93	-$4.72
Exploration & Development (excl. revisions)	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
Net Acquisition Costs	na	na	na	na	na	na	na	na	na	na	$0.00	na	na
All Sources (excl. revisions)	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
International	$0.82	$8.60	-$13.04	$1.46	-$27.12	$0.17	-$2.12	-$5.67	-$47.59	-$0.59	-$1.83	$0.26	$0.36

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Orca Exploration (ORC.B - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	1.61	2.58	3.30	3.29	2.77	1.80	2.70	2.09	2.35	2.32	2.58	2.41	2.41
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	15.99	10.53	7.92	8.34	8.36	6.29	8.82	7.57	9.51	13.30	11.63	11.42	10.00
F&D Costs (1-Year)	0.82	8.60	4.71	1.46	7.52	0.17	11.66	10.80	10.80	11.09	10.89	10.93	11.05
Return on Capital	2.53	22.54	8.98	2.77	10.62	0.25	18.71	15.63	15.04	15.10	12.87	14.22	15.44
Income Taxes	2.53	24.12	5.83	2.54	9.92	0.11	8.02	6.70	6.45	6.47	5.51	6.10	6.62
Breakeven Oil Price	**23.47**	**68.36**	**30.73**	**18.40**	**39.19**	**8.61**	**49.92**	**42.78**	**44.14**	**48.28**	**43.48**	**45.07**	**45.51**
Quality Differential	27.49	1.72	0.12	(0.64)	(18.91)	0.59	(2.28)	(14.33)	(22.33)	(15.02)	(14.37)	(17.24)	(13.67)
Required Brent Price	**50.96**	**70.08**	**30.85**	**17.76**	**20.28**	**9.21**	**47.64**	**28.45**	**21.81**	**33.26**	**29.11**	**27.83**	**31.85**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	6.57	7.47	11.78	15.52	11.94	7.02	9.41	4.15	3.73	4.38	5.94	4.50	5.13
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	65.30	30.52	28.28	39.36	36.09	24.45	30.69	15.06	15.13	25.10	26.81	21.33	21.28
F&D Costs (1-Year)	3.35	24.93	20.00	6.90	36.46	18.06	44.20	32.40	45.22	40.61	39.41	41.75	40.37
Return on Capital	10.34	65.60	38.12	13.03	51.37	26.02	70.95	46.75	62.98	55.03	46.59	54.56	56.03
Income Taxes	10.34	70.22	24.75	11.97	48.00	11.15	30.41	20.04	26.99	23.58	19.97	23.38	24.01
Breakeven Oil Price	**95.90**	**198.74**	**122.91**	**86.77**	**183.87**	**86.70**	**185.66**	**118.39**	**154.05**	**148.69**	**138.72**	**145.51**	**146.82**
Quality Differential	112.28	4.98	0.43	(3.04)	(81.70)	2.31	(7.95)	(28.50)	(35.51)	(28.34)	(33.12)	(32.32)	(26.68)
Required Brent Price	**208.18**	**203.72**	**123.34**	**83.73**	**102.18**	**89.01**	**177.72**	**89.89**	**118.55**	**120.35**	**105.61**	**113.19**	**120.14**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	6.57	7.47	11.78	15.52	11.94	7.02	9.41	4.15	3.73	4.38	5.94	4.50	5.13
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	65.30	30.52	28.28	39.36	36.09	24.45	30.69	15.06	15.13	25.10	26.81	21.33	21.28
F&D Costs (1-Year)	3.35	24.93	20.00	6.90	36.46	18.06	44.20	32.40	45.22	40.61	39.41	41.75	40.37
Return on Capital	13.16	76.65	38.95	13.54	49.87	24.98	68.31	44.77	60.68	53.87	46.71	53.67	54.36
Income Taxes	13.16	82.05	25.29	12.44	46.59	10.71	29.27	19.19	26.01	23.09	20.02	23.00	23.30
Breakeven Oil Price	**101.53**	**221.63**	**124.28**	**87.75**	**180.96**	**85.22**	**181.89**	**115.57**	**150.77**	**147.04**	**138.89**	**144.25**	**144.43**
Quality Differential	112.28	4.98	0.43	(3.04)	(81.70)	2.31	(7.95)	(28.50)	(35.51)	(28.34)	(33.12)	(32.32)	(26.68)
Required Brent Price	**213.82**	**226.61**	**124.71**	**84.71**	**99.26**	**87.53**	**173.94**	**87.07**	**115.27**	**118.70**	**105.77**	**111.93**	**117.75**

Source: BMO Capital Markets, Company Reports

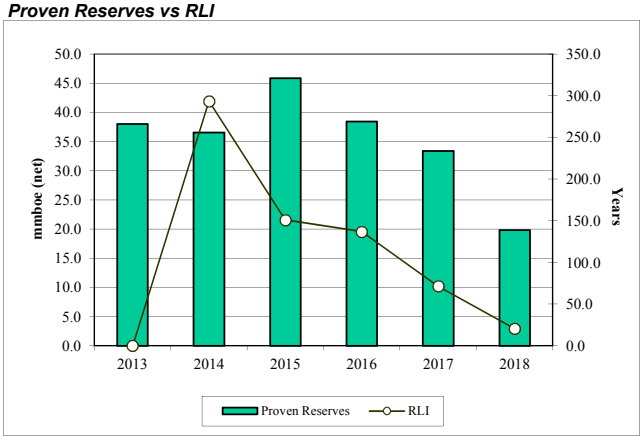
See pages F1 to F4 for analyst coverage.

Oryx Petroleum (OXC - TSX)

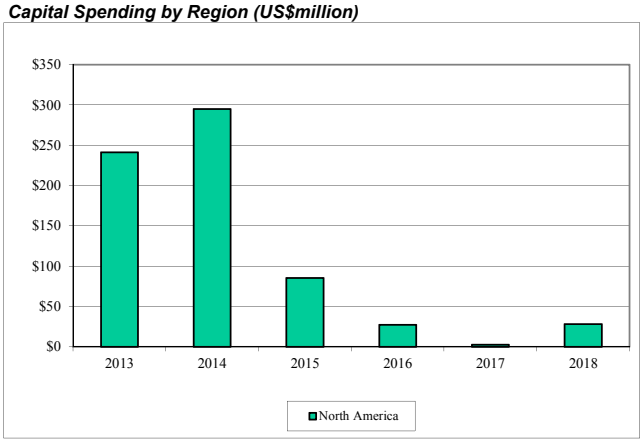
US$, net

- With limited production history, Oryx operates on a very high cost structure, although consistently optimizing its overall cost over the years. Oryx turned its first profit in 2018, with results from operations coming in at $7.54/boe in 2018 compared to a loss of $19.59/boe in 2017, primarily driven by lower operating costs.
- The company reported ROCE of 9.0% relative to a loss on capital of 4.1% in 2017.
- 2018 F&D costs were non-meaningful due to negative revisions. Hence, we have used a three-year simple average F&D cost which was recorded at $7.61/boe in 2018.
- Oryx's 2018 breakeven oil price is estimated at $73.04/boe using three-year average F&D costs.

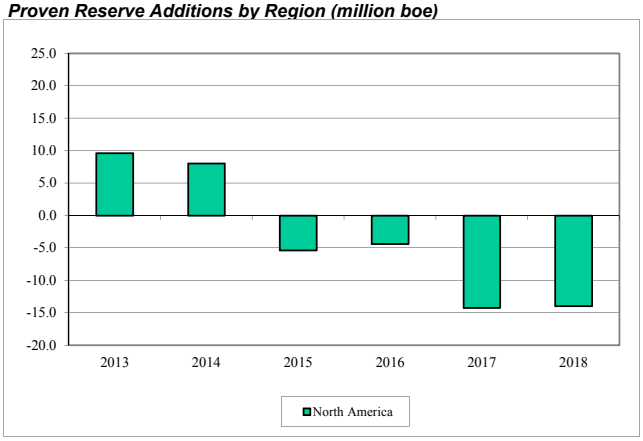
Proven Reserves vs RLI



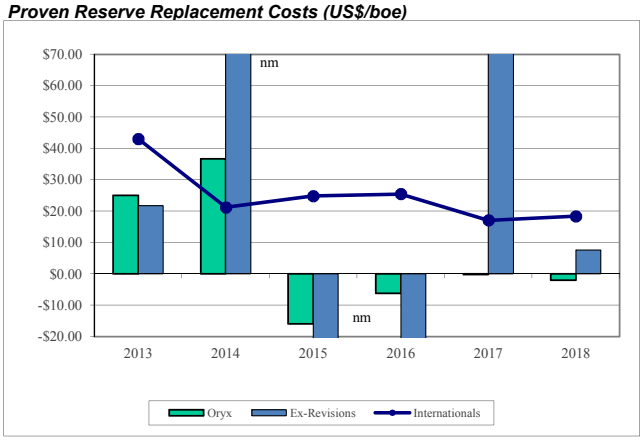
Capital Spending by Region (US$million)



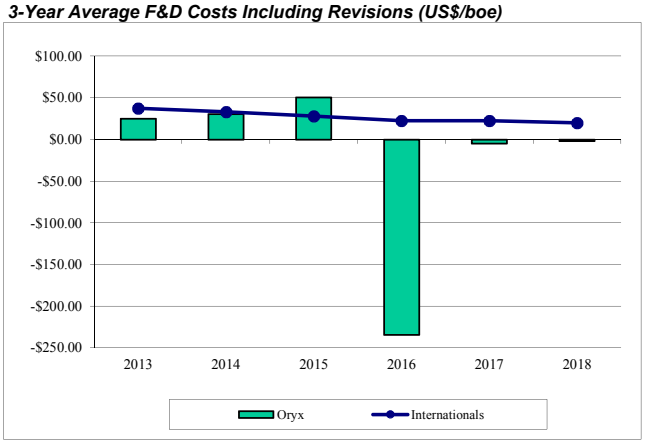
Proven Reserve Additions by Region (million boe)



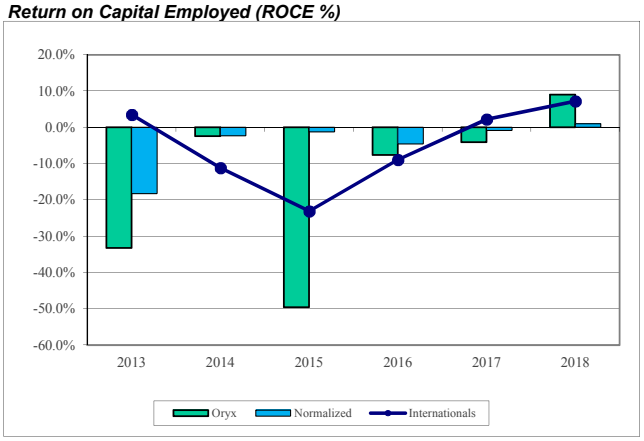
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

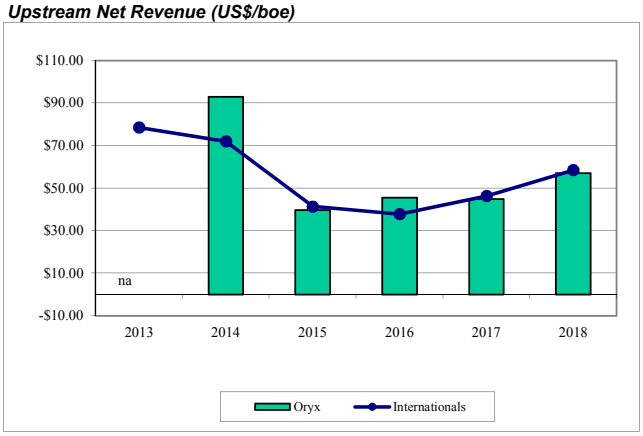
See pages F1 to F4 for analyst coverage.

Oryx Petroleum (OXC - TSX)

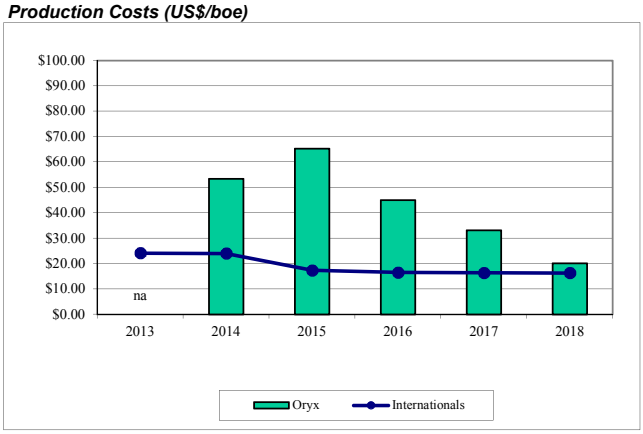
US$, net

International

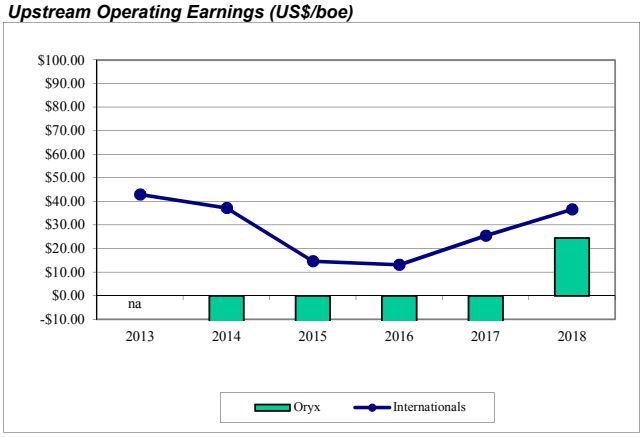
Upstream Net Revenue (US$/boe)



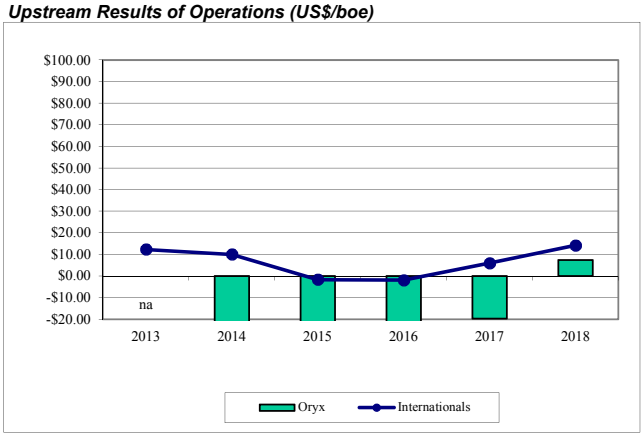
Production Costs (US$/boe)



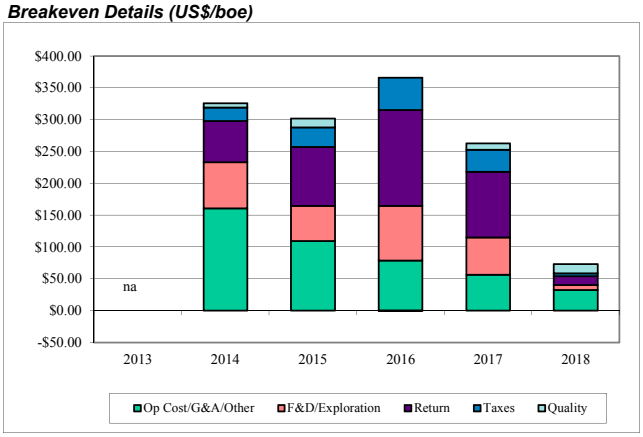
Upstream Operating Earnings (US$/boe)



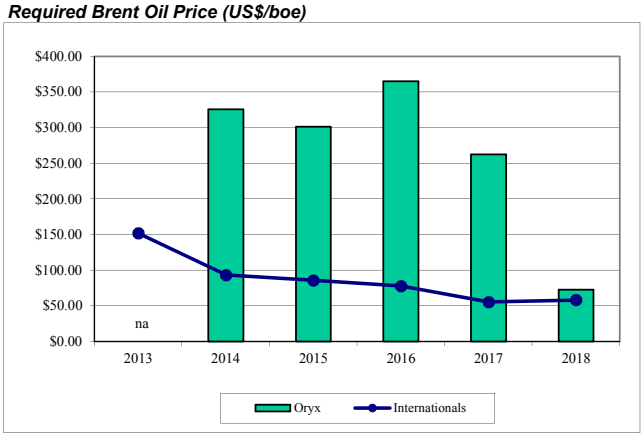
Upstream Results of Operations (US$/boe)



Breakeven Details (US$/boe)



Required Brent Oil Price (US$/boe)



Source: BMO Capital Markets, Company Reports

Oryx Petroleum (OXC - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	-	-	-	10	9	10	16	42
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	-	-	-	-	-	-	10	9	10	16	42
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	-	-	-	-	6	16	10	12	15
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	6	4	1	1	1	(0)
General and Administrative	-	-	-	-	-	39	12	11	7	8	9
Depreciation, Depletion and Amortization	-	-	-	-	-	1	4	6	4	5	11
Interest, net	-	-	-	-	-	0	0	5	13	10	12
Other	-	-	-	-	-	133	1	302	24	9	(40)
Earnings Before Income Tax	-	-	-	-	-	(179)	(17)	(331)	(48)	(28)	35
Current Income Taxes	-	-	-	-	-	1	1	1	1	1	2
Future Income Taxes	-	-	-	-	-	(0)	(1)	(0)	0	1	0
Total Income Taxes	-	-	-	-	-	1	1	1	1	2	2
Minority Interest	-	-	-	-	-	0	1	7	0	0	-
Earnings From Continuing Operations	-	-	-	-	-	(180)	(16)	(325)	(50)	(30)	34
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	-	-	(180)	(16)	(325)	(50)	(30)	34
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	-	-	(180)	(16)	(325)	(50)	(30)	34

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	-	-	(180)	(16)	(325)	(50)	(30)	34
Charges and Credits Not Impacting Cash	-	-	-	-	-	81	5	318	18	19	(31)
Other	-	-	-	-	-	79	5	23	24	7	16
Cash Flow From Operations	-	-	-	-	-	(20)	(6)	16	(7)	(4)	19
Change in Working Capital / Other	-	-	-	-	-	11	(20)	(33)	(2)	(3)	(12)
Net Cash From Operating Activities	-	-	-	-	-	(8)	(26)	(17)	(9)	(8)	6
Upstream Spending	-	-	-	-	-	-	(100)	(70)	(18)	(13)	(25)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	-
Acquisitions, net	-	-	-	-	-	(10)	(210)	(4)	(2)	(3)	(6)
Other	-	-	-	-	-	(217)	(29)	(30)	(6)	(1)	5
Net Cash From Investing Activities	-	-	-	-	-	(227)	(339)	(104)	(26)	(17)	(25)
Net Change in Debt	-	-	-	-	-	-	-	-	-	-	-
Net Change in Common Stock	-	-	-	-	-	479	190	-	25	23	1
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	(16)	(3)	78	(0)	-	(1)
Net Cash From Financing Activities	-	-	-	-	-	462	187	78	25	23	0
Effect of Exchange Rate on Cash	-	-	-	-	-	-	-	-	-	-	-
Net Increase/(Decrease) in Cash	-	-	-	-	-	227	(178)	(44)	(10)	(2)	(19)
Cash and Equivalents, Beginning of Year	-	-	-	-	-	71	277	86	41	31	30
Cash and Equivalents, End of Year	-	-	-	-	-	297	100	42	31	30	11

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Oryx Petroleum (OXC - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	-	-	321	133	67	46	54	47
Net Property, Plant and Equipment	-	-	-	-	-	431	665	462	464	449	503
Other Assets	-	-	-	-	-	196	233	82	69	71	77
Total Assets	-	-	-	-	-	948	1,031	611	579	574	627
Total Current Liabilities	-	-	-	-	-	135	88	44	48	33	54
Long-term Debt	-	-	-	-	-	-	-	84	77	58	59
Deferred Income Taxes	-	-	-	-	-	-	-	-	-	-	-
Other Liabilities and Deferred Credits	-	-	-	-	-	69	73	61	55	56	44
Total Liabilities	-	-	-	-	-	204	161	188	180	147	157
Minority Interests	-	-	-	-	-	16	14	1	0	0	-
Common Shares	-	-	-	-	-	981	1,111	961	967	1,036	1,044
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	-	-	(254)	(253)	(544)	(575)	(617)	(583)
Other / Comprehensive Income (Loss)	-	-	-	-	-	1	(2)	5	7	8	9
Total Shareholders' Equity	-	-	-	-	-	728	856	422	399	427	470
Total Liabilities and Shareholders' Equity	-	-	-	-	-	948	1,031	611	579	574	627
Return on Capital Employed (ROCE)	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**-33.3%**	**-2.4%**	**-49.5%**	**-7.6%**	**-4.1%**	**9.0%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
North America													
Net Revenue	-	-	-	-	-	-	$92.93	$39.70	$45.48	$44.83	$57.01	$51.78	$52.46
Production Costs	-	-	-	-	-	-	$53.35	$65.34	$44.97	$33.18	$20.06	$27.75	$34.60
Exploration	-	-	-	-	-	-	$35.86	$4.18	$3.40	$2.20	-$0.06	$1.12	$3.59
DD&A	-	-	-	-	-	-	$36.50	$27.19	$19.83	$12.68	$14.53	$14.90	$17.91
G&A / Other	-	-	-	-	-	-	$107.47	$44.23	$33.57	$22.89	$12.43	$18.77	$27.57
Pre-tax Results of Operations	-	-	-	-	-	-	-$140.25	-$101.23	-$56.28	-$26.12	$10.05	-$10.76	-$31.20
Income Taxes	-	-	-	-	-	-	-$35.06	-$25.31	-$14.07	-$6.53	$2.51	-$2.69	-$7.80
Results of Operations	-	-	-	-	-	-	-$105.19	-$75.93	-$42.21	-$19.59	$7.54	-$8.07	-$23.40

Source: BMO Capital Markets, Company Reports

Oryx Petroleum (OXC - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	-	-	-	-	-	-	-	-
Liquids Production (b/d)	-	-	-	-	-	-	342	833	769	1,279	2,628	1,559	1,170
Total Production (boe/d)	-	-	-	-	-	-	342	833	769	1,279	2,628	1,559	1,170
% Gas Production	-	-	-	-	-	-	0%	0%	0%	0%	0%	0%	0%
% Oil Production	-	-	-	-	-	-	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	-	-
Closing Oil Reserves (mmbbls)	-	-	-	-	-	38.0	36.6	45.9	38.5	33.4	19.8	30.6	34.8
Closing Total Proven Reserves (mmboe)	-	-	-	-	-	38.0	36.6	45.9	38.5	33.4	19.8	30.6	34.8
% Gas Reserves	-	-	-	-	-	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	-	-	-	-	-	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	-	-	-	-	-	nm	293.5	150.8	137.0	71.6	20.7	76.4	134.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil Additions (mmbbls)	-	-	-	-	-	9.6	8.0	-5.4	-4.4	-14.3	-14.0	-32.6	-30.0
Total Additions (mmboe)	-	-	-	-	-	9.6	8.0	-5.4	-4.4	-14.3	-14.0	-32.6	-30.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	-	-	11.1	0.2	0.0	0.0	0.0	3.7	3.7	3.9
Net Acquisitions	-	-	-	-	-	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revisions of Estimates	-	-	-	-	-	-1.4	7.8	-5.4	-4.4	-14.3	-17.7	-36.3	-33.9
Components as % of Total Additions:													
Extensions, Discoveries and Additions	-	-	-	-	-	115.0%	2.7%	0.0%	0.0%	0.0%	-26.4%	-11.3%	-13.0%
Net Acquisitions	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	-	-	-	-	-	-15.0%	97.3%	100.0%	100.0%	100.0%	126.4%	111.3%	113.0%
Additions as % of Production:													
Gas	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	-	-	-	-	-	0.0%	6450.6%	-1767.6%	-1570.1%	-3056.9%	-1456.4%	-1912.8%	-1403.8%
Total	-	-	-	-	-	0.0%	6450.6%	-1767.6%	-1570.1%	-3056.9%	-1456.4%	-1912.8%	-1403.8%
Additions as % of Reserves:													
Gas	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	-	-	-	-	-	25.3%	22.0%	-11.7%	-11.5%	-42.7%	-70.4%	-106.8%	-86.1%
Total	-	-	-	-	-	25.3%	22.0%	-11.7%	-11.5%	-42.7%	-70.4%	-106.8%	-86.1%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	-	-	-	$188.6	$88.8	$15.2	$9.8	$1.4	$7.4	$18.5	$122.5
Exploration & Development	-	-	-	-	-	$52.7	$206.4	$70.2	$17.7	$1.2	$20.7	$39.6	$316.2
Net Acquisitions	-	-	-	-	-	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0	$0.0
Total Expenditures	-	-	-	-	-	$241.3	$295.2	$85.4	$27.4	$2.6	$28.1	$58.1	$438.7
Expenditures as % of Total:													
Land & Seismic	-	-	-	-	-	78.1%	30.1%	17.8%	35.6%	53.3%	26.2%	31.8%	27.9%
Exploration & Development	-	-	-	-	-	21.9%	69.9%	82.2%	64.4%	46.7%	73.8%	68.2%	72.1%
Net Acquisitions	-	-	-	-	-	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	-	-	-	-	-	-$19.8	-$6.2	$15.9	-$7.0	-$4.2	$18.5	$7.4	$17.1
Cashflow (US$/boe)	-	-	-	-	-	-	-$50.04	$52.35	-$24.83	-$8.97	$19.33	$4.32	$7.99
Recycle Ratio	-	-	-	-	-	-	-1.4x	-3.3x	4.0x	49.7x	-9.6x	-2.4x	-0.5x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	-	-	$25.09	$36.71	-$15.89	-$6.22	-$0.18	-$2.01	-$1.78	-$14.63
Net Acquisition Costs	-	-	-	-	-	na	na	na	na	na	na	na	na
All Sources (incl. revisions)	-	-	-	-	-	$25.09	$36.71	-$15.89	-$6.22	-$0.18	-$2.01	-$1.78	-$14.63
Exploration & Development (excl. revisions)	-	-	-	-	-	$21.81	$1,360.88	nm	nm	nm	nm	$15.73	$112.17
Net Acquisition Costs	-	-	-	-	-	na	na	na	na	na	na	na	na
All Sources (excl. revisions)	-	-	-	-	-	$21.81	$1,360.88	nm	nm	nm	nm	$15.73	$112.17

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

Oryx Petroleum (OXC - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	53.35	65.34	44.97	33.18	20.06	27.75	34.60
Exploration Expense	-	-	-	-	-	-	35.86	4.18	3.40	2.20	(0.06)	1.12	3.59
G&A/Other	-	-	-	-	-	-	107.47	44.23	33.57	22.89	12.43	18.77	27.57
F&D Costs (1-Year)	-	-	-	-	-	-	36.71	50.61	82.41	56.58	7.61	48.87	46.78
Return on Capital	-	-	-	-	-	-	64.36	92.59	151.07	103.36	13.87	89.44	89.34
Income Taxes	-	-	-	-	-	-	21.45	30.86	50.36	34.45	4.62	29.81	29.78
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**319.21**	**287.81**	**365.77**	**252.66**	**58.54**	**215.76**	**231.66**
Quality Differential	-	-	-	-	-	-	6.45	(0.36)	(0.36)	9.96	14.50	8.03	8.88
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**325.66**	**287.46**	**365.42**	**262.62**	**73.04**	**223.79**	**240.54**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	-	-	-	-	53.35	65.34	44.97	33.18	20.06	27.75	34.60
Exploration Expense	-	-	-	-	-	-	35.86	4.18	3.40	2.20	(0.06)	1.12	3.59
G&A/Other	-	-	-	-	-	-	107.47	44.23	33.57	22.89	12.43	18.77	27.57
F&D Costs (1-Year)	-	-	-	-	-	-	36.71	50.61	82.41	56.58	63.20	67.40	63.20
Return on Capital	-	-	-	-	-	-	64.36	92.59	151.07	103.36	114.94	123.68	121.02
Income Taxes	-	-	-	-	-	-	21.45	30.86	50.36	34.45	38.31	41.23	40.34
Breakeven Oil Price	**-**	**-**	**-**	**-**	**-**	**-**	**319.21**	**287.81**	**365.77**	**252.66**	**248.88**	**279.94**	**290.32**
Quality Differential	-	-	-	-	-	-	6.45	13.86	(0.36)	9.96	14.50	8.03	8.88
Required Brent Price	**-**	**-**	**-**	**-**	**-**	**-**	**325.66**	**301.67**	**365.42**	**262.62**	**263.38**	**287.97**	**299.20**

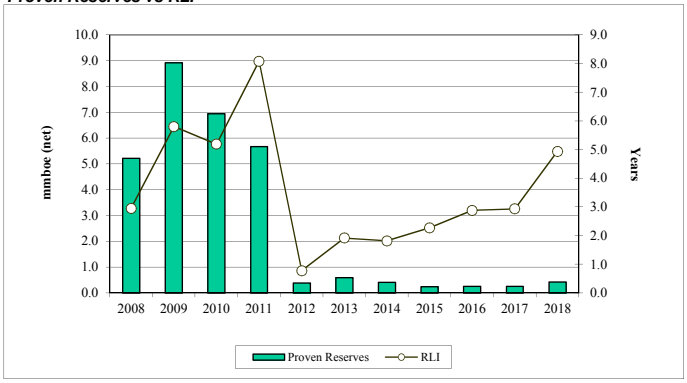
Source: BMO Capital Markets, Company Reports

Pan Orient Energy (POE - TSXV)

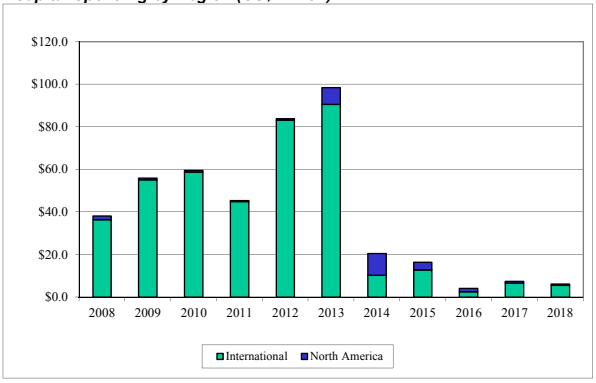
US$, net

- Pan Orient reported a loss from operations of $12.50/boe in 2018 versus a loss of $25.72/boe in 2017.
- The company reported ROCE of 0.3%, improving from a 2017 loss on capital employed of 5.0%.
- Pan Orient's one-year F&D costs were $24.31/boe. The company's F&D costs for PD reserves came in at $63.89/boe compared to $76.23/boe the previous year.
- The company's 2018 results imply a required Brent breakeven oil price of $87.70/boe on total proved reserves, while its PD costs suggest a breakeven of $143.97/boe.

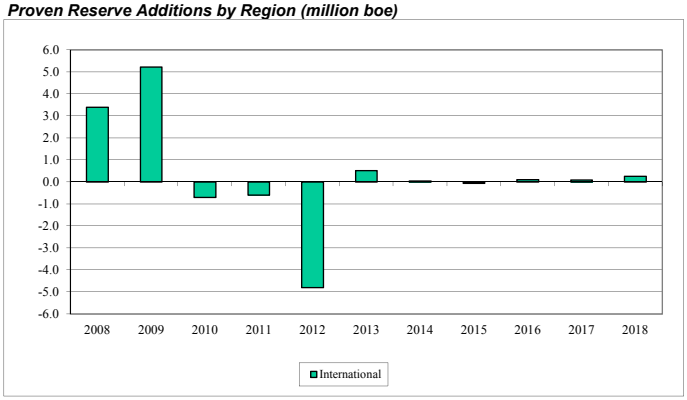
Proven Reserves vs RLI



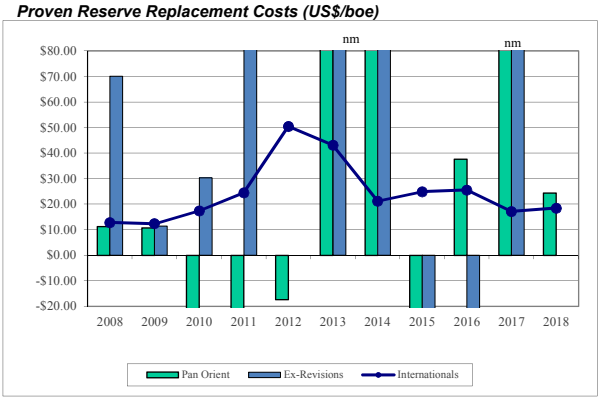
Capital Spending by Region (US$million)



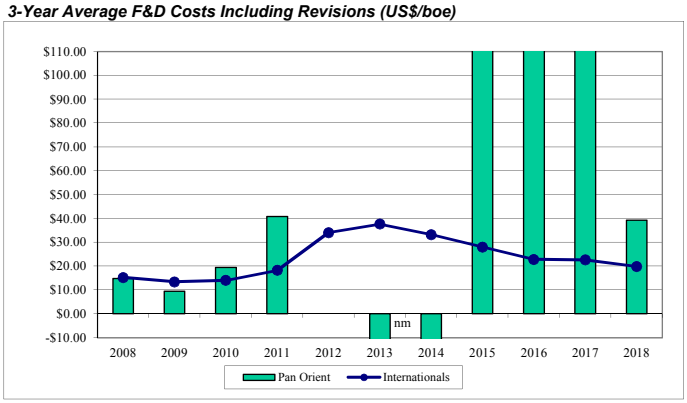
Proven Reserve Additions by Region (million boe)



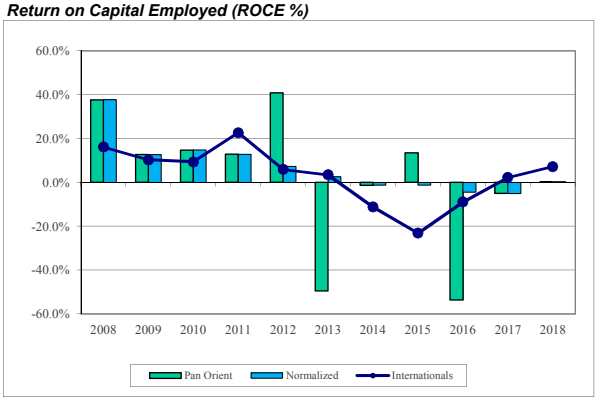
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

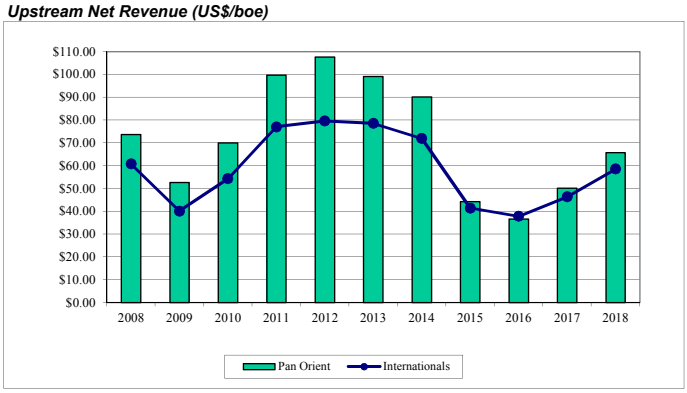
See pages F1 to F4 for analyst coverage.

Pan Orient Energy (POE - TSXV)

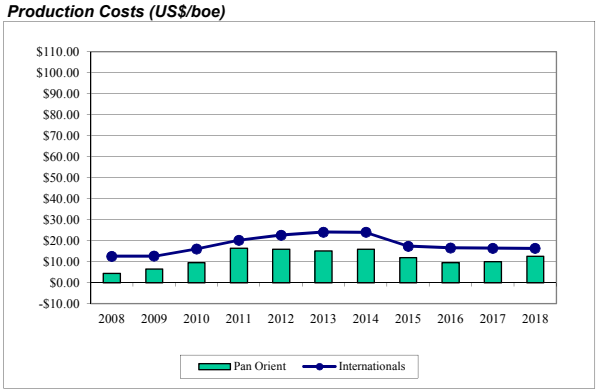
US$, net

International

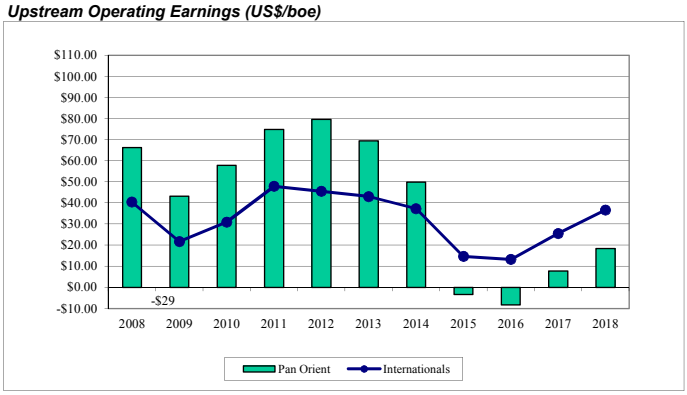
Upstream Net Revenue (US$/boe)



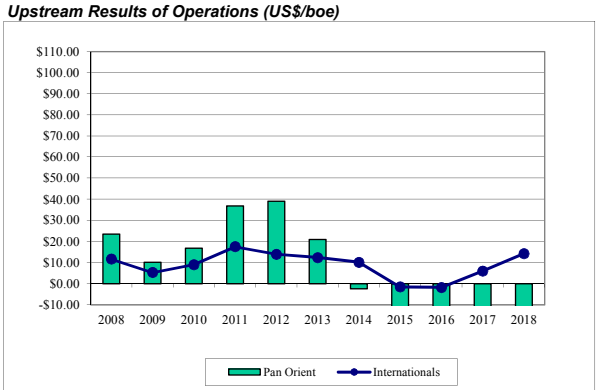
Production Costs (US$/boe)



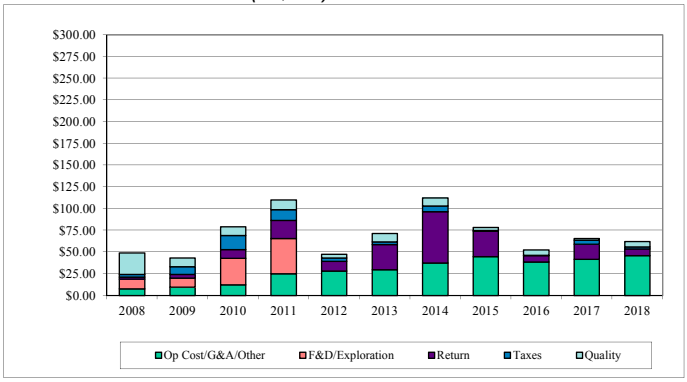
Upstream Operating Earnings (US$/boe)



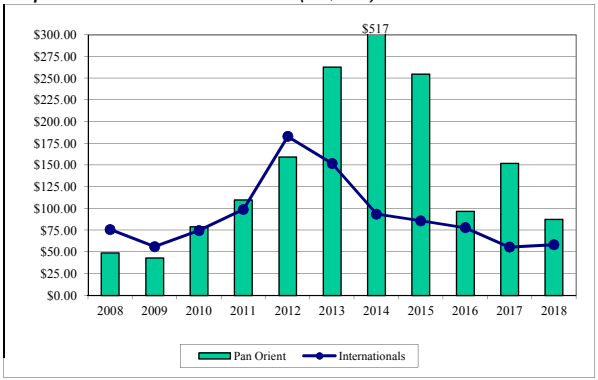
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Pan Orient Energy (POE - TSXV)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	129	81	94	70	52	30	20	5	3	4	6
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	1	0	0	0	1	1	0	0	0	0	0
Total Revenue and Other Income	130	81	94	70	53	31	21	5	3	5	6
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	8	10	13	12	8	5	4	1	1	1	1
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	1	0	1	0	0
General and Administrative	5	4	3	6	6	4	5	4	3	3	3
Depreciation, Depletion and Amortization	17	15	19	11	13	14	12	6	4	4	3
Interest, net	-	-	-	-	-	-	-	-	-	-	(0)
Other	28	8	7	3	(88)	108	0	(30)	61	2	(1)
Earnings Before Income Tax	72	44	52	38	115	(101)	(1)	23	(66)	(5)	0
Current Income Taxes	28	20	20	6	18	(14)	0	0	0	(0)	0
Future Income Taxes	14	11	12	8	13	4	1	0	(3)	(1)	0
Total Income Taxes	42	31	32	14	31	(10)	1	1	(3)	(1)	0
Minority Interest	0	0	0	0	0	-	0	0	0	0	0
Earnings From Continuing Operations	30	13	20	24	84	(91)	(2)	23	(63)	(4)	(0)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	30	13	20	24	84	(91)	(2)	23	(63)	(4)	(0)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	30	13	20	24	84	(91)	(2)	23	(63)	(4)	(0)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	30	13	20	24	84	(91)	(2)	23	(63)	(4)	(0)
Charges and Credits Not Impacting Cash	31	26	31	26	26	4	13	9	62	3	3
Other	(1)	7	7	(12)	(75)	109	1	(31)	(2)	(2)	(4)
Cash Flow From Operations	60	47	57	38	34	22	12	1	(3)	(3)	(1)
Change in Working Capital / Other	50	(42)	(5)	2	(0)	(0)	(1)	0	9	1	(1)
Net Cash From Operating Activities	111	5	52	40	34	21	11	1	7	(2)	(2)
Total Capital Expenditures	(38)	(56)	(60)	(75)	(78)	(98)	(20)	(13)	(3)	(6)	(3)
Acquisitions, net	(14)	-	-	(1)	162	4	2	44	0	0	0
Other	(3)	5	(4)	5	6	(14)	(7)	1	(2)	2	(1)
Net Cash From Investing Activities	(56)	(51)	(64)	(71)	90	(108)	(25)	32	(4)	(4)	(4)
Net Change in Debt	-	-	-	-	-	-	-	-	-	-	-
Net Change in Common Stock	0	1	4	51	0	0	-	(2)	-	0	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(1)	(0)	-	-	-	-	-	-	-	-	-
Other	-	-	-	(3)	(42)	-	-	-	(17)	-	-
Net Cash From Financing Activities	(1)	1	4	48	(42)	0	-	(2)	(17)	0	-
Effect of Exchange Rate on Cash	4	(3)	0	(2)	(1)	(2)	(0)	0	(0)	(2)	1
Net Increase/(Decrease) in Cash	59	(48)	(7)	16	81	(89)	(14)	31	(14)	(7)	(5)
Cash and Equivalents, Beginning of Year	35	87	43	37	52	130	38	21	50	36	29
Cash and Equivalents, End of Year	93	39	36	53	134	41	24	52	36	29	24

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pan Orient Energy (POE - TSXV)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	106	51	50	65	147	62	40	63	36	30	28
Net Property, Plant and Equipment	135	158	224	157	39	214	219	150	68	75	79
Other Assets	4	4	4	154	196	2	4	31	28	28	27
Total Assets	244	213	278	376	382	278	262	243	132	133	134
Total Current Liabilities	66	26	24	16	33	17	7	4	1	4	2
Long-term Debt	-	-	-	-	-	-	-	-	-	-	-
Deferred Income Taxes	21	31	48	62	19	22	24	8	6	5	5
Other Liabilities and Deferred Credits	2	2	4	12	4	3	4	1	2	1	1
Total Liabilities	89	59	76	89	56	43	34	13	8	11	9
Minority Interests	18	16	18	18	18	17	16	13	13	13	13
Common Shares	97	92	107	161	118	114	107	89	69	71	71
Contributed Surplus (Paid-in Capital)	6	7	12	16	18	21	20	20	20	20	21
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	30	42	66	90	177	81	73	86	20	17	17
Other / Comprehensive Income (Loss)	4	(4)	(1)	1	(4)	2	13	22	1	1	4
Total Shareholders' Equity	137	138	185	268	308	218	213	217	110	109	112
Total Liabilities and Shareholders' Equity	244	213	278	376	382	278	262	243	132	133	134

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$73.66	$52.65	$70.04	$99.67	$107.59	$99.16	$90.21	$44.20	$36.62	$50.16	$65.70	$50.41	$63.86
Production Costs	$4.46	$6.55	$9.57	$16.47	$16.00	$15.17	$15.92	$12.00	$9.59	$10.09	$12.53	$10.69	$12.86
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$2.86	$3.07	$6.64	$0.87	$1.54	$3.07	$3.00
DD&A	$9.79	$9.56	$13.96	$15.82	$26.25	$46.22	$52.68	$50.71	$41.29	$40.30	$35.02	$38.97	$46.25
G&A / Other	$2.93	$2.86	$2.57	$8.33	$11.89	$14.53	$21.48	$32.49	$28.75	$31.52	$33.27	$31.12	$27.84
Pre-Tax Results of Operations	$56.49	$33.68	$43.94	$59.05	$53.45	$23.24	-$2.74	-$54.07	-$49.65	-$32.61	-$16.67	-$33.44	-$26.09
Income Taxes	$33.06	$23.51	$27.15	$22.21	$14.31	$2.35	-$0.28	-$1.23	-$2.33	-$6.90	-$4.17	-$5.67	-$3.30
Results of Operations	$23.43	$10.17	$16.79	$36.84	$39.14	$20.89	-$2.46	-$52.85	-$47.32	-$25.72	-$12.50	-$27.78	-$22.79

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pan Orient Energy (POE - TSXV)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	-	-	-	-	-	-	-	-
Liquids Production (b/d)	4,849	4,210	3,666	1,924	1,358	843	624	289	246	241	238	242	328
Total Production (boe/d)	4,849	4,210	3,666	1,924	1,358	843	624	289	246	241	238	242	328
% Gas Production	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Production	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	-	-	-	-	-	-	-	-	-
Closing Oil Reserves (mmbbls)	5.2	8.9	6.9	5.7	0.4	0.6	0.4	0.2	0.3	0.3	0.4	0.3	0.3
Closing Total Proven Reserves (mmboe)	5.2	8.9	6.9	5.7	0.4	0.6	0.4	0.2	0.3	0.3	0.4	0.3	0.3
% Gas Reserves	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	3.0	5.8	5.2	8.1	0.8	1.9	1.8	2.3	2.9	2.9	4.9	3.6	3.0
Proven Reserve Additions:													
Gas Additions (bcf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil Additions (mmbbls)	3.4	5.2	-0.7	-0.6	-4.8	0.5	0.1	-0.1	0.1	0.1	0.3	0.5	0.4
Total Additions (mmboe)	3.4	5.2	-0.7	-0.6	-4.8	0.5	0.1	-0.1	0.1	0.1	0.3	0.5	0.4
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.5	4.9	2.0	0.1	0.4	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Net Acquisitions	0.0	0.0	0.0	0.0	-5.3	0.0	0.0	-0.2	0.0	0.0	0.0	0.0	-0.2
Revisions of Estimates	2.8	0.3	-2.7	-0.7	0.1	0.0	0.0	0.1	0.1	0.1	0.3	0.5	0.6
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	16.0%	93.6%	-278.9%	-22.1%	-8.6%	95.0%	63.6%	-63.8%	0.0%	0.0%	0.0%	0.0%	17.3%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	110.0%	0.0%	0.0%	305.5%	0.0%	0.0%	0.0%	0.0%	-47.4%
Revisions of Estimates	84.0%	6.4%	378.9%	122.1%	-1.4%	5.0%	36.4%	-141.7%	100.0%	100.0%	100.0%	100.0%	130.1%
Additions as % of Production:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	191.6%	340.4%	-52.5%	-85.0%	-968.5%	166.7%	22.3%	-64.1%	120.6%	99.7%	296.2%	171.2%	73.0%
Total	191.6%	340.4%	-52.5%	-85.0%	-968.5%	166.7%	22.3%	-64.1%	120.6%	99.7%	296.2%	171.2%	73.0%
Additions as % of Reserves:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	64.9%	58.6%	-10.1%	-10.5%	-1250.6%	87.0%	12.3%	-28.2%	41.9%	34.0%	59.9%	143.7%	136.3%
Total	64.9%	58.6%	-10.1%	-10.5%	-1250.6%	87.0%	12.3%	-28.2%	41.9%	34.0%	59.9%	143.7%	136.3%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$38	$56	$60	$45	$84	$98	$20	$24	$4	$8	$6	$18	$63
Net Acquisitions	$0	$0	$0	$0	$0	$0	$0	-$8	$0	$0	$0	$0	-$8
Total Expenditures	$38	$56	$60	$45	$84	$98	$20	$16	$4	$8	$6	$18	$55
Expenditures as % of Total (US$million):													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	146.5%	103.0%	101.4%	101.6%	101.8%	114.6%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-46.5%	-3.0%	-1.4%	-1.6%	-1.8%	-14.6%
Cashflow (US$million)	$60	$47	$57	$38	$34	$22	$12	$1	-$3	-$3	-$1	-$7	$6
Cashflow (US$/boe)	$34.06	$30.35	$42.82	$54.49	$69.60	$69.92	$51.68	$8.07	-$31.77	-$28.93	-$15.14	-$25.37	$9.89
Recycle Ratio	3.0x	2.8x	-0.5x	-0.7x	na	na	na	na	na	na	na	-0.6x	0.1x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$11.26	$10.69	-$84.81	-$75.94	$174.41	$191.73	$402.16	$173.24	$38.76	$86.64	$24.71	$40.08	$97.54
Net Acquisition Costs	na	na	na	na	$0.00	na	na	$36.99	na	na	na	na	$38.57
All Sources (incl. revisions)	$11.26	$10.69	-$84.81	-$75.94	-$17.46	$191.73	$402.16	-$243.03	$37.64	$85.47	$24.31	$39.35	$125.47
Exploration & Development (excl. revisions)	$70.20	$11.43	$30.41	$344.21	$201.88	$201.82	$632.81	$558.08	na	na	na	na	$830.55
Net Acquisition Costs	na	na	na	na	$0.00	na	na	$36.99	na	na	na	na	$38.57
All Sources (excl. revisions)	$70.20	$11.43	$30.41	$344.21	nm	$201.82	$632.81	-$100.54	na	na	na	na	-$417.36
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
Thailand	$10.76	$10.54	-$83.62	-$75.30	-$17.34	$176.47	$201.78	-$188.99	$23.84	$75.56	$21.61	$12.17	$20.18

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Pan Orient Energy (POE - TSXV)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	4.46	6.55	9.57	16.47	16.00	15.17	15.92	12.00	9.59	10.09	12.53	10.69	12.86
Exploration Expense	-	-	-	-	-	-	2.86	3.07	6.64	0.87	1.54	3.07	3.00
G&A/Other	2.93	2.86	2.57	8.33	11.89	14.53	21.48	32.49	28.75	31.52	33.27	31.12	27.84
F&D Costs (1-Year)	11.26	10.69	30.41	40.91	112.11	191.73	402.16	173.24	37.64	85.47	24.31	39.35	144.57
Return on Capital	2.29	3.90	10.08	20.66	11.21	28.73	59.01	29.67	7.57	17.36	7.68	9.48	29.62
Income Taxes	3.23	9.01	16.30	12.45	4.10	3.23	6.63	0.69	0.37	4.66	2.56	1.93	4.29
Breakeven Oil Price	**24.17**	**33.01**	**68.93**	**98.82**	**155.32**	**253.39**	**508.07**	**251.17**	**90.57**	**149.97**	**81.89**	**95.65**	**222.17**
Quality Differential	24.61	9.98	10.30	11.28	4.10	9.57	9.17	3.59	6.26	2.00	5.81	4.69	5.37
Required Brent Price	**48.78**	**42.99**	**79.23**	**110.10**	**159.42**	**262.95**	**517.24**	**254.76**	**96.83**	**151.97**	**87.70**	**100.34**	**227.54**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	4.46	6.55	9.57	16.47	16.00	15.17	15.92	13.45	10.09	10.60	12.53	10.69	12.86
Exploration Expense	-	-	-	-	-	-	2.86	3.44	6.99	0.91	1.54	3.07	3.00
G&A/Other	2.93	2.86	2.57	8.33	11.89	14.53	21.48	36.41	30.25	33.11	33.27	31.12	27.84
F&D Costs (1-Year)	11.26	10.69	19.41	40.91	112.11	191.73	402.16	173.24	37.64	85.47	24.31	39.35	144.57
Return on Capital	2.29	3.90	6.43	20.66	11.21	28.73	59.01	29.67	7.57	17.36	7.68	9.48	29.62
Income Taxes	3.23	9.01	10.40	12.45	4.10	3.23	6.63	0.69	0.37	4.66	2.56	1.93	4.29
Breakeven Oil Price	**24.17**	**33.01**	**48.37**	**98.82**	**155.32**	**253.39**	**508.07**	**256.91**	**92.92**	**152.11**	**81.89**	**95.65**	**222.17**
Quality Differential	24.61	9.98	10.30	11.28	4.10	9.57	9.17	4.03	6.59	2.10	5.81	4.83	5.54
Required Brent Price	**48.78**	**42.99**	**58.67**	**110.10**	**159.42**	**262.95**	**517.24**	**260.93**	**99.50**	**154.21**	**87.70**	**100.49**	**227.71**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	4.46	6.55	9.57	16.47	16.00	15.17	15.92	13.45	10.09	10.60	12.53	10.69	12.86
Exploration Expense	-	-	-	-	-	-	2.86	3.44	6.99	0.91	1.54	3.07	3.00
G&A/Other	2.93	2.86	2.57	8.33	11.89	14.53	21.48	36.41	30.25	33.11	33.27	31.12	27.84
F&D Costs (1-Year)	21.58	36.40	27.08	23.02	65.72	60.03	110.26	167.42	41.71	76.23	63.89	60.55	91.90
Return on Capital	4.39	13.35	8.98	11.62	6.57	8.98	16.17	28.68	8.38	15.49	20.20	14.63	18.75
Income Taxes	6.20	30.87	14.51	7.01	2.40	1.01	1.82	0.67	0.41	4.15	6.73	2.99	2.71
Breakeven Oil Price	**39.55**	**90.03**	**62.71**	**66.45**	**102.59**	**99.71**	**168.52**	**250.07**	**97.84**	**140.49**	**138.16**	**123.05**	**157.06**
Quality Differential	24.61	9.98	10.30	11.28	4.10	9.57	9.17	4.03	6.59	2.10	5.81	4.83	5.54
Required Brent Price	**64.16**	**100.01**	**73.01**	**77.73**	**106.69**	**109.28**	**177.69**	**254.10**	**104.42**	**142.59**	**143.97**	**127.88**	**162.60**

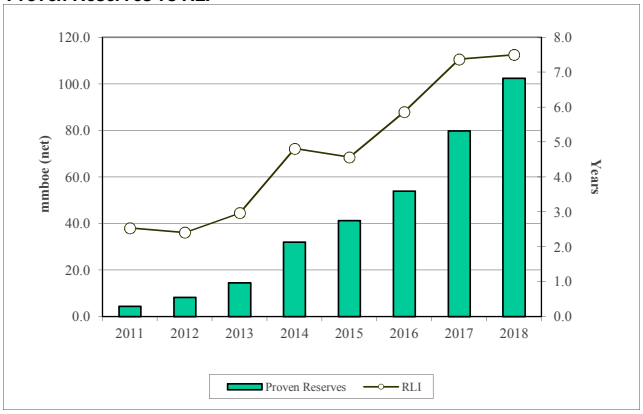
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

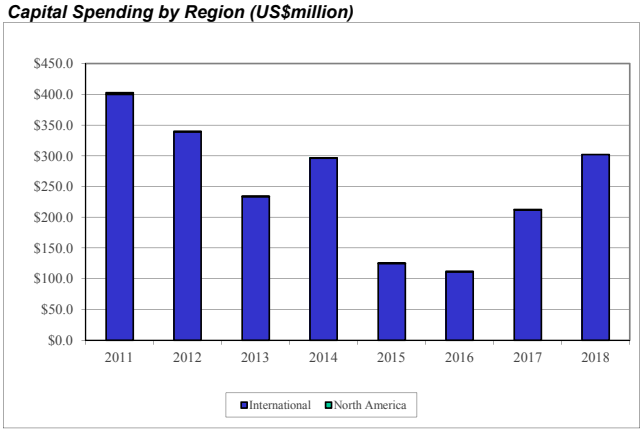
Parex Resources Inc. (PXT - TSX) US$, net

- Parex reported one of the strongest operational performances among its peers during 2018. The company yielded results of operations of $25.81/boe compared to $17.50/boe last year.
- The company reported ROCE of 46.3% in 2018 compared to 23.4% in 2017.
- One-year F&D costs increased to $8.50/boe from $5.68/boe in 2017. On a realized oil:gas price ratio basis, F&D costs were $8.59/boe versus $5.81/boe while the F&D costs for PD reserves came in at $10.69/boe compared to $8.84/boe last year.
- Parex's 2018 results imply a required Brent breakeven oil price of $45.92/boe on a realized oil:gas price ratio basis, while its PD costs imply a Brent breakeven oil price of $49.26/boe.

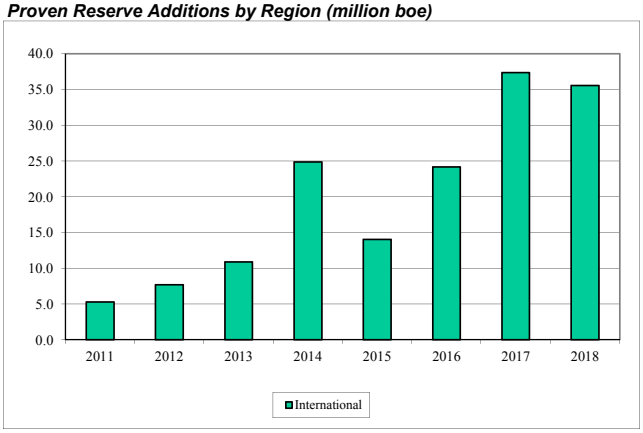
Proven Reserves vs RLI



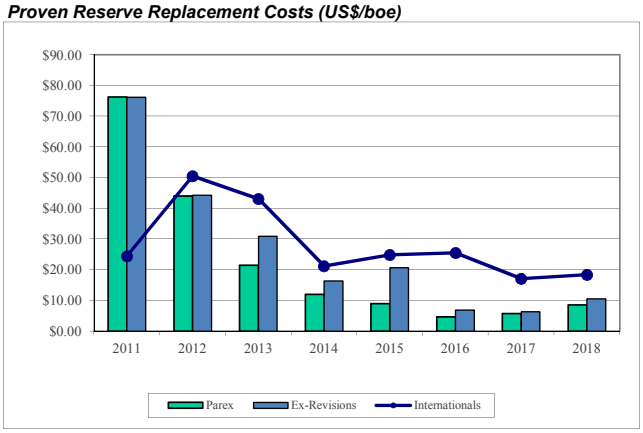
Capital Spending by Region (US$million)



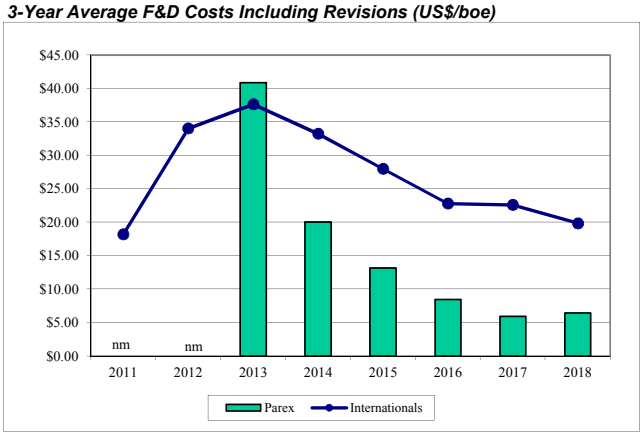
Proven Reserve Additions by Region (million boe)



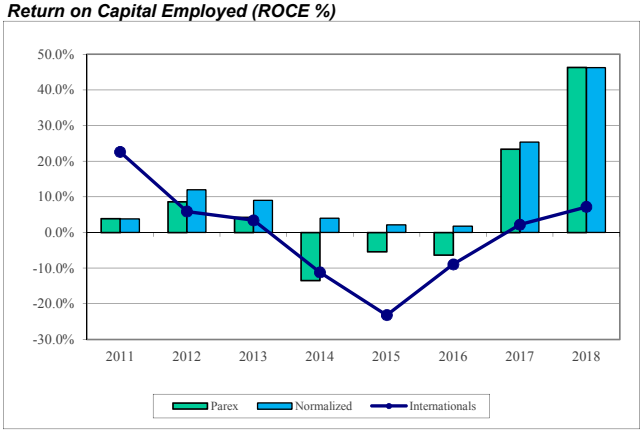
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

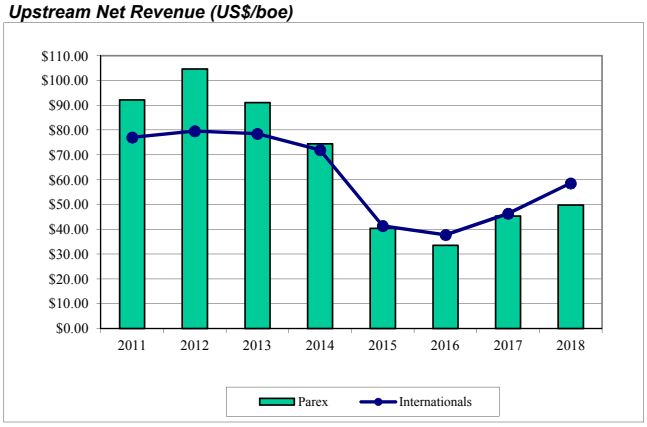
See pages F1 to F4 for analyst coverage.

Parex Resources Inc. (PXT - TSX)

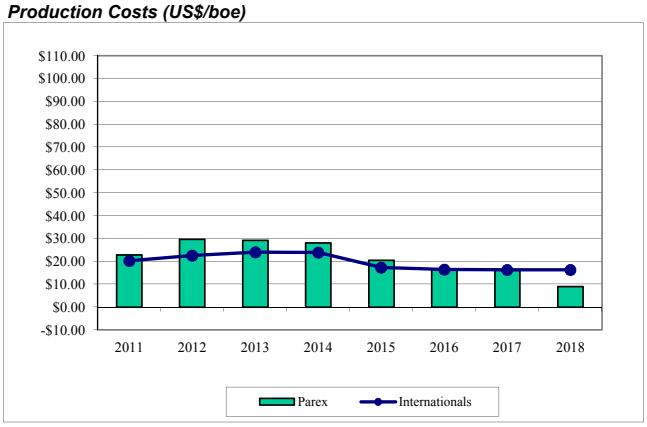
US$, net

International

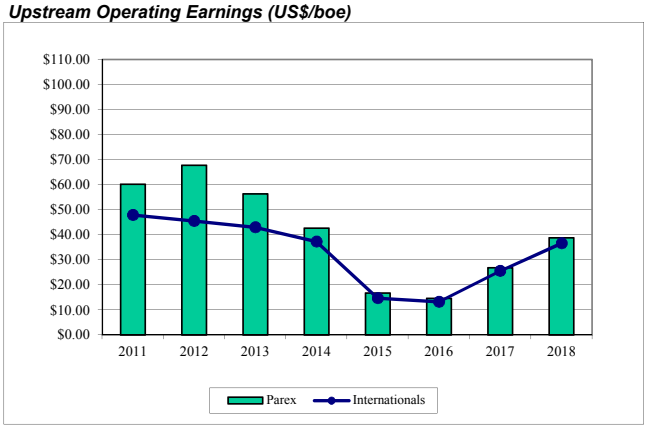
Upstream Net Revenue (US$/boe)



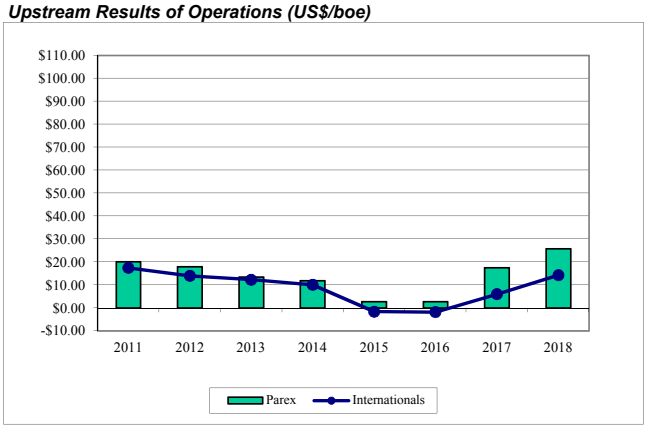
Production Costs (US$/boe)



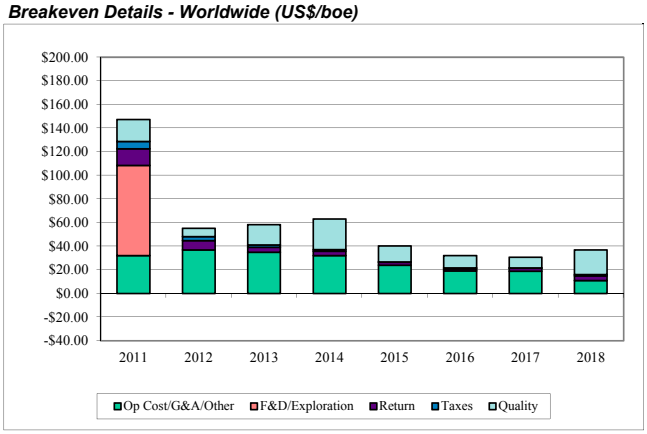
Upstream Operating Earnings (US$/boe)



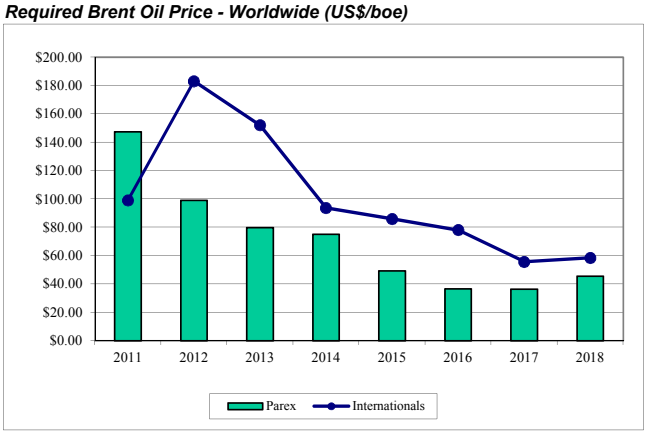
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Parex Resources Inc. (PXT - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	-	157	488	559	661	483	411	601	833
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	(1)	(3)	8	7	(11)	(1)	(1)
Total Revenue and Other Income	-	-	-	157	487	556	669	490	400	600	832
Crude Oil and Product Purchases	-	-	-	-	37	34	33	35	25	6	12
Production and Transportation Expenses	-	-	-	39	128	168	240	228	184	211	148
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	-	-	-	-	-	-	-	-
General and Administrative	-	-	-	16	31	32	33	37	31	34	33
Depreciation, Depletion and Amortization	-	-	-	54	181	214	218	152	116	99	103
Interest, net	-	-	-	(1)	1	16	38	9	9	2	12
Other	-	-	-	5	35	37	161	79	107	78	16
Earnings Before Income Tax	-	-	-	45	74	56	(54)	(50)	(71)	170	508
Current Income Taxes	-	-	-	0	43	46	52	48	6	44	246
Future Income Taxes	-	-	-	28	(9)	(3)	(20)	(54)	(30)	(29)	(141)
Total Income Taxes	-	-	-	29	34	43	33	(6)	(25)	15	105
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	-	16	40	13	(87)	(44)	(46)	155	403
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	(22)	(1)	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	-	-	-	16	40	13	(109)	(45)	(46)	155	403
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	-	16	40	13	(109)	(45)	(46)	155	403

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	-	16	40	13	(87)	(44)	(46)	155	403
Charges and Credits Not Impacting Cash	-	-	-	82	196	249	357	156	165	70	(37)
Other	-	-	-	0	6	8	24	18	26	55	17
Cash Flow From Operations	-	-	-	98	242	270	294	130	144	280	383
Change in Working Capital / Other	-	-	-	22	13	(61)	(45)	31	10	6	149
Net Cash From Operating Activities	-	-	-	120	255	209	249	161	154	285	532
Total Capital Expenditures	-	-	-	(150)	(268)	(221)	(296)	(125)	(108)	(207)	(302)
Acquisitions, net	-	-	-	(253)	(72)	(10)	(27)	-	(4)	(6)	-
Other	-	-	-	(33)	2	49	23	(55)	6	11	27
Net Cash From Investing Activities	-	-	-	(436)	(337)	(183)	(300)	(181)	(106)	(201)	(275)
Net Change in Debt	-	-	-	84	9	(1)	26	(35)	-	-	-
Net Change in Common Stock	-	-	-	225	1	0	-	114	-	(7)	(46)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	(12)	-	-	9	1	5	10	20
Net Cash From Financing Activities	-	-	-	297	10	(0)	35	80	5	2	(26)
Effect of Exchange Rate on Cash	-	-	-	(1)	1	(1)	(2)	(4)	1	(0)	(3)
Net Increase/(Decrease) in Cash	-	-	-	(20)	(72)	25	(17)	56	54	86	228
Cash and Equivalents, Beginning of Year	-	-	-	124	104	32	56	39	95	149	235
Cash and Equivalents, End of Year	-	-	-	104	32	56	39	95	149	235	463

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Parex Resources Inc. (PXT - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	-	162	148	192	187	189	201	319	617
Net Property, Plant and Equipment	-	-	-	437	612	602	774	696	627	675	849
Other Assets	-	-	-	61	61	61	73	73	91	128	261
Total Assets	-	-	-	660	821	855	1,034	958	919	1,122	1,727
Total Current Liabilities	-	-	-	69	161	168	183	112	107	156	399
Long-term Debt	-	-	-	60	75	75	35	-	-	-	-
Deferred Income Taxes	-	-	-	89	95	92	123	69	56	30	2
Other Liabilities and Deferred Credits	-	-	-	24	25	35	33	35	42	48	53
Total Liabilities	-	-	-	242	356	370	374	216	205	234	454
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	-	412	413	414	694	813	822	836	849
Contributed Surplus (Paid-in Capital)	-	-	-	9	16	22	26	33	42	52	55
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	-	-	-	(3)	37	49	(60)	(104)	(151)	(0)	369
Other / Comprehensive Income (Loss)	-	-	-	-	-	-	-	-	-	-	-
Total Shareholders' Equity	-	-	-	418	465	485	661	742	714	888	1,273
Total Liabilities and Shareholders' Equity	-	-	-	660	821	855	1,034	958	919	1,122	1,727
Return on Capital Employed (ROCE)	**-**	**-**	**-**	**3.9%**	**8.6%**	**4.3%**	**-13.5%**	**-5.4%**	**-6.3%**	**23.4%**	**46.3%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	-	$92.25	$104.64	$91.10	$74.42	$40.46	$33.63	$45.44	$49.81	$43.82	$47.56
Production Costs	-	-	-	$22.78	$29.65	$29.16	$28.05	$20.41	$16.33	$16.08	$8.96	$13.28	$16.68
Exploration	-	-	-	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00
DD&A	-	-	-	$31.55	$42.06	$37.21	$25.56	$13.63	$10.27	$7.54	$6.27	$7.78	$11.37
G&A / Other	-	-	-	$9.26	$7.20	$5.58	$3.81	$3.29	$2.73	$2.60	$2.03	$2.41	$2.77
Pre-Tax Results of Operations				$28.67	$25.74	$19.16	$17.01	$3.13	$4.30	$19.22	$32.55	$20.35	$16.75
Income Taxes	-	-	-	$8.60	$7.72	$5.75	$5.10	$0.37	$1.49	$1.72	$6.75	$4.36	$3.56
Results of Operations				$20.07	$18.02	$13.41	$11.90	$2.76	$2.81	$17.50	$25.81	$15.98	$13.19

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Parex Resources Inc. (PXT - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	-	-	-	-	-	0.8	1.3	1.8	3.4	2.2	1.5
Liquids Production (b/d)	-	-	-	4,838	9,499	13,385	18,265	24,620	24,958	29,350	36,815	30,375	26,802
Total Production (boe/d)	-	-	-	4,838	9,499	13,385	18,265	24,755	25,183	29,655	37,390	30,743	27,050
% Gas Production	-	-	-	0%	0%	0%	0%	1%	1%	1%	2%	1%	1%
% Oil Production	-	-	-	100%	100%	100%	100%	99%	99%	99%	98%	99%	99%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	-	-	-	-	-	4.7	3.3	9.1	16.1	9.5	6.7
Closing Oil Reserves (mmbbls)	-	-	-	4.5	8.4	14.5	32.1	40.4	53.4	78.3	99.7	77.1	60.8
Closing Total Proven Reserves (mmboe)	-	-	-	4.5	8.4	14.5	32.1	41.2	53.9	79.8	102.4	78.7	61.9
% Gas Reserves	-	-	-	0%	0%	0%	0%	2%	1%	2%	3%	2%	2%
% Oil Reserves	-	-	-	100%	100%	100%	100%	98%	99%	98%	97%	98%	98%
Proven Reserve Life Index	-	-	-	2.5	2.4	3.0	4.8	4.6	5.9	7.4	7.5	6.9	6.0
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	-	0.0	0.0	0.0	0.0	0.3	-0.9	6.4	8.3	13.8	14.2
Oil Additions (mmbbls)	-	-	-	5.3	7.7	10.9	24.9	14.0	24.3	36.3	34.2	94.8	133.7
Total Additions (mmboe)	-	-	-	5.3	7.7	10.9	24.9	14.0	24.2	37.4	35.6	97.1	136.0
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	-	3.8	7.7	7.0	14.0	6.1	16.0	32.7	28.8	77.5	97.5
Net Acquisitions	-	-	-	1.5	0.0	0.5	4.2	0.0	0.4	0.7	0.0	1.1	5.2
Revisions of Estimates	-	-	-	0.0	0.0	3.3	6.7	8.0	7.8	4.0	6.8	18.6	33.3
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	-	71.8%	99.4%	64.5%	56.2%	43.3%	66.3%	87.4%	81.0%	79.8%	71.7%
Net Acquisitions	-	-	-	28.2%	0.0%	4.9%	16.8%	0.0%	1.5%	1.8%	0.0%	1.1%	3.8%
Revisions of Estimates	-	-	-	0.0%	0.6%	30.6%	27.0%	56.7%	32.2%	10.8%	19.0%	19.1%	24.4%
Additions as % of Production:													
Gas	-	-	-	0.0%	0.0%	0.0%	0.0%	117.6%	-178.0%	958.0%	659.7%	571.4%	521.7%
Oil	-	-	-	299.1%	222.4%	222.8%	372.8%	155.6%	267.0%	338.9%	254.5%	285.1%	273.2%
Total	-	-	-	299.1%	222.4%	222.8%	372.8%	155.3%	263.0%	345.2%	260.7%	288.5%	275.5%
Additions as % of Reserves:													
Gas	-	-	-	0.0%	0.0%	0.0%	0.0%	7.4%	-26.2%	70.5%	51.6%	145.4%	212.9%
Oil	-	-	-	117.9%	92.3%	75.0%	77.4%	34.6%	45.6%	46.4%	34.3%	123.0%	220.0%
Total	-	-	-	117.9%	92.3%	75.0%	77.4%	34.0%	44.8%	46.9%	34.8%	123.4%	219.8%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	-	$9	$23	$11	$11	$3	$13	$1	$9	$22	$37
Exploration & Development	-	-	-	$137	$208	$206	$271	$107	$87	$202	$276	$566	$944
Net Acquisitions	-	-	-	$257	$109	$17	$15	$15	$12	$9	$18	$39	$69
Total Expenditures	-	-	-	$403	$339	$234	$297	$125	$112	$212	$302	$626	$1,049
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	-	2.1%	6.7%	4.9%	3.8%	2.5%	11.4%	0.3%	2.9%	3.5%	3.5%
Exploration & Development	-	-	-	34.0%	61.2%	87.9%	91.3%	85.3%	78.1%	95.3%	91.3%	90.3%	90.0%
Net Acquisitions	-	-	-	63.8%	32.1%	7.2%	4.9%	12.2%	10.5%	4.4%	5.8%	6.2%	6.5%
Cashflow (US$million)	-	-	-	$98	$242	$270	$294	$130	$144	$280	$383	$807	$1,231
Cashflow (US$/boe)	-	-	-	$55.45	$69.67	$55.25	$44.08	$14.42	$15.68	$25.83	$28.06	$23.96	$24.93
Recycle Ratio	-	-	-	0.7x	1.6x	2.6x	3.7x	1.6x	3.4x	4.5x	3.3x	3.7x	3.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-	$38.41	$29.88	$20.98	$13.65	$7.85	$4.20	$5.53	$8.00	$6.12	$7.49
Net Acquisition Costs	-	-	-	$172.28	na	$31.35	$3.49	na	$31.72	$13.79	na	$36.77	$13.14
All Sources (incl. revisions)	-	-	-	$76.22	$44.03	$21.49	$11.94	$8.94	$4.62	$5.68	$8.50	$6.45	$7.71
Exploration & Development (excl. revisions)	-	-	-	$38.41	$30.06	$30.92	$20.20	$18.14	$6.24	$6.21	$9.89	$7.58	$10.05
Net Acquisition Costs	-	-	-	$172.28	na	$31.35	$3.49	na	$31.72	$13.79	na	$36.77	$13.14
All Sources (excl. revisions)	-	-	-	$76.22	$44.30	$30.95	$16.36	$20.67	$6.81	$6.37	$10.50	$7.98	$10.21
Geographically Segmented Costs													
North America	-	-	-	na	na	na	na	na	na	na	na	na	na
Latin America	-	-	-	$76.22	$44.03	$21.49	$11.94	$8.94	$4.62	$5.68	$8.50	$6.45	$7.71

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Parex Resources Inc. (PXT - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	22.78	29.65	29.16	28.05	20.41	16.33	16.08	8.96	13.28	16.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	9.26	7.20	5.58	3.81	3.29	2.73	2.60	2.03	2.41	2.77
F&D Costs (1-Year)	-	-	-	76.22	44.03	21.49	11.94	8.94	4.62	5.68	8.50	6.45	7.71
Return on Capital	-	-	-	14.17	7.88	4.39	3.68	2.65	1.71	2.62	3.95	2.79	2.92
Income Taxes	-	-	-	6.07	3.38	1.88	1.58	0.36	0.91	0.26	1.03	0.76	0.79
Breakeven Oil Price	**-**	**-**	**-**	**128.49**	**92.13**	**62.49**	**49.06**	**35.65**	**26.30**	**27.25**	**24.47**	**25.69**	**30.87**
Quality Differential	-	-	-	18.71	6.89	17.16	25.90	13.54	10.28	9.06	20.93	13.43	15.94
Required Brent Price	**-**	**-**	**-**	**147.20**	**99.02**	**79.65**	**74.96**	**49.19**	**36.58**	**36.31**	**45.40**	**39.11**	**46.81**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	22.78	29.65	29.16	28.05	20.41	16.33	16.08	8.96	13.28	16.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	9.26	7.20	5.58	3.81	3.29	2.73	2.60	2.03	2.41	2.77
F&D Costs (1-Year)	-	-	-	76.22	44.03	21.49	11.94	8.96	4.60	5.81	8.59	6.53	7.78
Return on Capital	-	-	-	14.17	7.88	4.39	3.68	2.64	1.70	2.66	4.03	2.81	2.93
Income Taxes	-	-	-	6.07	3.38	1.88	1.58	0.36	0.90	0.26	1.05	0.77	0.79
Breakeven Oil Price	**-**	**-**	**-**	**128.49**	**92.13**	**62.49**	**49.06**	**35.65**	**26.27**	**27.42**	**24.66**	**25.79**	**30.95**
Quality Differential	-	-	-	18.71	7.12	17.38	26.17	13.53	10.74	9.63	21.26	13.88	16.27
Required Brent Price	**-**	**-**	**-**	**147.20**	**99.24**	**79.86**	**75.23**	**49.18**	**37.01**	**37.05**	**45.92**	**39.67**	**47.21**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	-	-	-	22.78	29.65	29.16	28.05	20.41	16.33	16.08	8.96	13.28	16.68
Exploration Expense	-	-	-	-	-	-	-	-	-	-	-	-	-
G&A/Other	-	-	-	9.26	7.20	5.58	3.81	3.29	2.73	2.60	2.03	2.41	2.77
F&D Costs (1-Year)	-	-	-	84.96	62.30	31.75	16.91	8.73	7.37	8.84	10.69	9.28	10.51
Return on Capital	-	-	-	15.77	11.10	6.51	5.24	2.57	2.73	4.05	5.01	3.97	3.93
Income Taxes	-	-	-	6.76	4.76	2.79	2.25	0.35	1.45	0.40	1.31	1.08	1.06
Breakeven Oil Price	**-**	**-**	**-**	**139.53**	**115.01**	**75.78**	**56.25**	**35.34**	**30.61**	**31.98**	**27.99**	**30.02**	**34.95**
Quality Differential	-	-	-	18.71	7.12	17.38	26.17	13.53	10.74	9.63	21.26	13.88	16.27
Required Brent Price	**-**	**-**	**-**	**158.23**	**122.13**	**93.16**	**82.42**	**48.87**	**41.35**	**41.61**	**49.26**	**43.90**	**51.21**

Source: BMO Capital Markets, Company Reports

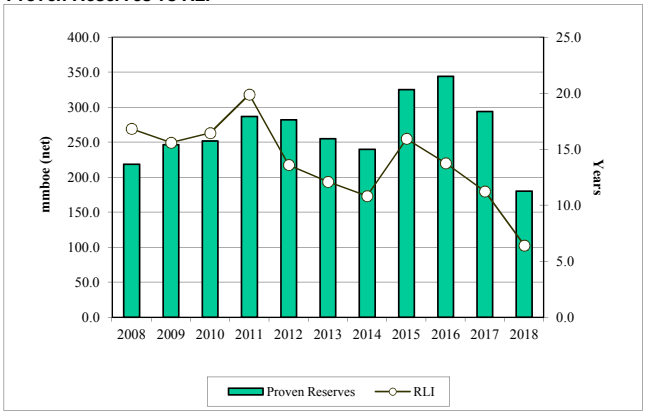
See pages F1 to F4 for analyst coverage.

Premier Oil (PMO - LSE) US$, net

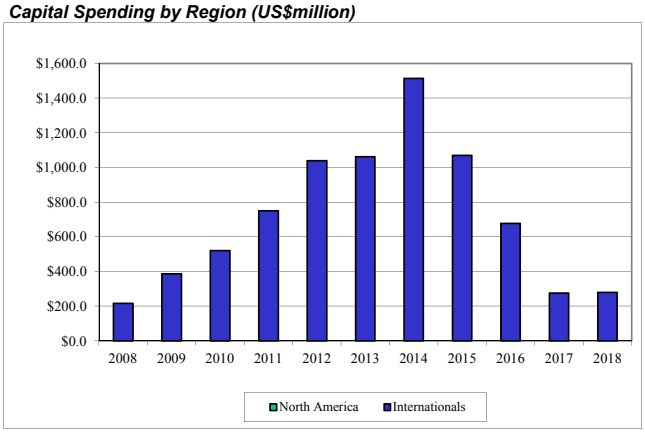
- Premier's results from operations improved to $12.53/boe compared to $5.25/boe in 2017.
- The company reported ROCE of 10.2% in 2018 relative -2.0% in 2017
- 2018 F&D costs were non-meaningful due to negative revisions and dispositions. Hence, we have considered a three-year average F&D cost, which was recorded at $15.80/boe in 2018. On a realized oil:gas price ratio basis, 3-year F&D costs came in at $18.53/boe.
- The company's 2018 results imply a required Brent breakeven oil price of $49.40/boe on a realized oil:gas price ratio basis.

Notes: Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

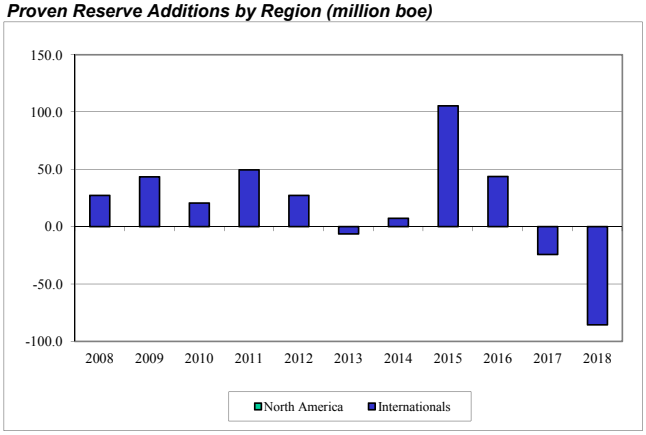
Proven Reserves vs RLI



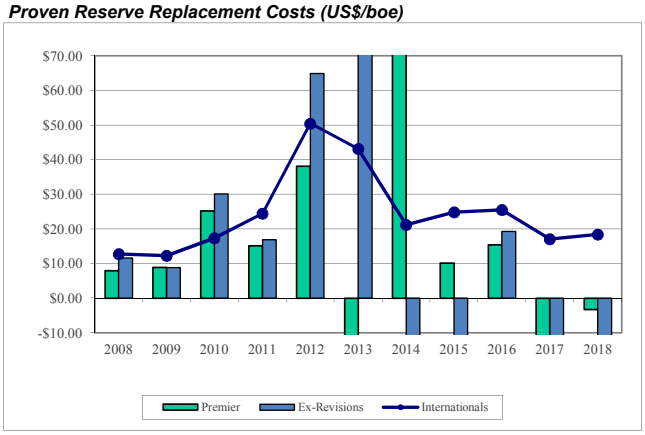
Capital Spending by Region (US$million)



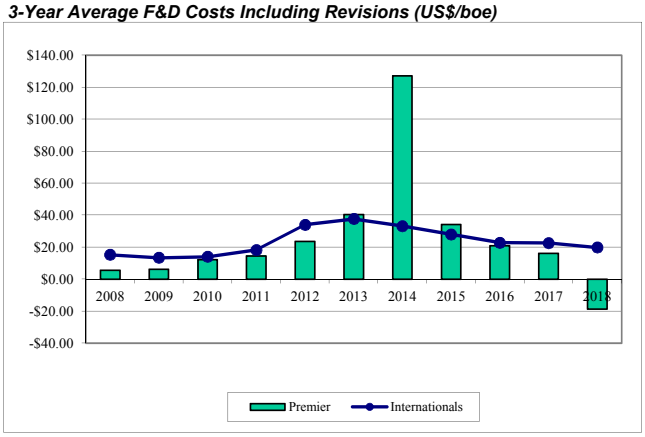
Proven Reserve Additions by Region (million boe)



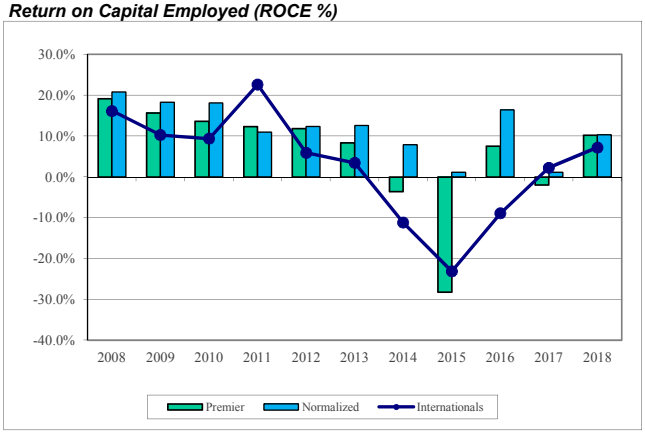
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



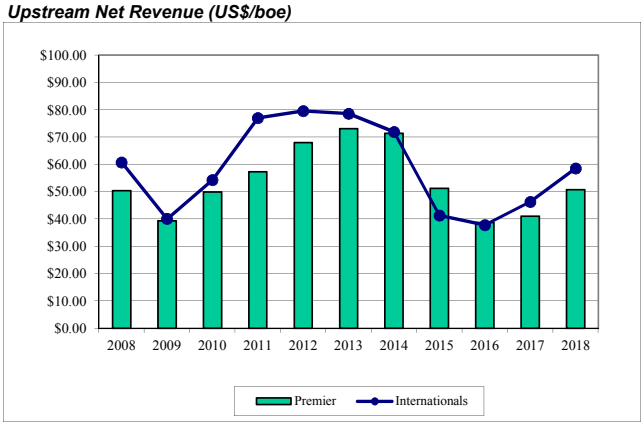
Source: BMO Capital Markets, Company Reports

Premier Oil (PMO - LSE)

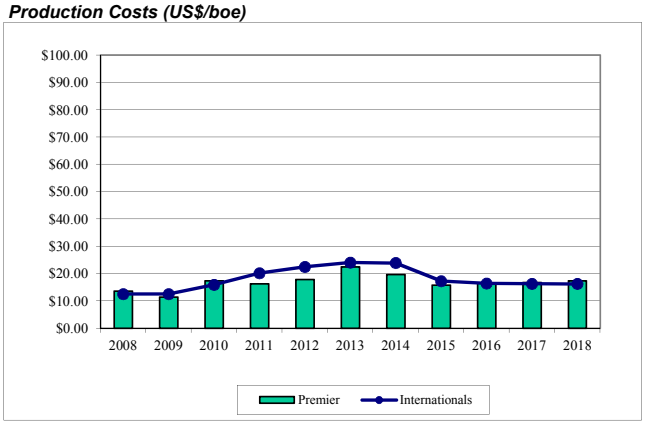
US$, net

International

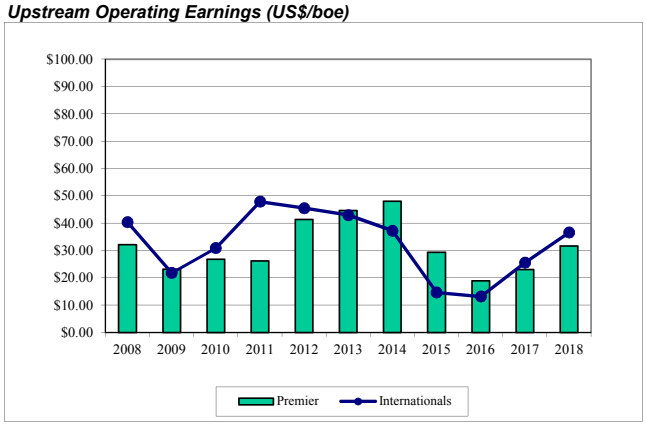
Upstream Net Revenue (US$/boe)



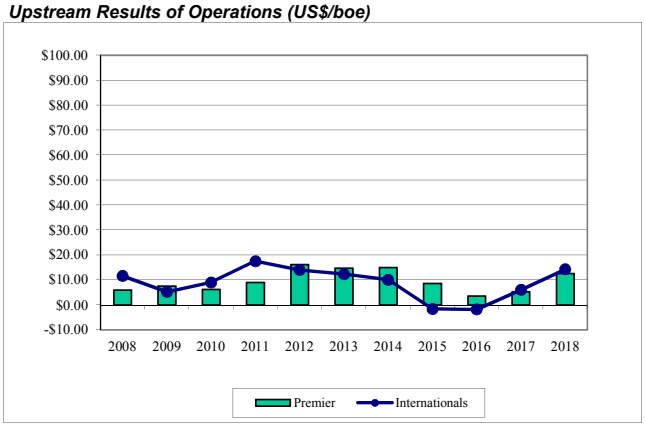
Production Costs (US$/boe)



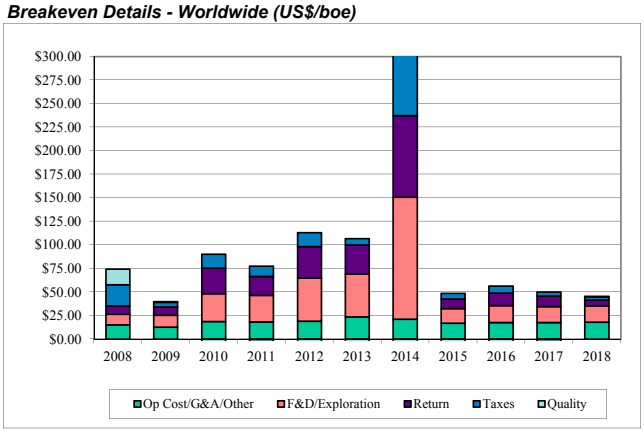
Upstream Operating Earnings (US$/boe)



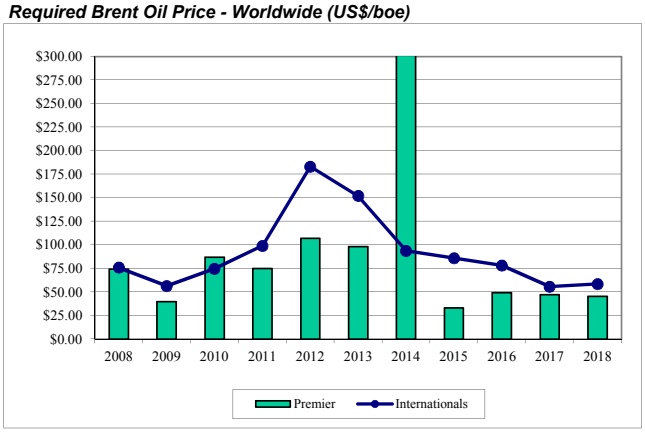
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Premier Oil (PMO - LSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	655	621	764	827	1,409	1,501	1,584	1,045	970	1,074	1,424
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	39	-	-	-	-	-
Total Revenue and Other Income	655	621	764	827	1,409	1,540	1,584	1,045	970	1,074	1,424
Costs and Expenses:											
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	12	6	10
Production and Transportation Expenses	177	181	267	235	370	472	436	324	413	438	488
Marketing Expenses	43	57	68	188	158	106	59	109	58	17	35
Exploration / Dry Hole Costs	17	18	18	26	24	20	25	14	24	17	14
General and Administrative	141	181	264	180	373	563	456	327	340	416	358
Depreciation, Depletion and Amortization	-	-	-	-	-	-	-	-	-	-	-
Interest, net	12	29	66	68	108	65	138	120	247	329	401
Other	16	20	19	23	29	27	854	981	266	218	(39)
Earnings Before Income Tax	249	135	62	108	348	287	(384)	(830)	(391)	(366)	158
Income Taxes:											
Current Income Taxes	179	(33)	(29)	(30)	108	189	220	99	42	75	91
Future Income Taxes	-	-	-	-	-	(138)	(394)	143	(564)	(171)	(37)
Total Income Taxes	179	(33)	(29)	(30)	108	51	(174)	241	(522)	(96)	53
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	70	169	91	137	240	235	(210)	(1,071)	131	(270)	105
Discontinued Operations/Extraordinary Items	28	(56)	39	34	12	(1)	-	(33)	(9)	16	28
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	98	113	130	171	252	234	(210)	(1,104)	123	(254)	133
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	98	113	130	171	252	234	(210)	(1,104)	123	(254)	133

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	70	169	91	137	240	235	(210)	(1,071)	131	(270)	105
Charges and Credits Not Impacting Cash	184	238	332	368	531	669	1,299	1,446	945	416	358
Other	45	80	98	100	118	70	(28)	437	(638)	376	279
Cash Flow From Operations	299	487	521	604	888	974	1,061	812	438	522	742
Change in Working Capital / Other	54	(139)	(85)	(119)	(109)	(171)	(137)	(3)	(7)	(26)	(19)
Net Cash From Operating Activities	352	348	436	486	779	803	924	810	431	496	723
Total Capital Expenditures	(217)	(303)	(514)	(661)	(772)	(878)	(1,196)	(992)	(678)	(276)	(280)
Acquisitions, net	(13)	(658)	13	(90)	-	-	-	-	(144)	-	-
Other	-	(6)	50	(23)	(211)	(125)	(188)	142	(37)	160	(17)
Net Cash From Investing Activities	(230)	(967)	(451)	(773)	(982)	(1,003)	(1,383)	(851)	(859)	(116)	(297)
Net Change in Debt	(53)	353	132	349	453	587	555	266	435	(41)	(310)
Net Change in Common Stock	(65)	238	(8)	3	(89)	(12)	(99)	(1)	0	1	12
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	(40)	(44)	-	-	-	-
Other	(11)	(47)	(59)	(57)	(281)	(78)	(120)	(101)	(153)	(224)	(229)
Net Cash From Financing Activities	(129)	544	65	295	83	456	292	164	283	(264)	(527)
Effect of Exchange Rate on Cash	(2)	2	(1)	2	(2)	6	10	(13)	(0)	(7)	(20)
Net Increase/(Decrease) in Cash	(8)	(73)	49	9	(122)	262	(157)	110	(145)	109	(121)
Cash and Equivalents, Beginning of Year	332	324	251	300	309	187	449	292	401	256	365
Cash and Equivalents, End of Year	324	251	300	309	187	449	292	401	256	365	245

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Premier Oil (PMO - LSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	520	732	697	815	670	1,019	1,117	815	628	831	722
Net Property, Plant and Equipment	925	1,618	2,044	2,573	3,351	3,587	3,256	3,361	3,738	2,381	2,246
Other Assets	6	191	285	501	823	1,209	1,715	1,130	1,694	2,925	2,647
Total Assets	1,451	2,540	3,026	3,889	4,844	5,814	6,088	5,306	6,060	6,137	5,615
Total Current Liabilities	277	466	503	910	678	656	993	594	826	824	496
Long-term Debt	203	547	685	853	1,284	1,889	2,086	2,615	2,731	2,973	2,552
Deferred Income Taxes	189	180	184	219	297	307	254	193	193	164	139
Other Liabilities and Deferred Credits	184	375	524	584	632	838	882	1,169	1,502	1,560	1,401
Total Liabilities	852	1,569	1,896	2,566	2,890	3,690	4,215	4,571	5,251	5,520	4,589
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	74	97	98	99	111	111	107	107	107	109	154
Contributed Surplus (Paid-in Capital)	10	224	255	275	275	275	275	275	275	285	492
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	473	603	739	923	1,150	1,342	1,142	46	122	250	324
Other / Comprehensive Income (Loss)	43	47	38	27	418	397	348	306	305	(27)	56
Total Shareholders' Equity	599	971	1,130	1,324	1,954	2,124	1,872	735	809	617	1,026
Total Liabilities and Shareholders' Equity	1,451	2,540	3,026	3,889	4,844	5,814	6,088	5,306	6,060	6,137	5,615
Return on Capital Employed (ROCE)	**19.1%**	**15.6%**	**13.6%**	**12.3%**	**11.8%**	**8.3%**	**-3.6%**	**-28.3%**	**7.5%**	**-2.0%**	**10.2%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$50.40	$39.31	$49.91	$57.28	$67.94	$73.14	$71.45	$51.23	$38.76	$41.11	$50.77	$44.75	$51.81
Production Costs	$13.62	$11.43	$17.44	$16.27	$17.83	$22.44	$19.67	$15.86	$16.50	$16.79	$17.38	$16.91	$17.24
Exploration	$3.30	$3.61	$4.46	$12.99	$7.61	$5.05	$2.64	$5.34	$2.33	$0.65	$1.25	$1.40	$2.28
DD&A	$10.82	$11.44	$17.23	$12.48	$17.98	$26.72	$20.59	$16.01	$13.60	$15.91	$12.78	$14.07	$15.58
G&A / Other	$1.32	$1.16	$1.20	$1.79	$1.17	$0.96	$1.15	$0.71	$0.96	$0.64	$0.50	$0.69	$0.78
Pre-tax Results of Operations	$21.35	$11.67	$9.58	$13.76	$23.36	$17.98	$27.40	$13.30	$5.36	$7.11	$18.87	$11.68	$15.93
Income Taxes	$15.35	$4.08	$3.35	$4.82	$7.25	$3.22	$12.39	$4.66	$1.88	$1.87	$6.33	$3.69	$5.58
Results of Operations	$5.99	$7.59	$6.23	$8.94	$16.11	$14.76	$15.01	$8.65	$3.48	$5.25	$12.53	$7.99	$10.35

Source: BMO Capital Markets, Company Reports

Premier Oil (PMO - LSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	147.9	156.2	156.2	153.4	179.7	176.7	175.3	156.2	184.4	191.0	173.3	182.9	176.0
Liquids Production (b/d)	10,959	17,260	15,890	13,973	26,849	28,219	31,507	29,863	37,808	39,726	47,973	41,836	37,375
Total Production (boe/d)	35,616	43,288	41,918	39,543	56,804	57,671	60,731	55,890	68,539	71,553	76,854	72,315	66,713
% Gas Production	69%	60%	62%	65%	53%	51%	48%	47%	45%	44%	38%	42%	44%
% Oil Production	31%	40%	38%	35%	47%	49%	52%	53%	55%	56%	62%	58%	56%
Proven Reserves:													
Closing Gas Reserves (bcf)	1,016.0	994.0	960.0	824.0	806.5	678.4	571.8	436.9	533.1	465.3	561.1	519.8	513.6
Closing Oil Reserves (mmbbls)	49.5	80.9	92.0	149.8	147.7	141.9	144.9	252.4	255.3	216.3	86.8	186.1	191.1
Closing Total Proven Reserves (mmboe)	218.8	246.6	252.0	287.1	282.1	255.0	240.2	325.2	344.2	293.9	180.3	272.8	276.7
% Gas Reserves	77%	67%	63%	48%	48%	44%	40%	22%	26%	26%	52%	32%	31%
% Oil Reserves	23%	33%	37%	52%	52%	56%	60%	78%	74%	74%	48%	68%	69%
Proven Reserve Life Index	16.8	15.6	16.5	19.9	13.6	12.1	10.8	15.9	13.8	11.3	6.4	10.5	11.6
Proven Reserve Additions:													
Gas Additions (bcf)	72.0	35.0	23.0	-80.0	51.3	-63.5	-42.6	-78.0	163.5	1.9	158.9	324.3	203.7
Oil Additions (mmbbls)	15.4	37.7	16.9	62.9	18.7	4.4	14.5	118.4	16.7	-24.5	-111.9	-119.7	13.2
Total Additions (mmboe)	27.4	43.5	20.7	49.6	27.3	-6.2	7.4	105.4	44.0	-24.2	-85.4	-65.7	47.1
Addition Components (mmboe):													
Extensions, Discoveries and Additions	2.1	1.0	18.6	13.2	5.0	0.1	0.6	0.0	0.0	0.0	0.0	0.0	0.6
Net Acquisitions	16.6	42.6	-1.3	31.1	11.1	1.4	-9.1	-33.9	35.1	-11.5	-9.0	14.6	-28.4
Revisions of Estimates	8.7	-0.1	3.4	5.2	11.2	-7.7	16.0	139.3	8.8	-12.7	-76.5	-80.3	75.0
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	7.5%	2.3%	89.7%	26.6%	18.2%	-0.8%	7.4%	0.0%	0.0%	0.0%	0.0%	0.0%	1.2%
Net Acquisitions	60.7%	97.9%	-6.3%	62.8%	40.6%	-22.9%	-123.4%	-32.2%	79.9%	47.7%	10.5%	-22.3%	-60.3%
Revisions of Estimates	31.8%	-0.2%	16.6%	10.6%	41.2%	123.7%	216.0%	132.2%	20.1%	52.3%	89.5%	122.3%	159.1%
Additions as % of Production:													
Gas	133.3%	61.4%	40.4%	-142.9%	78.2%	-98.4%	-66.6%	-136.8%	242.9%	2.7%	251.3%	162.0%	79.3%
Oil	385.0%	598.4%	291.4%	1233.3%	190.8%	42.7%	126.1%	1086.2%	121.0%	-169.0%	-639.2%	-261.3%	24.2%
Total	210.8%	275.5%	135.5%	343.4%	131.4%	-29.4%	33.4%	516.7%	175.7%	-92.6%	-304.6%	-82.9%	48.4%
Additions as % of Reserves:													
Gas	7.1%	3.5%	2.4%	-9.7%	6.4%	-9.4%	-7.5%	-17.9%	30.7%	0.4%	28.3%	62.4%	39.7%
Oil	31.1%	46.6%	18.4%	42.0%	12.7%	3.1%	10.0%	46.9%	6.5%	-11.3%	-129.0%	-64.3%	6.9%
Total	12.5%	17.7%	8.2%	17.3%	9.7%	-2.4%	3.1%	32.4%	12.8%	-8.2%	-47.4%	-24.1%	17.0%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$217	$387	$522	$750	$1,039	$1,064	$1,514	$1,070	$678	$276	$280	$1,234	$3,818
Net Acquisitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$217	$387	$522	$750	$1,039	$1,064	$1,514	$1,070	$678	$276	$280	$1,234	$3,818
Expenditures as % of Total (US$million):													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$299	$487	$521	$604	$888	$974	$1,061	$812	$438	$522	$742	$1,702	$3,575
Cashflow (US$/boe)	$22.98	$30.80	$34.07	$41.88	$42.82	$46.25	$47.86	$39.81	$17.51	$19.98	$26.45	$21.49	$29.36
Recycle Ratio	2.9x	3.5x	1.4x	2.8x	1.1x	-0.3x	0.2x	3.9x	1.1x	-1.8x	-8.1x	-1.1x	0.4x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$20.18	$414.64	$23.67	$40.71	$64.21	-$139.99	$91.57	$7.68	$76.77	-$21.79	-$3.66	-$15.36	$50.54
Net Acquisition Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	nm	nm
All Sources (incl. revisions)	$7.93	$8.89	$25.15	$15.14	$38.13	-$172.06	$204.58	$10.15	$15.43	-$11.40	-$3.28	-$18.78	$80.99
Exploration & Development (excl. revisions)	$105.15	$387.00	$28.04	$56.85	$209.92	$21,278.00	$2,752.55	nm	nm	nm	nm	nm	$6,940.91
Net Acquisition Costs	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	$0.00	nm	nm
All Sources (excl. revisions)	$11.62	$8.88	$30.14	$16.93	$64.88	$725.39	-$176.38	-$31.57	$19.31	-$23.90	-$31.26	$84.30	-$137.07
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
International	$7.93	$8.89	$25.15	$15.14	$38.13	-$172.06	$204.58	$10.15	$15.43	-$11.40	-$3.28	-$27.30	$34.50

Note: Reserve estimates reported before royalties
Source: BMO Capital Markets, Company Reports

Premier Oil (PMO - LSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	13.62	11.43	17.44	16.27	17.83	22.44	19.67	15.86	16.50	16.79	17.38	16.91	17.24
Exploration Expense	3.30	3.61	4.46	12.99	7.61	5.05	2.64	5.34	2.33	0.65	1.25	1.40	2.28
G&A/Other	1.32	1.16	1.20	1.79	1.17	0.96	1.15	0.71	0.96	0.64	0.50	0.69	0.78
F&D Costs (1-Year)	7.93	8.89	25.15	15.14	38.13	40.40	127.06	10.15	15.43	16.17	15.80	15.80	36.92
Return on Capital	8.77	9.03	27.07	20.27	33.29	31.07	86.70	10.55	13.58	11.49	6.40	10.42	27.18
Income Taxes	22.47	4.86	14.57	10.91	14.99	6.79	71.61	5.68	7.31	4.09	3.23	4.81	14.64
Breakeven Oil Price	**57.42**	**38.98**	**89.89**	**77.36**	**113.01**	**106.70**	**308.83**	**48.29**	**56.12**	**49.83**	**44.56**	**50.03**	**99.04**
Quality Differential	16.79	0.69	(3.09)	(2.46)	(6.20)	(8.51)	(7.58)	(15.27)	(7.00)	(2.63)	0.79	(2.95)	(6.34)
Required Brent Price	**74.21**	**39.67**	**86.80**	**74.90**	**106.81**	**98.19**	**301.25**	**33.02**	**49.12**	**47.20**	**45.35**	**47.09**	**92.70**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Operating Costs	22.88	16.79	25.97	25.09	25.12	31.02	25.69	18.71	19.83	17.15	17.01	17.99	19.68
Exploration Expense	5.54	5.30	6.64	20.03	10.72	6.98	3.45	6.30	2.81	0.67	1.23	1.98	3.30
G&A/Other	2.22	1.70	1.78	2.76	1.65	1.33	1.50	0.83	1.16	0.66	0.49	0.98	1.12
F&D Costs (1-Year)	10.66	9.57	27.88	13.21	46.10	36.16	109.77	9.76	20.09	16.98	18.53	18.53	35.03
Return on Capital	10.73	9.13	29.43	20.63	41.93	29.10	79.25	11.21	19.41	12.17	7.56	12.75	27.39
Income Taxes	27.47	4.91	15.85	11.11	18.88	6.36	65.46	6.04	10.45	4.33	3.82	5.89	14.75
Breakeven Oil Price	**79.50**	**47.41**	**107.55**	**92.83**	**144.40**	**110.95**	**285.11**	**52.86**	**73.74**	**51.95**	**48.63**	**58.13**	**101.28**
Quality Differential	28.21	1.01	(4.60)	(3.79)	(8.74)	(11.76)	(9.90)	(18.01)	(8.41)	(2.69)	0.77	(3.44)	(7.65)
Required Brent Price	**107.72**	**48.42**	**102.95**	**89.03**	**135.66**	**99.19**	**275.21**	**34.85**	**65.33**	**49.27**	**49.40**	**54.68**	**93.63**

Source: BMO Capital Markets, Company Reports

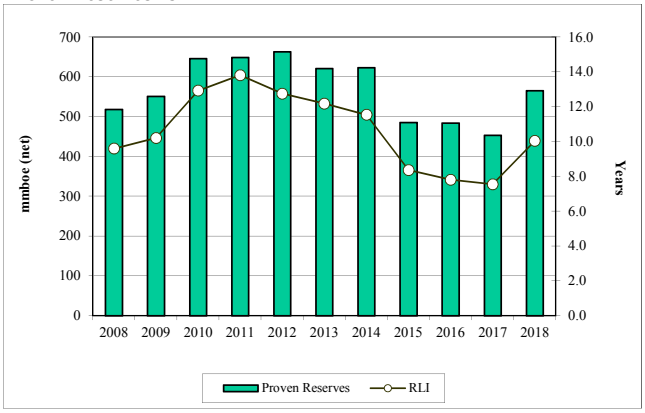
Santos Ltd. (STO - ASX; STOSY - NYSE)

US$, net

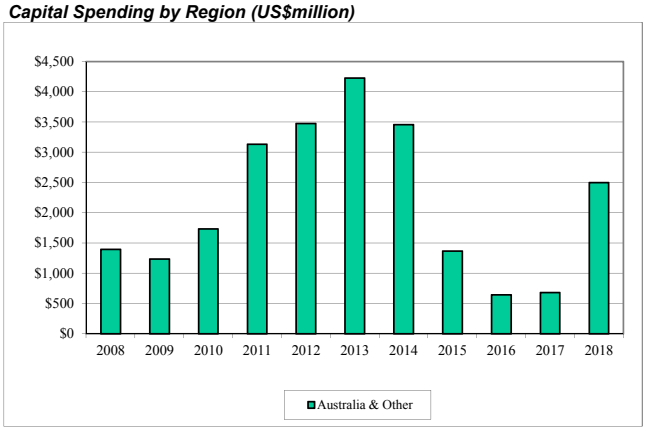
- Santos reported results from operations of $11.76/boe in 2018 compared to $6.55/boe in 2017.
- The company reported ROCE of 7.3% in 2018 relative to a loss on capital employed of 1.9% last year.
- One-year F&D costs increased to $14.83/boe from $12.79/boe in 2017. On a realized oil:gas price ratio basis, F&D costs were $17.35/boe, compared to $14.56/boe last year.
- Santos' 2018 results imply a required Brent breakeven oil price of $39.80/boe on a realized ratio basis.

Notes: All financial figures have been converted from Australian Dollars to U.S. Dollars using average annual exchange rates.

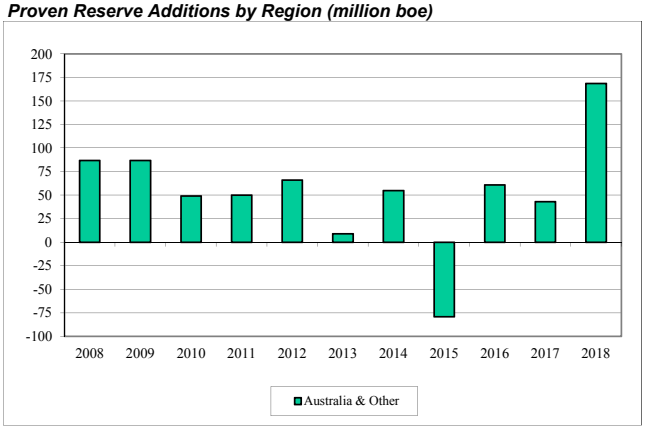
Proven Reserves vs RLI



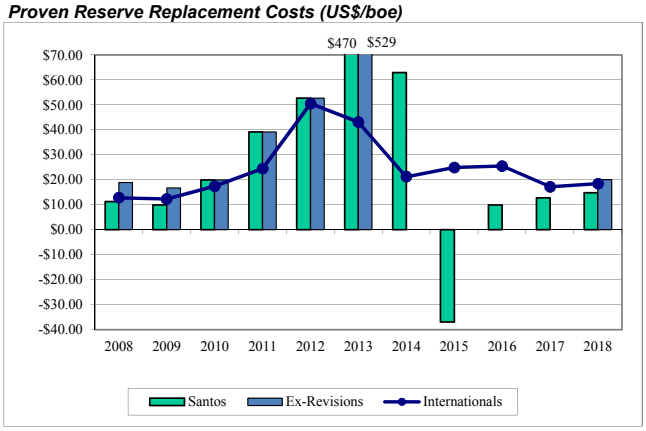
Capital Spending by Region (US$million)



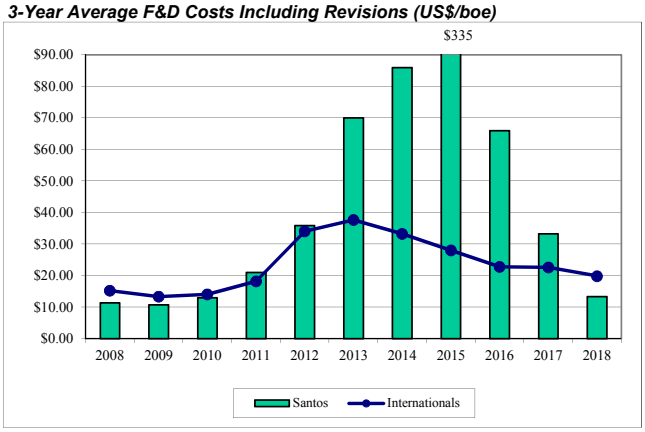
Proven Reserve Additions by Region (million boe)



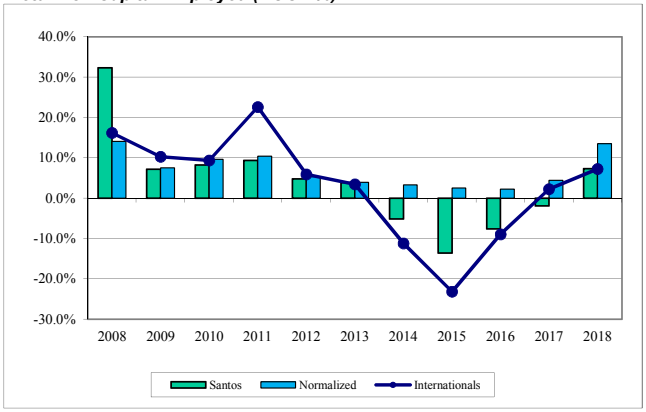
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



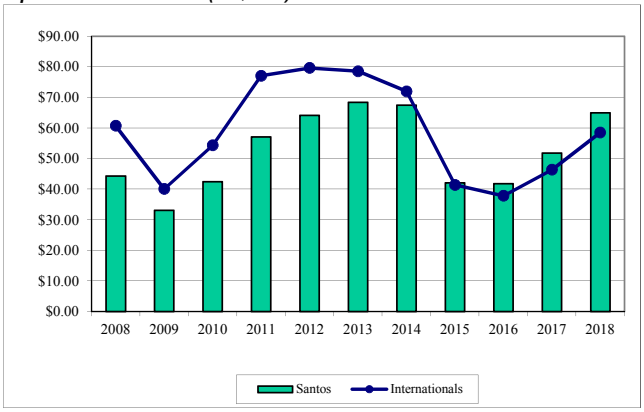
Source: BMO Capital Markets, Company Reports

Santos Ltd. (STO - ASX; STOSY - NYSE)

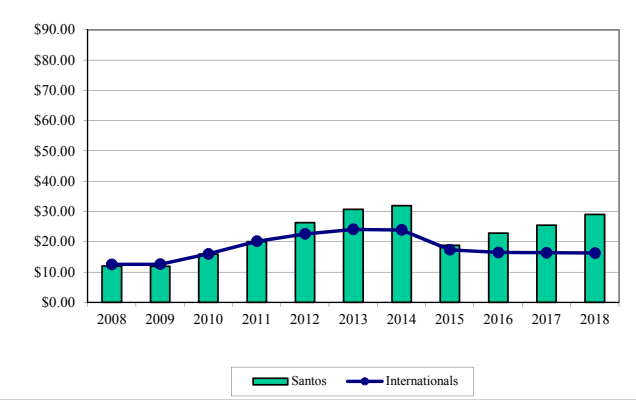
US$, net

International

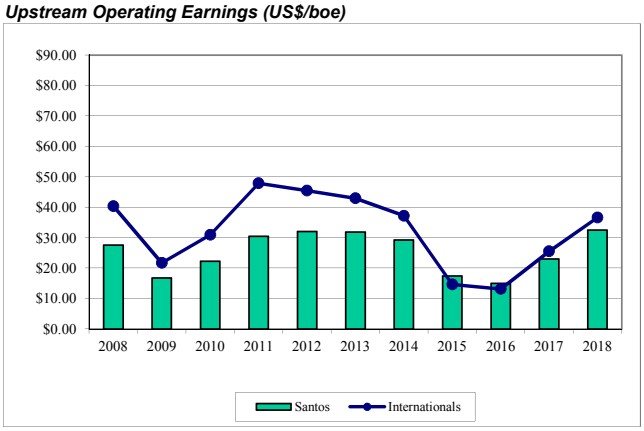
Upstream Net Revenue (US$/boe)



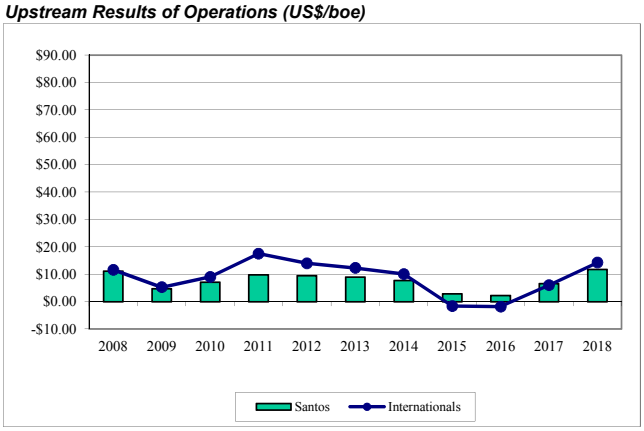
Production Costs (US$/boe)



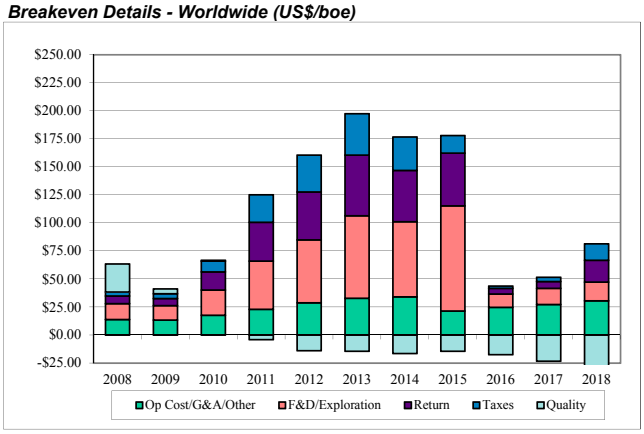
Upstream Operating Earnings (US$/boe)



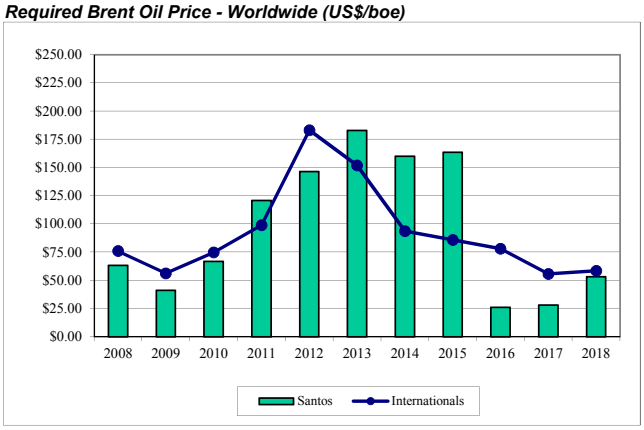
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Santos Ltd. (STO - ASX; STOSY - NYSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	2,355	1,729	2,049	2,583	3,335	3,486	3,645	2,442	2,594	3,107	3,660
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	1,516	257	388	657	98	114	84	51	190	188	113
Total Revenue and Other Income	3,870	1,986	2,437	3,240	3,434	3,601	3,729	2,493	2,784	3,295	3,773
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	649	542	628	734	923	923	1,035	799	846	791	789
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	153	160	119	171	171	186	231	184	138	94	105
General and Administrative	-	-	-	-	-	-	-	-	-	-	-
Depreciation, Depletion and Amortization	566	491	552	654	801	857	892	795	736	740	667
Interest, net	77	10	(6)	(93)	(82)	16	105	223	281	270	228
Other	266	214	416	467	674	777	2,860	3,200	2,268	1,985	878
Earnings Before Income Tax	2,160	568	729	1,307	947	841	(1,394)	(2,707)	(1,485)	(585)	1,106
Current Income Taxes	378	107	243	550	353	208	(102)	50	88	148	102
Future Income Taxes	375	117	29	(8)	58	134	(448)	(728)	(526)	(373)	374
Total Income Taxes	753	224	271	542	411	342	(550)	(677)	(438)	(225)	476
Minority Interest	-	-	2	2	1	-	-	-	-	-	-
Earnings From Continuing Operations	1,407	344	460	767	537	499	(844)	(2,030)	(1,047)	(360)	630
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	1,407	344	460	767	537	499	(844)	(2,030)	(1,047)	(360)	630
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	1,407	344	460	767	537	499	(844)	(2,030)	(1,047)	(360)	630

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	1,407	344	460	767	537	499	(844)	(2,030)	(1,047)	(360)	630
Charges and Credits Not Impacting Cash	903	571	739	839	953	766	2,863	3,633	2,229	1,607	669
Other	(1,436)	(146)	(230)	(476)	55	234	264	65	(378)	(52)	310
Cash Flow From Operations	874	769	968	1,130	1,544	1,499	2,282	1,668	804	1,195	1,609
Change in Working Capital / Other	382	147	197	149	173	76	(618)	(845)	53	53	(31)
Net Cash From Operating Activities	1,256	916	1,165	1,279	1,717	1,576	1,664	823	857	1,248	1,578
Upstream Spending	(1,340)	(1,237)	(1,606)	(2,922)	(3,135)	(3,908)	(3,016)	(1,414)	(649)	(634)	(566)
Midstream / Downstream Spending	-	-	-	-	-	-	-	-	-	-	-
Acquisitions, net	1,767	(301)	(4)	3	134	(154)	(36)	(38)	429	(49)	(1,801)
Other	(48)	(373)	680	732	(311)	(216)	(208)	(129)	(2)	149	(6)
Net Cash From Investing Activities	379	(1,911)	(930)	(2,187)	(3,312)	(4,277)	(3,260)	(1,582)	(222)	(534)	(2,373)
Net Change in Debt	(215)	812	1,523	(32)	453	1,365	1,879	(1,213)	(147)	(1,659)	973
Net Change in Common Stock	(69)	1,448	451	98	91	9	9	2,402	733	141	(10)
Net Change in Preferred Stock	-	(476)	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(214)	(235)	(291)	(158)	(165)	(152)	(177)	(162)	(43)	-	(73)
Other	-	-	-	-	-	-	-	-	-	-	0
Net Cash From Financing Activities	(499)	1,549	1,683	(92)	379	1,222	1,711	1,028	543	(1,518)	890
Effect of Exchange Rate on Cash	17	(9)	(6)	(8)	(7)	25	4	16	9	9	(10)
Net Increase/(Decrease) in Cash	1,153	545	1,912	(1,008)	(1,223)	(1,455)	118	285	1,187	(795)	85
Cash and Equivalents, Beginning of Year	171	1,231	2,060	4,410	3,452	2,078	581	583	839	2,026	1,231
Cash and Equivalents, End of Year	1,324	1,776	3,973	3,403	2,228	623	700	868	2,026	1,231	1,316

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Santos Ltd. (STO - ASX; STOSY - NYSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	2,117	2,790	4,848	4,852	3,375	2,011	1,864	2,198	2,950	1,972	2,198
Net Property, Plant and Equipment	5,833	5,898	7,428	10,920	13,934	17,467	17,872	13,555	11,028	10,121	12,347
Other Assets	406	319	387	375	336	469	438	744	1,284	1,613	2,589
Total Assets	8,356	9,006	12,663	16,147	17,644	19,948	20,174	16,497	15,262	13,706	17,134
Total Current Liabilities	1,153	856	1,485	1,556	1,358	1,671	1,757	958	1,556	951	1,848
Long-term Debt	2,008	1,307	2,563	3,157	3,821	5,403	7,155	5,425	4,819	3,736	3,952
Deferred Income Taxes	634	690	775	998	967	1,188	536	159	221	240	1,614
Other Liabilities and Deferred Credits	743	629	847	1,284	1,798	1,802	2,227	2,279	1,586	1,628	2,441
Total Liabilities	4,539	3,483	5,671	6,995	7,944	10,064	11,676	8,821	8,182	6,555	9,855
Minority Interests	0	-	(2)	(4)	(5)	(4)	(4)	-	-	-	-
Common Shares	2,158	3,953	5,071	6,527	6,844	6,533	6,234	7,668	8,883	9,034	9,031
Contributed Surplus (Paid-in Capital)	-	-	-	-	-	-	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	1,821	1,794	2,227	2,988	3,288	3,310	1,956	(734)	(1,293)	(1,934)	(2,359)
Other / Comprehensive Income (Loss)	(161)	(224)	(304)	(358)	(427)	45	312	741	(510)	51	607
Total Shareholders' Equity	3,818	5,523	6,994	9,156	9,705	9,888	8,502	7,676	7,080	7,151	7,279
Total Liabilities and Shareholders' Equity	8,356	9,006	12,663	16,147	17,644	19,948	20,174	16,497	15,262	13,706	17,134

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
Worldwide													
Net Revenue	$44.28	$33.05	$42.42	$57.09	$64.14	$68.36	$67.50	$42.11	$41.84	$51.78	$64.97	$52.49	$53.21
Production Costs	$12.02	$11.91	$15.95	$20.12	$26.31	$30.75	$31.95	$18.90	$22.85	$25.53	$29.04	$25.71	$25.51
Exploration	$2.83	$2.97	$2.37	$3.63	$3.29	$3.64	$4.28	$3.17	$2.23	$1.57	$1.86	$1.89	$2.59
DD&A	$10.44	$8.98	$10.94	$13.82	$15.30	$16.80	$16.52	$13.70	$11.87	$12.33	$11.84	$12.02	$13.19
G&A / Other	$1.85	$1.38	$1.78	$2.89	$2.45	$2.11	$1.97	$2.58	$1.73	$1.70	$1.58	$1.67	$1.91
Pre-tax Results of Operations	$17.15	$7.81	$11.37	$16.64	$16.79	$15.07	$12.77	$3.76	$3.16	$10.65	$20.64	$11.20	$10.01
Income Taxes	$5.98	$3.08	$4.23	$6.89	$7.29	$6.12	$5.04	$0.94	$0.93	$4.10	$8.89	$4.51	$3.89
Results of Operations	$11.17	$4.73	$7.14	$9.75	$9.51	$8.95	$7.74	$2.82	$2.23	$6.55	$11.76	$6.69	$6.11

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	5-Year
International													
Net Revenue	$44.28	$33.05	$42.42	$57.09	$64.14	$68.36	$67.50	$42.11	$41.84	$51.78	$64.97	$52.49	$53.21
Production Costs	$12.02	$11.91	$15.95	$20.12	$26.31	$30.75	$31.95	$18.90	$22.85	$25.53	$29.04	$25.71	$25.51
Exploration	$2.83	$2.97	$2.37	$3.63	$3.29	$3.64	$4.28	$3.17	$2.23	$1.57	$1.86	$1.89	$2.59
DD&A	$10.44	$8.98	$10.94	$13.82	$15.30	$16.80	$16.52	$13.70	$11.87	$12.33	$11.84	$12.02	$13.19
Other	$1.85	$1.38	$1.78	$2.89	$2.45	$2.11	$1.97	$2.58	$1.73	$1.70	$1.58	$1.67	$1.91
Pre-tax Earnings	$17.15	$7.81	$11.37	$16.64	$16.79	$15.07	$12.77	$3.76	$3.16	$10.65	$20.64	$11.20	$10.01
Income Taxes	$5.98	$3.08	$4.23	$6.89	$7.29	$6.12	$5.04	$0.94	$0.93	$4.10	$8.89	$4.51	$3.89
Net Earnings	$11.17	$4.73	$7.14	$9.75	$9.51	$8.95	$7.74	$2.82	$2.23	$6.55	$11.76	$6.69	$6.11

Note: Converted to US$ from $AUS
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Santos Ltd. (STO - ASX; STOSY - NYSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	574.3	596.8	564.3	516.9	555.6	531.8	581.8	651.7	714.1	709.1	778.1	733.8	687.0
Liquids Production (b/d)	52,231	48,486	42,937	42,625	49,873	51,087	50,983	50,290	50,845	46,198	24,658	40,567	44,595
Total Production (boe/d)	147,945	147,945	136,986	128,767	142,466	139,726	147,945	158,904	169,863	164,384	154,338	162,861	159,087
% Gas Production	65%	67%	69%	67%	65%	63%	66%	68%	70%	72%	84%	75%	72%
% Oil Production	35%	33%	31%	33%	35%	37%	34%	32%	30%	28%	16%	25%	28%
Proven Reserves:													
Gas Reserves (bcf)	2,383	3,097	3,081	3,048	3,116	2,908	2,956	2,348	2,327	2,318	3,122	2,589	2,614
Oil Reserves (mmbbls)	121	35	132	141	144	136	130	94	96	67	45	69	86
Total Proven Reserves (mmboe)	518	551	646	649	663	621	623	485	484	453	565	501	522
% Gas Reserves	77%	94%	80%	78%	78%	78%	79%	81%	80%	85%	92%	86%	83%
% Oil Reserves	23%	6%	20%	22%	22%	22%	21%	19%	20%	15%	8%	14%	17%
Proven Reserve Life Index	9.6	10.2	12.9	13.8	12.8	12.2	11.5	8.4	7.8	7.6	10.0	8.5	9.1
Proven Reserve Additions:													
Gas Additions (bcf)	394.4	868.7	231.4	232.5	306.4	41.5	258.2	-376.2	289.1	216.0	915.0	1,420.0	1,302.1
Oil Additions (mmbbls)	21.3	-57.8	10.4	11.3	14.9	2.1	12.0	-16.3	12.8	7.0	16.0	35.8	31.5
Total Additions (mmboe)	87.0	87.0	49.0	50.0	66.0	9.0	55.0	-79.0	61.0	43.0	168.5	272.5	248.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	74.0	74.0	87.0	80.0	65.0	6.0	0.0	0.0	0.0	0.0	0.0	-	-
Acquisitions	0.0	0.0	0.0	0.0	1.0	2.0	0.0	0.0	0.0	0.0	125.0	125.0	125.0
Dispositions	-37.0	-37.0	-38.0	-30.0	0.0	0.0	0.0	-42.0	-4.0	-10.0	0.0	-14.0	-56.0
Revisions of Estimates	50.0	50.0	0.0	0.0	0.0	1.0	55.0	-37.0	65.0	53.0	43.5	161.5	179.5
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	85.1%	85.1%	177.6%	160.0%	98.5%	66.7%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Acquisitions	0.0%	0.0%	0.0%	0.0%	1.5%	22.2%	0.0%	0.0%	0.0%	0.0%	74.2%	45.9%	50.3%
Dispositions	-42.5%	-42.5%	-77.6%	-60.0%	0.0%	0.0%	0.0%	53.2%	-6.6%	-23.3%	0.0%	-5.1%	-22.5%
Revisions of Estimates	57.5%	57.5%	0.0%	0.0%	0.0%	11.1%	100.0%	46.8%	106.6%	123.3%	25.8%	59.3%	72.2%
Additions as % of Production:													
Gas	188.2%	398.8%	112.4%	123.2%	151.1%	21.4%	121.6%	-158.1%	110.9%	83.4%	322.2%	176.7%	103.9%
Oil	111.5%	-326.5%	66.5%	72.3%	82.1%	11.1%	64.3%	-88.8%	69.1%	41.6%	177.8%	80.7%	38.7%
Total	161.1%	161.1%	98.0%	106.4%	126.9%	17.6%	101.9%	-136.2%	98.4%	71.7%	299.1%	152.8%	85.6%
Additions as % of Reserves:													
Gas	16.5%	28.1%	7.5%	7.6%	9.8%	1.4%	8.7%	-16.0%	12.4%	9.3%	29.3%	54.9%	49.8%
Oil	17.6%	-165.6%	7.9%	8.0%	10.4%	1.5%	9.2%	-17.4%	13.3%	10.5%	35.6%	51.7%	36.5%
Total	16.8%	15.8%	7.6%	7.7%	10.0%	1.4%	8.8%	-16.3%	12.6%	9.5%	29.8%	54.4%	47.6%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Exploration	$199	$143	$83	$154	$168	$378	$292	$205	$124	$146	$66	$336	$832
Development	$1,190	$1,091	$1,648	$2,979	$3,311	$3,850	$3,167	$1,163	$501	$483	$490	$1,474	$5,804
Acquisitions	$6	$0	$0	$0	$0	$0	$0	$0	$18	$49	$1,943	$2,010	$2,010
Dispositions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	na	na
Other	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$1,395	$1,234	$1,731	$3,134	$3,479	$4,229	$3,459	$1,368	$643	$678	$2,499	$3,820	$8,647
Expenditures as % of Total (US$million):													
Exploration	14.2%	11.6%	4.8%	4.9%	4.8%	8.9%	8.4%	15.0%	19.3%	21.5%	2.6%	8.8%	9.6%
Development	85.3%	88.4%	95.2%	95.1%	95.2%	91.1%	91.6%	85.0%	77.9%	71.2%	19.6%	38.6%	67.1%
Acquisitions	0.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	2.8%	7.2%	77.8%	52.6%	23.2%
Cashflow (US$million)	$1,167	$740	$904	$1,108	$1,290	$1,313	$1,310	$958	$874	$1,133	$1,329	$3,337	$5,605
Cashflow (US$/boe)	$21.62	$13.71	$18.08	$23.57	$24.80	$25.74	$24.25	$16.52	$14.10	$18.89	$23.60	$18.71	$19.30
Recycle Ratio	1.9x	1.4x	0.9x	0.6x	0.5x	0.1x	0.4x	-0.4x	1.4x	1.5x	1.6x	1.4x	0.7x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. Revisions)	$11.20	$9.95	$19.90	$39.17	$53.53	$604.13	$62.89	-$36.97	$9.62	$11.87	$12.78	$11.21	$36.97
Acquisition Costs	na	na	na	na	$0.00	$0.00	na	na	na	na	$15.54	na	$16.08
All Sources (incl. Revisions)	$11.25	$9.95	$19.90	$39.17	$52.71	$469.88	$62.89	-$36.97	$9.89	$12.79	$14.83	$13.33	$28.40
Exploration & Development (excl. revisions)	$18.76	$16.68	$19.90	$39.17	$53.53	$704.82	nm	nm	nm	nm	nm	nm	nm
Acquisition Costs	na	na	na	na	$0.00	$0.00	na	na	na	na	$15.54	na	$16.08
All Sources (excl. revisions)	$18.85	$16.68	$19.90	$39.17	$52.71	$528.61	nm	nm	nm	nm	$19.99	nm	$69.17
Geographically Segmented Costs													
Australia & Other	$11.25	$9.95	$19.90	$39.17	$52.71	$469.88	$62.89	-$36.97	$9.89	$12.79	$14.83	$13.33	$28.40

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Santos Ltd. (STO - ASX; STOSY - NYSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.02	11.91	15.95	20.12	26.31	30.75	31.95	18.90	22.85	25.53	29.04	25.71	25.51
Exploration Expense	2.83	2.97	2.37	3.63	3.29	3.64	4.28	3.17	2.23	1.57	1.86	1.89	2.59
G&A/Other	1.85	1.38	1.78	2.89	2.45	2.11	1.97	2.58	1.73	1.70	1.58	1.67	1.91
F&D Costs (1-Year)	11.25	9.95	19.90	39.17	52.71	69.95	62.89	90.57	9.89	12.79	14.83	13.33	38.19
Return on Capital	6.77	6.38	16.24	34.74	42.82	53.98	45.70	47.10	4.83	6.04	19.32	18.57	29.21
Income Taxes	3.62	4.16	9.62	24.57	32.82	36.93	29.77	15.71	2.02	3.78	14.60	12.50	18.61
Breakeven Oil Price	**38.33**	**36.75**	**65.86**	**125.11**	**160.41**	**197.36**	**176.56**	**178.03**	**43.55**	**51.41**	**81.24**	**73.68**	**116.02**
Quality Differential	24.94	4.28	0.86	(4.21)	(14.00)	(14.40)	(16.48)	(14.38)	(17.60)	(23.35)	(28.06)	(23.00)	(19.97)
Required Brent Price	**63.27**	**41.03**	**66.72**	**120.91**	**146.41**	**182.96**	**160.08**	**163.65**	**25.95**	**28.05**	**53.18**	**50.67**	**96.04**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	21.96	22.49	31.45	41.25	51.38	57.51	62.61	30.63	25.35	28.50	33.57	28.95	33.40
Exploration Expense	5.17	5.60	4.68	7.44	6.42	6.82	8.39	5.13	2.47	1.75	2.15	2.13	3.39
G&A/Other	3.38	2.61	3.52	5.93	4.78	3.94	3.87	4.18	1.91	1.90	1.83	1.88	2.50
F&D Costs (1-Year)	23.88	34.82	45.76	96.36	125.74	169.12	151.39	246.08	11.13	14.56	17.35	15.38	34.49
Return on Capital	12.11	14.47	31.55	69.12	81.05	103.19	87.65	114.06	5.35	6.74	10.76	7.98	17.98
Income Taxes	6.48	9.43	18.69	48.87	62.12	70.59	57.09	38.05	2.24	4.21	8.13	5.38	11.45
Breakeven Oil Price	**72.97**	**89.42**	**135.65**	**268.97**	**331.50**	**411.16**	**371.00**	**438.12**	**48.44**	**57.65**	**73.79**	**61.69**	**103.21**
Quality Differential	45.59	8.09	1.69	(8.63)	(27.35)	(26.94)	(32.30)	(23.30)	(19.52)	(26.07)	(33.99)	(26.53)	(27.03)
Required Brent Price	**118.56**	**97.51**	**137.35**	**260.34**	**304.15**	**384.22**	**338.71**	**414.82**	**28.93**	**31.58**	**39.80**	**35.17**	**76.17**

Source: BMO Capital Markets, Company Reports

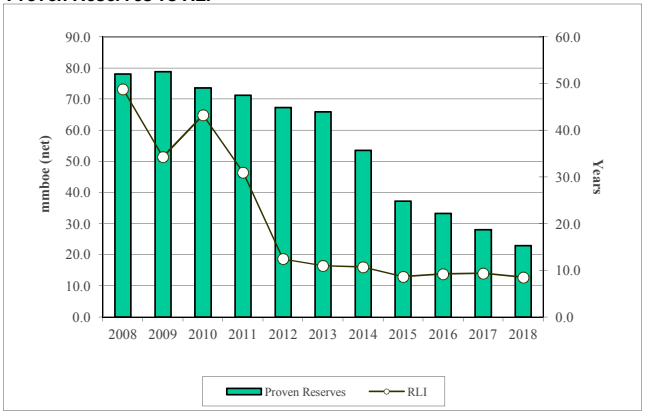
SOCO International (SIA - LSE)

US$, net

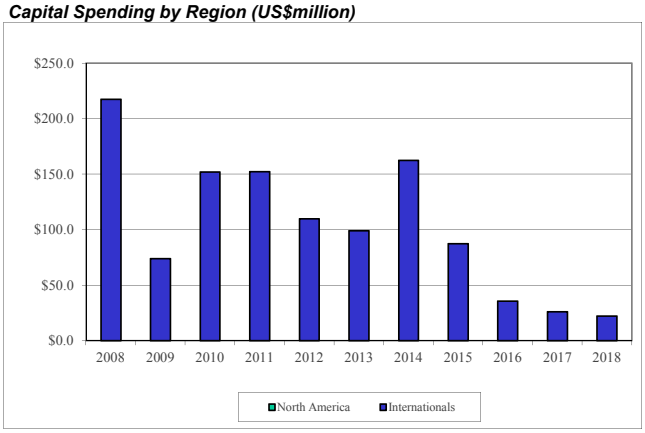
- SOCO's results from operations improved to $9.36/boe in 2018 compared to $3.82/boe in 2017.
- The company reported a 2018 ROCE of 7.9% relative to a normalized ROCE of 5.3% in 2017.
- One-year F&D costs were non-meaningful due to negative revisions. Hence our calculations are based on three-year average F&D costs, which came in at $76.43/boe.
- SOCO's 2018 operations imply a required Brent breakeven oil price of $180.97/boe.

Notes: Reserve based figures reflect Proved plus Probable (2P) reserves as per available disclosure, and therefore, are not directly comparable to peer or industry average results.

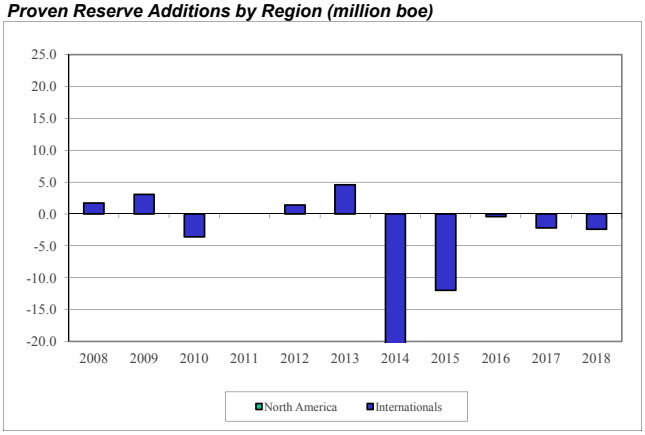
Proven Reserves vs RLI



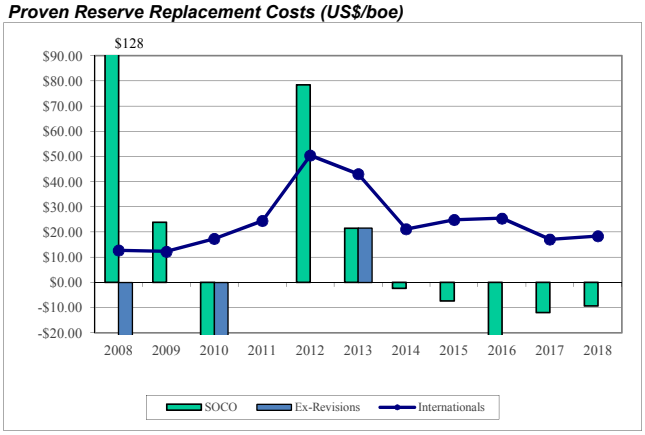
Capital Spending by Region (US$million)



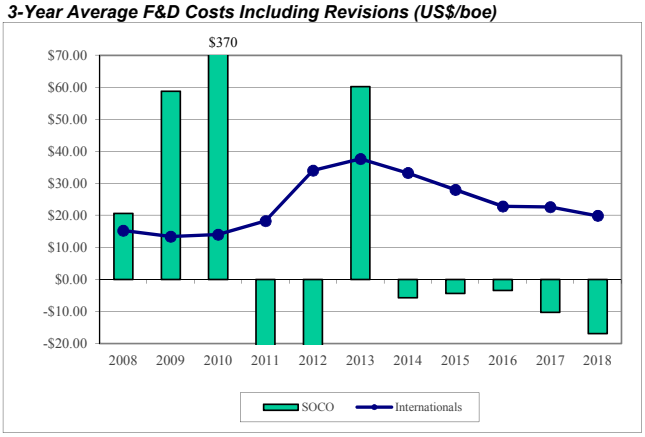
Proven Reserve Additions by Region (million boe)



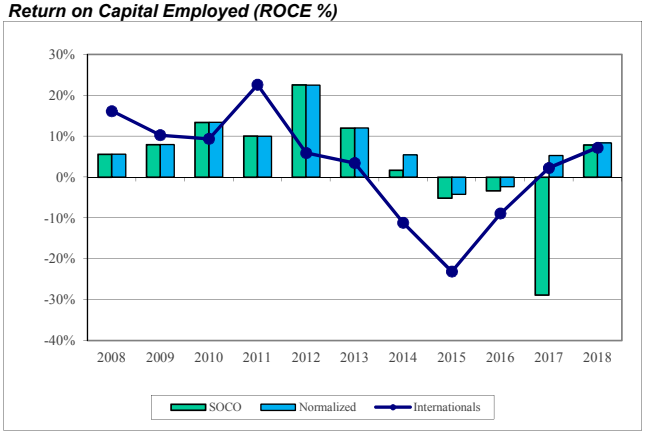
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



Source: BMO Capital Markets, Company Reports

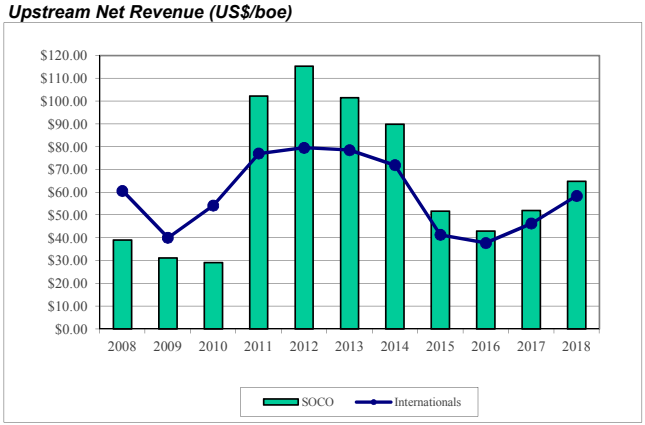
See pages F1 to F4 for analyst coverage.

SOCO International (SIA - LSE)

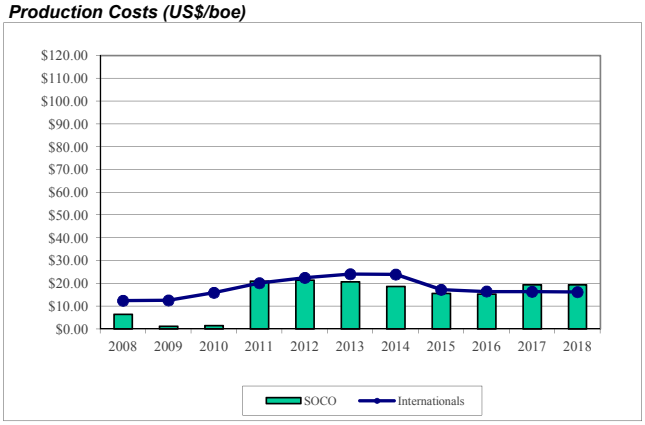
US$, net

International

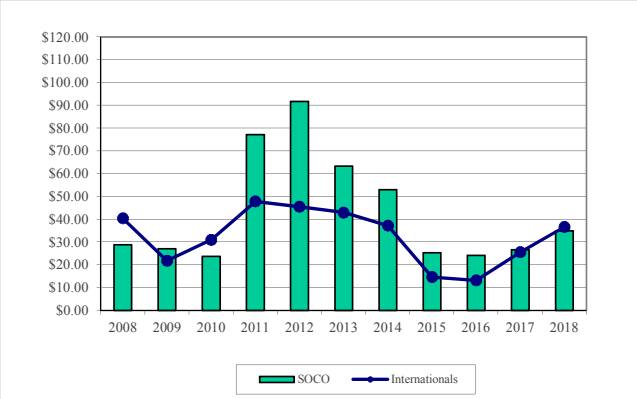
Upstream Net Revenue (US$/boe)



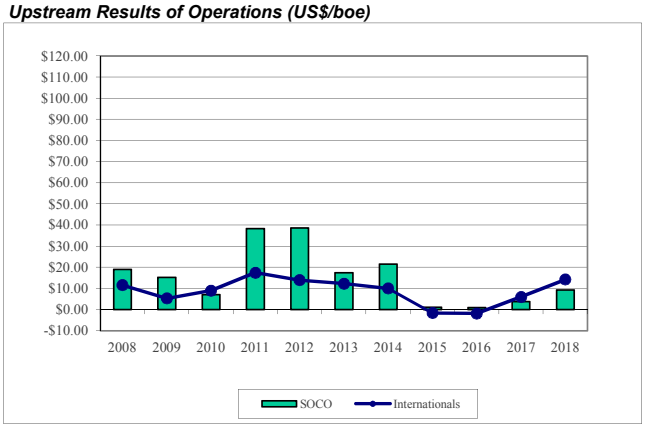
Production Costs (US$/boe)



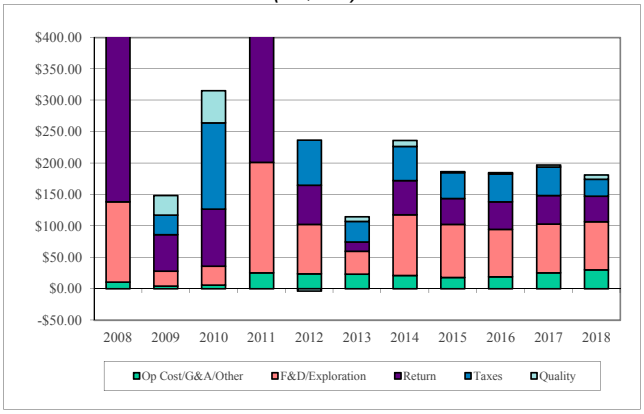
Upstream Operating Earnings (US$/boe)



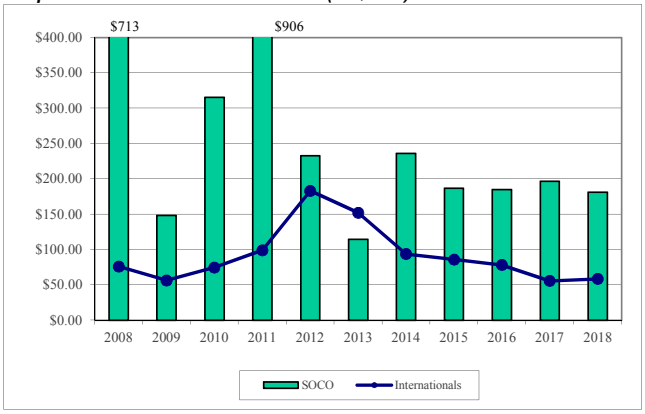
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

SOCO International (SIA - LSE)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	55	69	48	234	622	608	448	215	155	156	175
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	7	3	1	1	2	1	2	7	-	-	-
Total Revenue and Other Income	63	72	50	235	623	609	450	222	155	156	175
Crude Oil and Product Purchases	10	3	3	48	116	124	94	67	55	58	53
Production and Transportation Expenses	-	-	-	-	-	-	-	-	-	-	-
Marketing Expenses	-	-	-	-	-	92	80	36	(1)	-	-
Exploration / Dry Hole Costs	6	7	7	9	12	13	12	10	14	18	28
General and Administrative	9	8	10	19	45	45	50	99	80	57	52
Depreciation, Depletion and Amortization	-	-	-	-	-	-	-	-	-	-	-
Interest, net	1	1	1	3	5	3	2	2	2	2	3
Other	(1)	(2)	(1)	(3)	(1)	(1)	60	(0)	(1)	151	(40)
Earnings Before Income Tax	37	55	31	159	446	333	153	8	6	(130)	80
Income Taxes:											
Current Income Taxes	7	20	19	70	239	158	123	59	42	42	47
Future Income Taxes	-	-	-	-	-	71	16	(17)	(18)	(14)	9
Total Income Taxes	7	20	19	70	239	229	139	42	24	28	56
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	31	35	12	89	207	104	14	(34)	(18)	(157)	24
Discontinued Operations/Extraordinary Items	-	16	89	-	-	-	-	-	-	-	4
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	31	51	101	89	207	104	14	(34)	(18)	(157)	28
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	31	51	101	89	207	104	14	(34)	(18)	(157)	28

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	31	35	12	89	207	104	14	(34)	(18)	(157)	24
Charges and Credits Not Impacting Cash	9	8	10	19	45	137	190	135	79	209	52
Other	28	51	50	24	86	70	78	(25)	(13)	(13)	(27)
Cash Flow From Operations	68	94	72	132	339	311	282	76	48	39	49
Change in Working Capital / Other	(23)	(17)	(35)	(42)	(4)	3	(31)	4	(2)	6	5
Net Cash From Operating Activities	45	77	37	90	335	314	251	80	46	45	54
Total Capital Expenditures	(218)	(74)	(152)	(152)	(160)	(129)	(123)	(88)	(8)	(21)	(17)
Acquisitions, net	-	-	-	-	-	-	-	-	-	-	-
Other	439	(152)	238	-	(91)	(15)	(10)	35	(37)	24	20
Net Cash From Investing Activities	221	(226)	86	(152)	(251)	(144)	(132)	(52)	(45)	3	3
Net Change in Debt	-	-	(166)	(36)	(1)	(48)	-	-	-	-	96
Net Change in Common Stock	(30)	1	164	-	(35)	-	0	-	-	-	(1)
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	0	-	(211)	(118)	(51)	(18)	(21)	(23)
Other	-	-	(10)	(7)	-	-	(1)	(1)	(1)	(0)	-
Net Cash From Financing Activities	(30)	1	(13)	(42)	(36)	(259)	(119)	(52)	(18)	(21)	71
Effect of Exchange Rate on Cash	(1)	0	(5)	4	0	10	(4)	1	(1)	0	(1)
Net Increase/(Decrease) in Cash	235	(148)	105	(100)	48	(79)	(4)	(23)	(19)	27	128
Cash and Equivalents, Beginning of Year	68	303	156	260	160	209	130	126	104	85	112
Cash and Equivalents, End of Year	303	156	260	160	209	130	126	104	85	112	240

Source: BMO Capital Markets, Company Reports

SOCO International (SIA - LSE)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	339	352	302	251	379	287	213	180	174	163	264
Net Property, Plant and Equipment	235	573	693	794	817	801	790	761	691	506	507
Other Assets	400	140	182	234	242	274	279	241	252	41	46
Total Assets	974	1,064	1,176	1,278	1,437	1,363	1,282	1,181	1,117	710	818
Total Current Liabilities	24	267	48	63	105	55	56	45	32	30	28
Long-term Debt	228	-	78	47	-	-	-	-	-	-	96
Deferred Income Taxes	3	23	24	38	113	184	200	184	166	133	142
Other Liabilities and Deferred Credits	8	11	13	33	43	43	51	60	63	53	52
Total Liabilities	264	301	163	180	261	282	307	289	260	215	317
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	24	24	28	28	28	28	28	28	28	28	28
Contributed Surplus (Paid-in Capital)	70	71	73	73	73	11	-	-	-	-	-
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	601	656	764	857	971	816	708	623	585	410	415
Other / Comprehensive Income (Loss)	15	11	149	141	106	227	240	242	244	57	58
Total Shareholders' Equity	710	763	1,013	1,098	1,177	1,081	975	893	857	495	501
Total Liabilities and Shareholders' Equity	974	1,064	1,176	1,278	1,437	1,363	1,282	1,181	1,117	710	818
Return on Capital Employed (ROCE)	**5.6%**	**8.0%**	**13.4%**	**10.0%**	**22.5%**	**12.0%**	**1.7%**	**-5.1%**	**-3.4%**	**-28.9%**	**7.9%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$39.07	$31.26	$29.23	$102.26	$115.39	$101.57	$89.96	$51.67	$42.94	$52.07	$64.85	$52.25	$62.25
Production Costs	$6.38	$1.24	$1.53	$21.04	$21.44	$20.72	$18.72	$15.63	$15.28	$19.40	$19.44	$17.82	$17.55
Exploration	$0.00	$0.00	$0.00	$0.00	$0.00	$15.33	$15.90	$8.47	-$0.31	$0.00	$0.00	-$0.12	$6.17
DD&A	$5.46	$3.51	$5.76	$8.43	$8.39	$7.47	$10.04	$23.07	$22.22	$18.93	$19.30	$20.31	$18.19
G&A / Other	$3.88	$2.95	$4.03	$4.09	$2.28	$2.20	$2.36	$2.33	$3.75	$6.10	$10.52	$18.29	$13.51
Pre-tax Results of Operations	$23.35	$23.56	$17.90	$68.70	$83.28	$55.85	$42.94	$2.19	$2.00	$7.63	$15.59	-$4.05	$6.83
Income Taxes	$4.26	$8.25	$10.76	$30.32	$44.59	$38.41	$21.47	$1.09	$1.00	$3.82	$6.24	-$1.89	$3.28
Results of Operations	$19.10	$15.32	$7.14	$38.38	$38.69	$17.44	$21.47	$1.09	$1.00	$3.82	$9.36	-$2.16	$3.55

Source: BMO Capital Markets, Company Reports

SOCO International (SIA - LSE)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquids Production (b/d)	4,384	6,301	4,658	6,301	14,795	16,438	13,699	11,781	9,863	8,219	7,397	8,493	10,192
Total Production (boe/d)	4,384	6,301	4,658	6,301	14,795	16,438	13,699	11,781	9,863	8,219	7,397	8,493	10,192
% Gas Production	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Production	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Closing Gas Reserves (bcf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Oil Reserves (mmbbls)	78.1	78.9	73.6	71.3	67.3	65.9	53.6	37.3	33.3	28.1		28.1	35.1
Closing Total Proven Reserves (mmboe)	78.1	78.9	73.6	71.3	67.3	65.9	53.6	37.3	33.3	28.1	23.0	28.1	35.1
% Gas Reserves	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	48.8	34.3	43.3	31.0	12.5	11.0	10.7	8.7	9.3	9.4	8.5	9.0	9.3
Proven Reserve Additions:													
Gas Additions (bcf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil Additions (mmbbls)	1.7	3.1	-3.6	0.0	1.4	4.6	-71.5	-12.0	-0.4	-2.2	-2.4	-5.0	-88.5
Total Additions (mmboe)	1.7	3.1	-3.6	0.0	1.4	4.6	-71.5	-12.0	-0.4	-2.2	-2.4	-5.0	-88.5
Addition Components (mmboe):													
Extensions, Discoveries and Additions	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Net Acquisitions	-21.9	0.0	-3.6	0.0	0.0	4.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Revisions of Estimates	12.0	3.1	0.0	0.0	1.4	0.0	-71.5	-12.0	-0.4	-2.2	-2.4	-5.0	-88.5
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	682.4%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Net Acquisitions	-1288.2%	0.0%	100.0%	0.0%	0.0%	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Revisions of Estimates	705.9%	100.0%	0.0%	0.0%	100.0%	0.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Additions as % of Production:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	106.3%	134.8%	-211.8%	0.0%	25.9%	76.7%	-1430.0%	-279.1%	-11.1%	-73.3%	-88.9%	-53.8%	-475.8%
Total	106.3%	134.8%	-211.8%	0.0%	25.9%	76.7%	-1430.0%	-279.1%	-11.1%	-73.3%	-88.9%	-53.8%	-475.8%
Additions as % of Reserves:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	2.2%	3.9%	-4.9%	0.0%	2.1%	7.0%	-133.4%	-32.2%	-1.2%	-7.8%	-10.4%	-17.8%	-252.4%
Total	2.2%	3.9%	-4.9%	0.0%	2.1%	7.0%	-133.4%	-32.2%	-1.2%	-7.8%	-10.4%	-17.8%	-252.4%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$218	$74	$152	$152	$110	$99	$163	$88	$36	$26	$22	$84	$334
Net Acquisitions	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$218	$74	$152	$152	$110	$99	$163	$88	$36	$26	$22	$84	$334
Expenditures as % of Total (US$million):													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$68	$94	$72	$132	$339	$311	$282	$76	$48	$39	$49	$136	$494
Cashflow (US$/boe)	$42.22	$40.67	$42.14	$57.30	$62.69	$51.87	$56.34	$17.74	$13.22	$12.97	$18.33	$14.62	$26.56
Recycle Ratio	0.3x	1.7x	-1.0x	na	0.8x	2.4x	-24.8x	-2.4x	-0.1x	-1.1x	-2.0x	-0.9x	-7.0x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$9.22	$23.84	nm	nm	$78.50	nm	nm	nm	nm	-$11.91	-$9.33	-$16.88	-$3.78
Net Acquisition Costs	$0.00	na	$0.00	na	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (incl. revisions)	$128.01	$23.84	-$42.19	nm	$78.50	$21.54	-$2.27	-$7.29	-$89.50	-$11.91	-$9.33	-$16.88	-$3.78
Exploration & Development (excl. revisions)	$18.76	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm	nm
Net Acquisition Costs	$0.00	na	$0.00	na	nm	nm	nm	nm	nm	nm	nm	nm	nm
All Sources (excl. revisions)	-$21.13	nm	-$42.19	nm	nm	$21.54	nm	nm	nm	nm	nm	nm	nm
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
International	$128.01	$23.84	-$42.19	na	$78.50	$21.54	-$2.27	-$7.29	-$89.50	-$11.91	-$9.33	-$16.88	-$3.78

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

SOCO International (SIA - LSE)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.38	1.24	1.53	21.04	21.44	20.72	18.72	15.63	15.28	19.40	19.44	17.82	17.55
Exploration Expense	-	-	-	-	-	15.33	15.90	8.47	(0.31)	-	-	(0.12)	6.17
G&A/Other	3.88	2.95	4.03	4.09	2.28	2.20	2.36	2.33	3.75	6.10	10.52	18.29	13.51
F&D Costs (1-Year)	128.01	23.84	30.30	175.95	78.50	21.54	80.76	75.89	75.89	77.51	76.43	76.61	77.30
Return on Capital	421.23	57.81	91.02	388.63	62.30	14.79	54.40	41.20	43.95	45.48	40.75	43.31	45.05
Income Taxes	93.90	31.13	137.22	307.04	71.81	32.56	54.40	41.20	43.95	45.48	27.17	37.90	41.58
Breakeven Oil Price	**653.40**	**116.96**	**264.11**	**896.76**	**236.33**	**107.14**	**226.54**	**184.70**	**182.52**	**193.98**	**174.31**	**193.81**	**201.17**
Quality Differential	59.20	31.37	51.11	8.69	(3.70)	7.16	9.42	1.88	2.18	2.72	6.66	3.85	4.57
Required Brent Price	**712.60**	**148.33**	**315.23**	**905.45**	**232.64**	**114.31**	**235.96**	**186.58**	**184.69**	**196.70**	**180.97**	**197.66**	**205.74**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

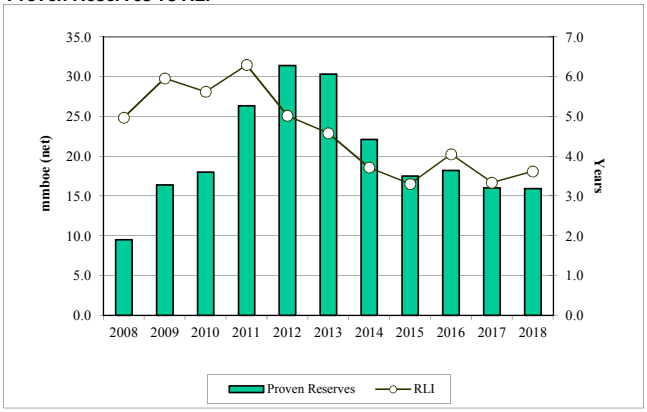
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	6.38	1.24	1.53	21.04	21.44	20.72	18.72	15.63	15.28	19.40	19.44	17.82	17.55
Exploration Expense	-	-	-	-	-	15.33	15.90	8.47	(0.31)	-	-	(0.12)	6.17
G&A/Other	3.88	2.95	4.03	4.09	2.28	2.20	2.36	2.33	3.75	6.10	10.52	18.29	13.51
F&D Costs (1-Year)	20.59	23.84	30.30	175.95	78.50	21.54	80.76	75.89	75.89	77.51	76.43	76.61	77.30
Return on Capital	68.43	57.81	91.02	388.63	62.30	14.79	54.40	41.20	43.95	45.48	40.75	43.31	45.05
Income Taxes	15.25	31.13	137.22	307.04	71.81	32.56	54.40	41.20	43.95	45.48	27.17	37.90	41.58
Breakeven Oil Price	**114.54**	**116.96**	**264.11**	**896.76**	**236.33**	**107.14**	**226.54**	**184.70**	**182.52**	**193.98**	**174.31**	**193.81**	**201.17**
Quality Differential	59.20	31.37	51.11	8.69	(3.70)	7.16	9.42	1.88	2.18	2.72	6.66	3.85	4.57
Required Brent Price	**173.74**	**148.33**	**315.23**	**905.45**	**232.64**	**114.31**	**235.96**	**186.58**	**184.69**	**196.70**	**180.97**	**197.66**	**205.74**

Source: BMO Capital Markets, Company Reports

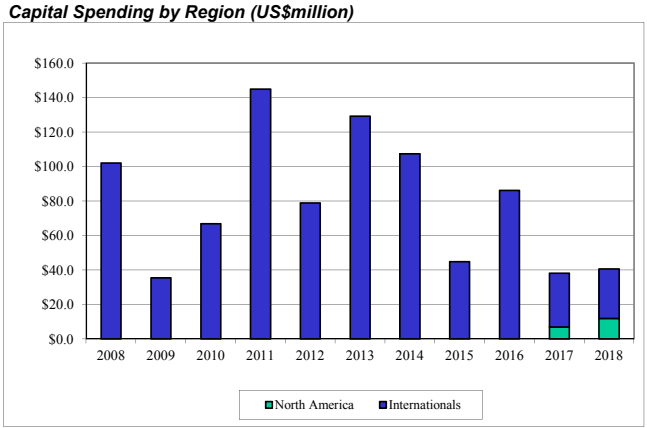
TransGlobe Energy Corp. (TGL - TSX) US$, net

- TransGlobe reported results of operations of $7.77/boe versus $4.14/boe in 2017.
- The company reported 2018 ROCE of 7.8% compared to a loss on capital employed of 26.1% last year.
- One-year F&D costs declined to $9.47/boe from $14.68/boe in 2017. On a realized oil:gas price ratio basis, F&D costs were $9.47/boe while the costs for PD reserves were $9.35/boe.
- TransGlobe's 2018 operations imply a required Brent breakeven oil price of $62.00/boe on a realized oil:gas price ratio basis, while its PD cost assessment implied a Brent breakeven oil price of $62.04/boe.

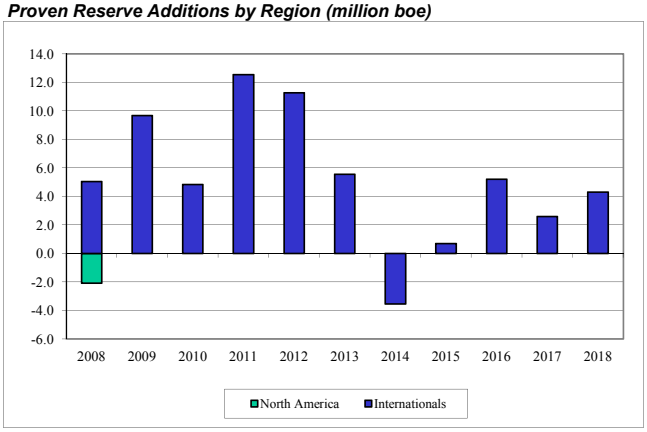
Proven Reserves vs RLI



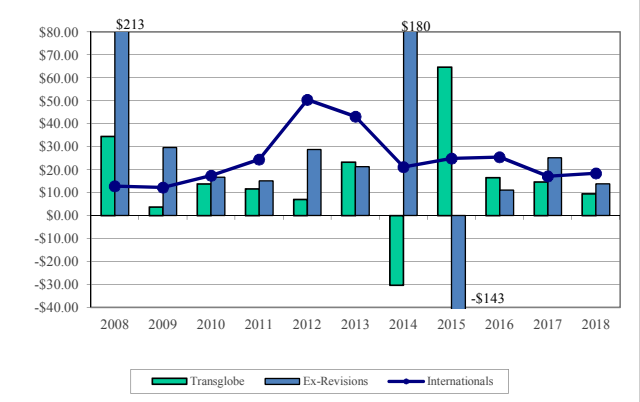
Capital Spending by Region (US$million)



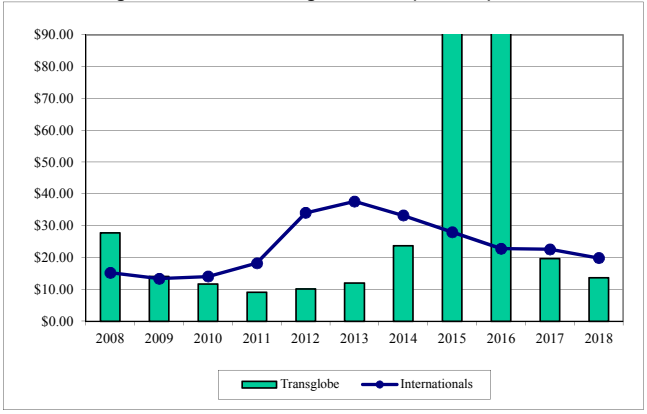
Proven Reserve Additions by Region (million boe)



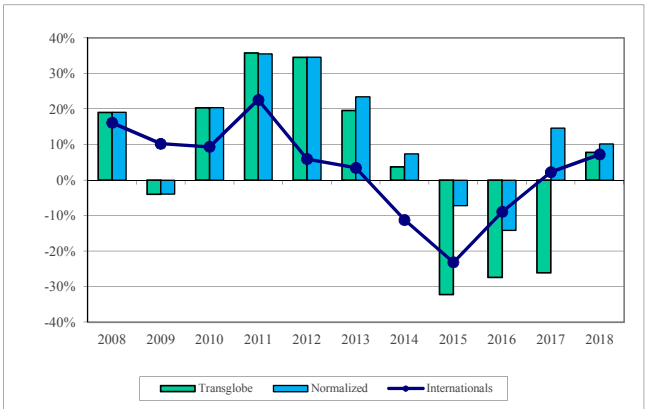
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



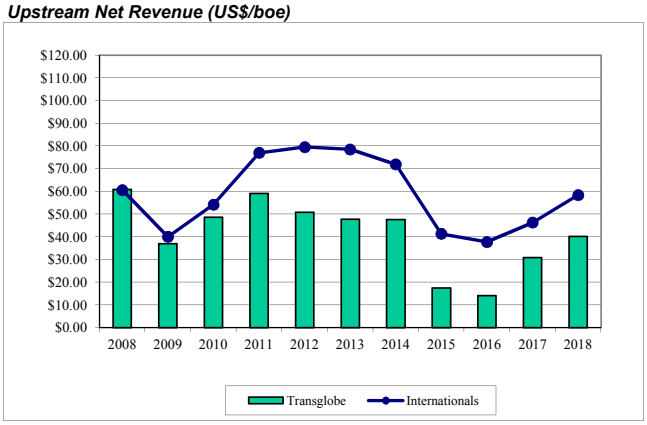
Source: BMO Capital Markets, Company Reports

TransGlobe Energy Corp. (TGL - TSX)

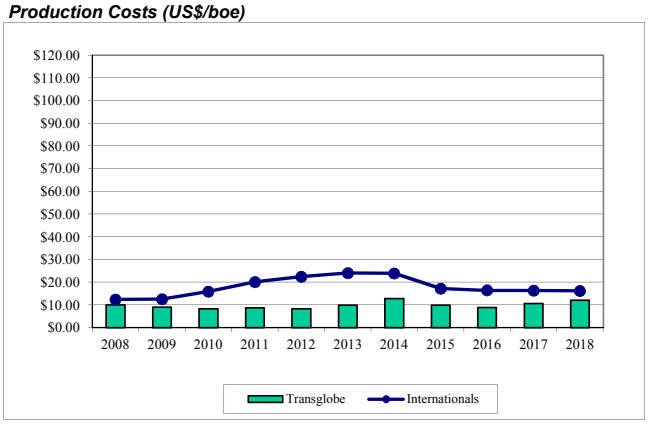
US$, net

International

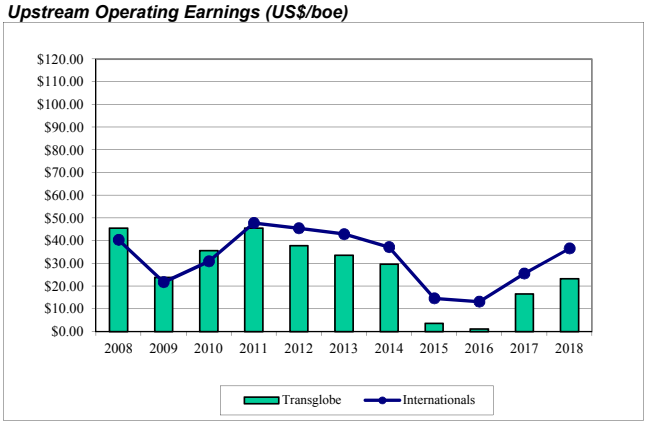
Upstream Net Revenue (US$/boe)



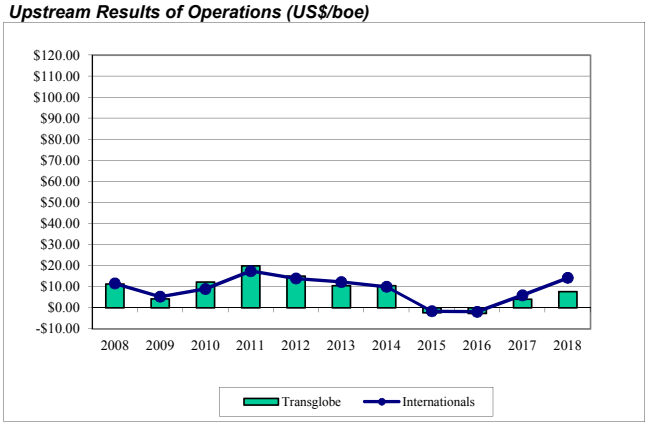
Production Costs (US$/boe)



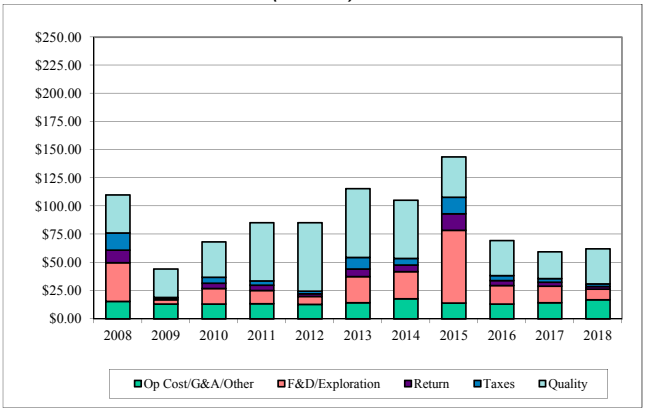
Upstream Operating Earnings (US$/boe)



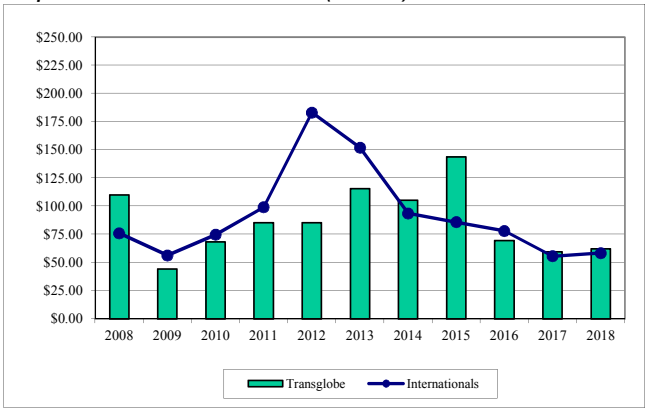
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

TransGlobe Energy Corp. (TGL - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	123	103	157	248	318	315	275	92	63	148	176
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	3	(4)	(1)	(0)	0	0	10	1	1	0	1
Total Revenue and Other Income	126	99	157	247	318	316	284	93	64	149	177
Crude Oil and Product Purchases	19	25	27	37	52	66	76	53	40	51	53
Production and Transportation Expenses	-	-	-	-	-	-	-	-	-	-	-
Marketing Expenses	-	-	-	2	0	0	1	0	-	-	-
Exploration / Dry Hole Costs	10	11	15	19	28	28	30	21	18	18	21
General and Administrative	35	48	34	35	47	49	52	43	29	40	34
Depreciation, Depletion and Amortization	-	-	-	-	-	-	-	-	-	-	-
Interest, net	6	2	3	5	14	9	8	6	6	6	5
Other	(0)	(1)	0	(1)	0	20	53	86	45	90	21
Earnings Before Income Tax	55	13	78	151	176	144	65	(116)	(75)	(57)	42
Income Taxes:											
Current Income Taxes	32	22	40	70	89	89	63	25	15	22	26
Future Income Taxes	-	-	-	-	(1)	(4)	(10)	(36)	(3)	-	-
Total Income Taxes	32	22	40	70	88	85	53	(11)	12	22	26
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	23	(8)	38	81	88	59	11	(106)	(88)	(79)	16
Discontinued Operations/Extraordinary Items	8	-	-	-	-	-	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	32	(8)	38	81	88	59	11	(106)	(88)	(79)	16
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	32	(8)	38	81	88	59	11	(106)	(88)	(79)	16

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	23	(8)	38	81	88	59	11	(106)	(88)	(79)	16
Charges and Credits Not Impacting Cash	35	48	34	35	46	76	113	92	60	119	49
Other	(6)	6	3	3	19	5	(4)	4	20	15	(1)
Cash Flow From Operations	52	45	75	120	153	139	120	(9)	(8)	56	63
Change in Working Capital / Other	5	(8)	(23)	(56)	(60)	60	26	86	7	4	6
Net Cash From Operating Activities	58	37	52	64	94	200	147	78	(1)	59	69
Total Capital Expenditures	(44)	(36)	(67)	(144)	(52)	(129)	(108)	(45)	(26)	(37)	(40)
Acquisitions, net	(62)	-	-	-	(27)	-	-	2	(48)	-	-
Other	44	1	11	26	(24)	(3)	3	(15)	(13)	16	(0)
Net Cash From Investing Activities	(62)	(34)	(56)	(118)	(103)	(132)	(104)	(59)	(87)	(21)	(40)
Net Change in Debt	-	(8)	40	(30)	56	(18)	-	-	-	(16)	(17)
Net Change in Common Stock	(1)	15	10	78	3	1	3	(12)	-	-	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	(19)	(13)	-	-	(3)
Other	(0)	(2)	(4)	(7)	(12)	(10)	(8)	(6)	(5)	(7)	(5)
Net Cash From Financing Activities	(1)	6	46	41	47	(27)	(24)	(31)	(5)	(23)	(25)
Effect of Exchange Rate on Cash	0	-	-	-	1	(1)	(1)	(2)	(2)	1	(0)
Net Increase/(Decrease) in Cash	(5)	9	42	(14)	39	39	18	(13)	(95)	16	4
Cash and Equivalents, Beginning of Year	13	8	16	58	44	83	122	140	127	31	47
Cash and Equivalents, End of Year	8	16	58	44	83	122	140	127	31	47	52

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

TransGlobe Energy Corp. (TGL - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	40	53	130	214	311	280	275	170	86	82	79
Net Property, Plant and Equipment	179	167	200	284	285	293	267	162	316	204	198
Other Assets	9	8	12	28	57	102	112	124	4	41	41
Total Assets	228	229	342	526	653	676	654	456	406	328	318
Total Current Liabilities	16	65	42	74	49	38	45	16	103	31	28
Long-term Debt	57	-	86	58	116	88	69	64	6	70	52
Deferred Income Taxes	-	-	-	53	52	49	39	3	-	-	-
Other Liabilities and Deferred Credits	-	-	-	1	1	1	1	0	12	4	6
Total Liabilities	74	65	128	185	218	176	154	84	121	118	98
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	51	66	80	154	159	161	164	152	152	152	152
Contributed Surplus (Paid-in Capital)	5	7	5	9	12	16	19	21	23	23	24
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	88	80	118	178	265	324	317	198	111	32	45
Other / Comprehensive Income (Loss)	11	11	11	-	-	-	-	-	-	3	(1)
Total Shareholders' Equity	155	164	214	340	436	500	500	372	285	210	220
Total Liabilities and Shareholders' Equity	228	229	342	526	653	676	654	456	406	328	318
Return on Capital Employed (ROCE)	**19.1%**	**-4.0%**	**20.4%**	**35.8%**	**34.6%**	**19.6%**	**3.7%**	**-32.2%**	**-27.3%**	**-26.1%**	**7.8%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$60.96	$37.06	$48.62	$59.21	$50.85	$47.75	$47.73	$17.52	$14.18	$30.95	$40.18	$28.41	$30.70
Production Costs	$10.12	$9.00	$8.38	$8.77	$8.37	$9.95	$12.84	$9.94	$8.96	$10.63	$12.11	$10.56	$10.97
Exploration	$0.00	$0.00	$0.00	$0.37	$0.06	$0.02	$0.11	$0.01	$0.00	$0.00	$0.00	$0.00	$0.03
DD&A	$18.51	$17.29	$10.59	$8.39	$7.50	$7.47	$8.66	$8.09	$6.48	$8.34	$7.79	$7.56	$7.93
G&A / Other	$5.34	$4.15	$4.55	$4.52	$4.51	$4.17	$5.02	$4.02	$4.10	$3.70	$4.73	$4.16	$4.33
Pre-tax Results of Operations	$26.99	$6.61	$25.09	$37.16	$30.41	$26.13	$21.09	-$4.53	-$5.36	$8.29	$15.55	$6.14	$7.44
Income Taxes	$15.70	$2.31	$12.86	$17.12	$15.23	$15.50	$10.55	-$2.26	-$2.68	$4.14	$7.77	$3.07	$3.72
Results of Operations	$11.29	$4.30	$12.23	$20.03	$15.17	$10.63	$10.55	-$2.26	-$2.68	$4.14	$7.77	$3.07	$3.72

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

TransGlobe Energy Corp. (TGL - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Liquids Production (b/d)	5,236	7,538	8,777	11,457	17,140	18,113	16,312	14,526	12,329	13,151	12,055	12,511	13,675
Total Production (boe/d)	5,236	7,538	8,777	11,457	17,140	18,113	16,312	14,526	12,329	13,151	12,055	12,511	13,675
% Gas Production	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Production	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserves:													
Closing Gas Reserves (bcf)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Closing Oil Reserves (mmbbls)	9.5	16.4	18.0	26.3	31.4	30.3	22.1	17.5	18.2	16.0	15.9	16.7	18.0
Closing Total Proven Reserves (mmboe)	9.5	16.4	18.0	26.3	31.4	30.3	22.1	17.5	18.2	16.0	15.9	16.7	18.0
% Gas Reserves	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
% Oil Reserves	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Proven Reserve Life Index	5.0	6.0	5.6	6.3	5.0	4.6	3.7	3.3	4.1	3.3	3.6	3.7	3.6
Proven Reserve Additions:													
Gas Additions (bcf)	-8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Oil Additions (mmbbls)	4.5	9.7	4.8	12.5	11.3	5.6	-3.5	0.7	5.2	2.6	4.3	12.1	9.3
Total Additions (mmboe)	3.0	9.7	4.8	12.5	11.3	5.6	-3.5	0.7	5.2	2.6	4.3	12.1	9.3
Addition Components (mmboe):													
Extensions, Discoveries and Additions	2.0	1.2	4.0	2.1	2.7	6.0	0.6	0.0	0.1	0.4	2.7	3.2	3.8
Net Acquisitions	-1.1	0.0	0.0	7.5	0.0	0.0	0.0	-0.3	0.0	0.0	0.0	0.0	-0.3
Revisions of Estimates	2.1	8.5	0.8	3.0	8.5	-0.5	-4.1	1.0	5.1	2.2	1.6	8.9	5.8
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	68.1%	12.4%	82.7%	16.5%	24.4%	108.6%	-16.9%	0.0%	1.9%	15.4%	62.8%	26.4%	41.0%
Net Acquisitions	-38.0%	0.0%	0.0%	59.5%	-0.1%	0.0%	0.0%	-43.2%	0.0%	0.0%	0.0%	0.0%	-3.2%
Revisions of Estimates	69.9%	87.6%	17.3%	24.0%	75.7%	-8.6%	116.9%	143.2%	98.1%	84.6%	37.2%	73.6%	62.2%
Additions as % of Production:													
Gas	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	232.9%	351.4%	151.2%	300.0%	180.2%	84.1%	-59.5%	13.1%	115.6%	54.2%	97.7%	88.3%	37.1%
Total	155.1%	351.4%	151.2%	300.0%	180.2%	84.1%	-59.5%	13.1%	115.6%	54.2%	97.7%	88.3%	37.1%
Additions as % of Reserves:													
Gas	5337939.2%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Oil	46.8%	59.0%	26.9%	47.6%	35.9%	18.3%	-16.0%	4.0%	28.5%	16.2%	27.0%	72.3%	51.5%
Total	31.2%	59.0%	26.9%	47.6%	35.9%	18.3%	-16.0%	4.0%	28.5%	16.2%	27.0%	72.3%	51.5%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$13	$35	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$29	$0	$67	$70	$52	$129	$108	$43	$27	$38	$41	$106	$256
Net Acquisitions	$59	$0	$0	$75	$27	$0	$0	$0	$59	$0	$0	$59	$59
Total Expenditures	$102	$36	$67	$145	$79	$129	$108	$43	$86	$38	$41	$165	$315
Expenditures as % of Total (US$million):													
Land & Seismic	13.0%	99.5%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	28.8%	0.5%	100.0%	48.4%	65.5%	100.0%	100.0%	100.0%	30.9%	100.0%	100.0%	64.0%	81.1%
Net Acquisitions	58.2%	0.0%	0.0%	51.6%	34.5%	0.0%	0.0%	0.0%	69.1%	0.0%	0.0%	36.0%	18.9%
Cashflow (US$million)	$52	$45	$75	$120	$153	$139	$120	-$9	-$8	$56	$63	$111	$222
Cashflow (US$/boe)	$27.39	$16.38	$23.28	$28.69	$24.54	$21.04	$20.24	-$1.68	-$1.86	$11.58	$14.38	$8.07	$8.90
Recycle Ratio	0.8x	4.5x	1.7x	2.5x	3.5x	0.9x	-0.7x	0.0x	-0.1x	0.8x	1.5x	0.6x	0.3x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$10.42	$3.68	$13.82	$13.80	$4.58	$23.23	-$30.36	$43.12	$5.13	$14.68	$9.47	$8.72	$26.79
Net Acquisition Costs	-$52.76	na	na	$10.03	nm	nm	nm	nm	nm	$0.00	$0.00	nm	nm
All Sources (incl. revisions)	$34.43	$3.68	$13.82	$11.55	$7.00	$23.23	-$30.36	$64.61	$16.56	$14.68	$9.47	$13.64	$34.09
Exploration & Development (excl. revisions)	$21.11	$29.65	$16.71	$33.96	$18.80	$21.39	$180.13	nm	nm	nm	nm	$32.98	$67.41
Net Acquisition Costs	-$52.76	na	na	$10.03	nm	nm	nm	nm	nm	$0.00	$0.00	nm	nm
All Sources (excl. revisions)	$212.95	$29.65	$16.71	$15.21	$28.84	$21.33	$180.13	-$143.01	$11.11	$25.16	$13.88	$51.56	$90.20
Geographically Segmented Costs													
North America	$0.00	na	na	na	na	na	na	na	na	na	na	na	na
International	$20.20	$3.68	$13.82	$11.55	$7.00	$23.23	-$30.36	$64.61	$16.56	$12.00	$6.68	$12.07	$31.25

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

TransGlobe Energy Corp. (TGL - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.12	9.00	8.38	8.77	8.37	9.95	12.84	9.94	8.96	10.63	12.11	10.56	10.97
Exploration Expense	-	-	-	0.37	0.06	0.02	0.11	0.01	-	-	-	-	0.03
G&A/Other	5.34	4.15	4.55	4.52	4.51	4.17	5.02	4.02	4.10	3.70	4.73	4.16	4.33
F&D Costs (1-Year)	34.43	3.68	13.82	11.55	7.00	23.23	23.75	64.61	16.56	14.68	9.47	13.64	34.09
Return on Capital	10.94	1.38	4.94	4.59	2.24	6.90	5.91	14.59	4.36	3.35	2.29	3.36	8.25
Income Taxes	15.22	0.74	5.19	3.92	2.25	10.07	5.91	14.59	4.36	3.35	2.29	3.36	8.25
Breakeven Oil Price	**76.04**	**18.95**	**36.89**	**33.72**	**24.43**	**54.35**	**53.53**	**107.75**	**38.34**	**35.69**	**30.88**	**35.06**	**65.92**
Quality Differential	33.71	25.25	31.26	51.60	60.85	60.98	51.65	36.04	30.94	23.84	31.33	28.70	34.76
Required Brent Price	**109.75**	**44.20**	**68.15**	**85.31**	**85.28**	**115.33**	**105.19**	**143.79**	**69.29**	**59.53**	**62.21**	**63.77**	**100.68**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.12	9.00	8.38	8.77	8.37	9.95	12.84	9.94	8.96	10.63	12.11	10.56	10.97
Exploration Expense	-	-	-	0.37	0.06	0.02	0.11	0.01	-	-	-	-	0.03
G&A/Other	5.34	4.15	4.55	4.52	4.51	4.17	5.02	4.02	4.10	3.70	4.73	4.16	4.33
F&D Costs (1-Year)	25.49	3.68	13.82	11.55	7.00	23.23	23.75	64.61	16.56	14.68	9.47	13.64	34.31
Return on Capital	6.20	0.85	3.22	2.69	1.63	5.65	5.77	14.54	3.84	3.41	2.19	3.17	8.30
Income Taxes	8.62	0.46	3.38	2.30	1.63	8.24	5.77	14.54	3.84	3.41	2.19	3.17	8.30
Breakeven Oil Price	**55.76**	**18.14**	**33.35**	**30.20**	**23.20**	**51.26**	**53.27**	**107.66**	**37.30**	**35.82**	**30.68**	**34.70**	**66.24**
Quality Differential	33.71	25.25	31.26	51.60	60.85	60.98	51.65	36.04	30.94	23.84	31.33	28.70	34.76
Required Brent Price	**89.47**	**43.39**	**64.61**	**81.80**	**84.04**	**112.24**	**104.92**	**143.69**	**68.24**	**59.66**	**62.00**	**63.40**	**101.00**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	10.12	9.00	8.38	8.77	8.37	9.95	12.84	9.94	8.96	10.63	12.11	10.56	10.97
Exploration Expense	-	-	-	0.37	0.06	0.02	0.11	0.01	-	-	-	-	0.03
G&A/Other	5.34	4.15	4.55	4.52	4.51	4.17	5.02	4.02	4.10	3.70	4.73	4.16	4.33
F&D Costs (1-Year)	28.06	38.24	3.27	14.40	9.10	30.16	19.51	25.83	15.44	9.96	9.35	11.59	16.02
Return on Capital	8.83	14.30	1.17	5.71	2.91	8.90	4.81	5.85	4.07	2.26	2.26	2.85	3.88
Income Taxes	12.28	7.70	1.23	4.88	2.92	12.98	4.81	5.85	4.07	2.26	2.26	2.85	3.88
Breakeven Oil Price	**64.63**	**73.39**	**18.60**	**38.65**	**27.87**	**66.18**	**47.11**	**51.48**	**36.65**	**28.81**	**30.71**	**32.01**	**39.11**
Quality Differential	33.71	25.25	31.26	51.60	60.85	60.98	51.65	36.04	30.94	23.84	31.33	28.70	34.76
Required Brent Price	**98.34**	**98.64**	**49.86**	**90.25**	**88.71**	**127.16**	**98.76**	**87.52**	**67.59**	**52.64**	**62.04**	**60.71**	**73.87**

Source: BMO Capital Markets, Company Reports

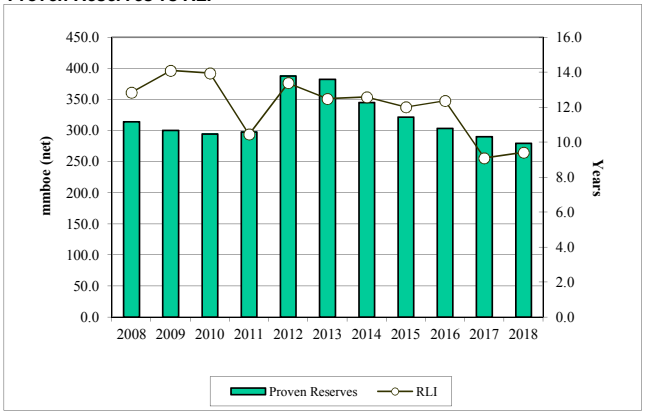
See pages F1 to F4 for analyst coverage.

Tullow Oil plc (TLW - LN)

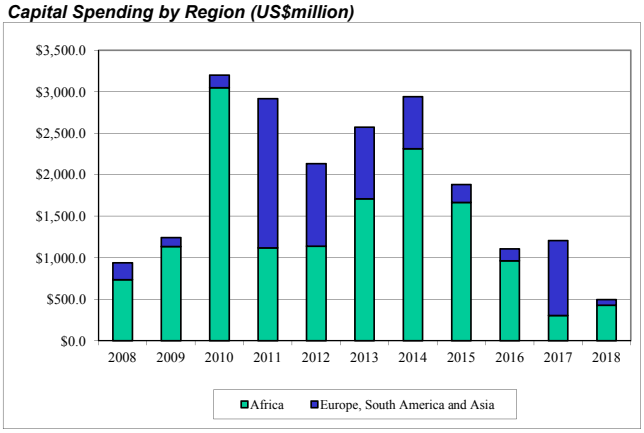
US$, net

- Tullow reported results of operations of $11.12/boe compared to $8.18/boe in 2017.
- The company reported ROCE of 3.3% in 2018 relative to a normalized 2017 ROCE of 6.4%.
- One-year F&D costs were recorded at $24.38/boe. Adjusted F&D costs on a realized oil:gas price ratio basis were $25.01/boe.
- Tullow's 2018 operations imply a required Brent breakeven oil price of $79.79/boe on realized oil:gas price ratio basis using adjusted F&D costs.

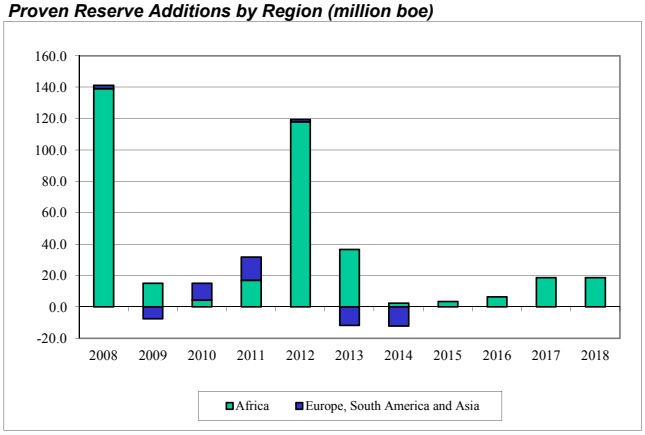
Proven Reserves vs RLI



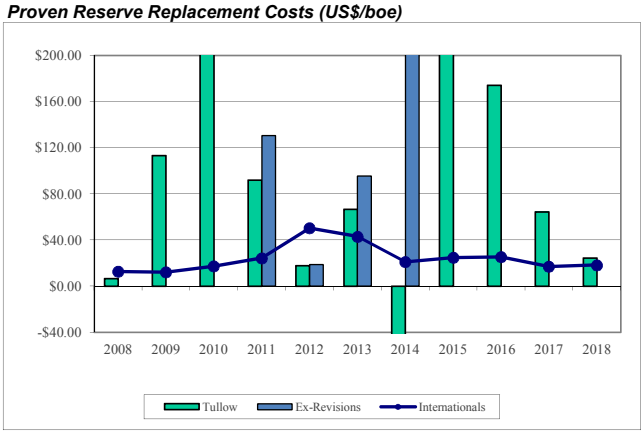
Capital Spending by Region (US$million)



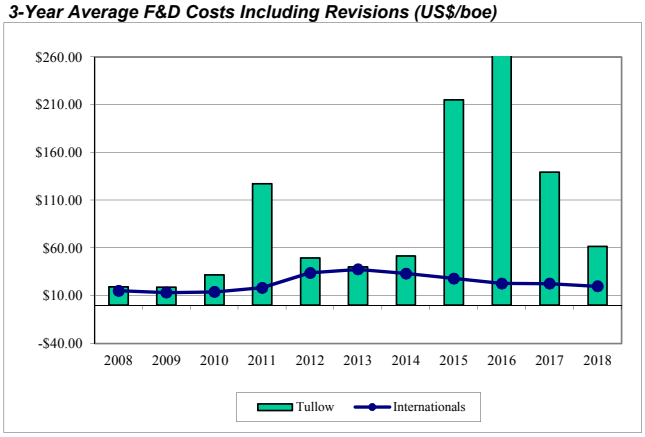
Proven Reserve Additions by Region (million boe)



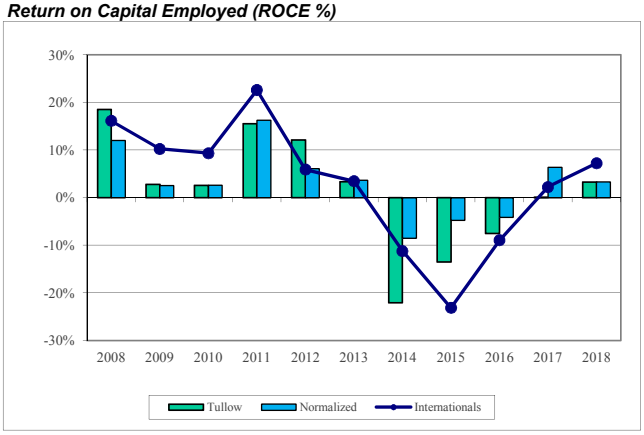
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



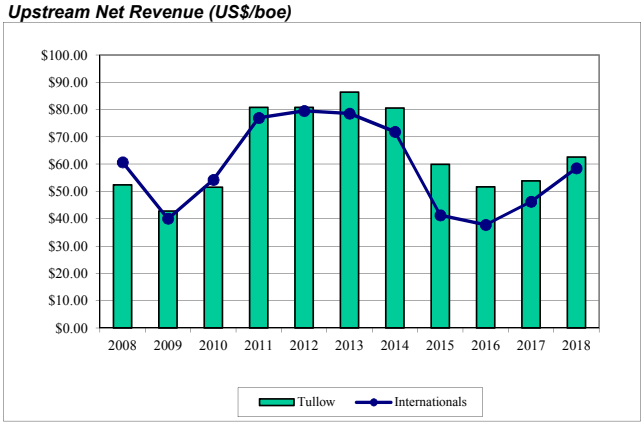
Source: BMO Capital Markets, Company Reports

Tullow Oil plc (TLW - LN)

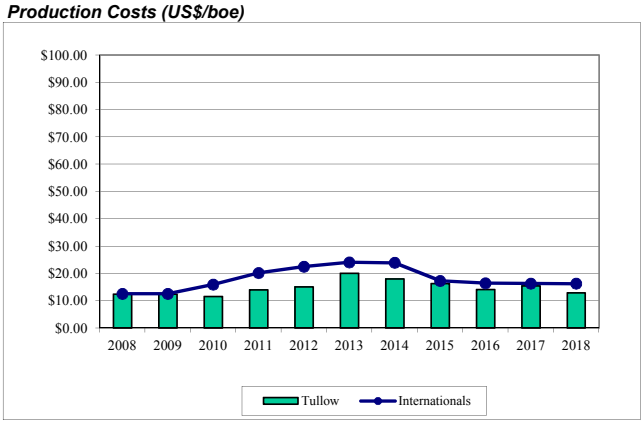
US$, net

International

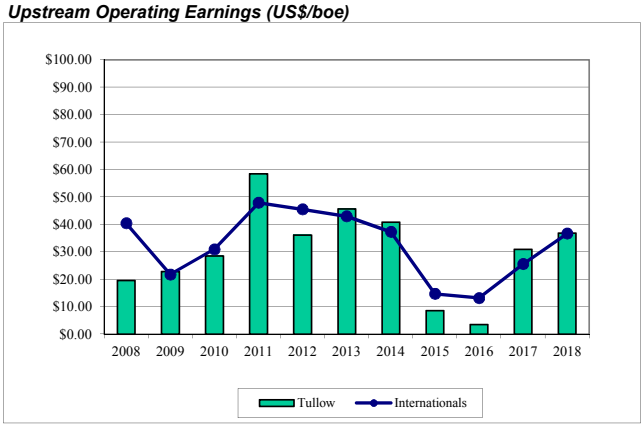
Upstream Net Revenue (US$/boe)



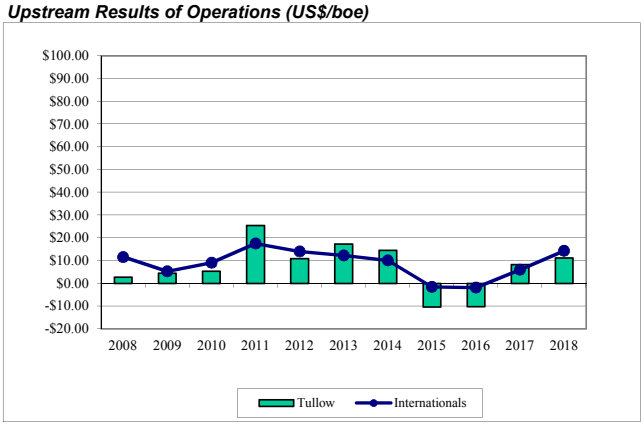
Production Costs (US$/boe)



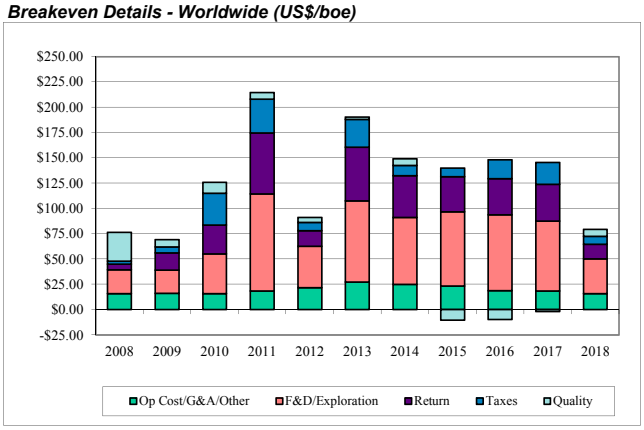
Upstream Operating Earnings (US$/boe)



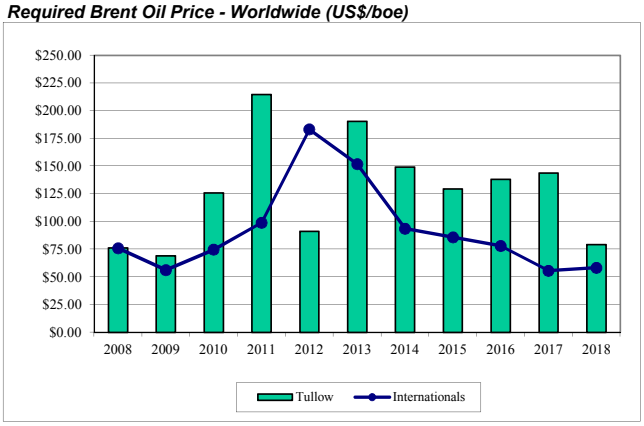
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Tullow Oil plc (TLW - LN)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	1,281	912	1,090	2,304	2,344	2,647	2,213	1,607	1,270	1,723	1,859
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	-	-	-
Total Revenue and Other Income	1,281	912	1,090	2,304	2,344	2,647	2,213	1,607	1,270	1,723	1,859
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	303	266	244	397	437	615	495	435	346	495	382
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	420	83	155	121	671	417	406	749	723	143	295
General and Administrative	80	78	90	123	191	219	192	194	116	95	90
Depreciation, Depletion and Amortization	375	358	367	534	562	592	622	580	467	574	584
Interest, net	80	59	55	86	49	48	134	145	172	310	270
Other	(79)	58	28	(27)	20	473	2,412	801	354	404	(23)
Earnings Before Income Tax	103	11	151	1,071	413	284	(2,047)	(1,297)	(908)	(299)	260
Current Income Taxes	217	164	132	186	381	6	(127)	91	48	34	134
Future Income Taxes	(81)	(161)	(53)	198	69	92	(281)	(352)	(359)	(145)	41
Total Income Taxes	135	3	79	384	450	97	(408)	(260)	(311)	(111)	175
Minority Interest	(6)	(5)	(19)	(40)	(42)	(47)	84	2	(3)	(1)	(1)
Earnings From Continuing Operations	(38)	3	53	647	(78)	140	(1,556)	(1,035)	(600)	(190)	85
Discontinued Operations/Extraordinary Items	452	21	1	2	703	30	-	-	-	-	-
Cumulative Change in Accounting Principle	-	-	-	-	-	-	-	-	-	-	-
Net Earnings	413	24	54	649	624	169	(1,556)	(1,035)	(600)	(190)	85
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	413	24	54	649	624	169	(1,556)	(1,035)	(600)	(190)	85

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	(38)	3	53	647	(78)	140	(1,556)	(1,035)	(600)	(190)	85
Charges and Credits Not Impacting Cash	844	463	526	688	1,264	1,485	3,008	1,789	1,525	1,112	938
Other	14	(67)	97	326	327	24	93	213	(236)	451	162
Cash Flow From Operations	819	399	676	1,661	1,513	1,649	1,545	967	690	1,373	1,185
Change in Working Capital / Other	127	(125)	56	71	8	97	(63)	384	(177)	(150)	19
Net Cash From Operating Activities	946	274	732	1,731	1,520	1,745	1,482	1,351	513	1,223	1,204
Total Capital Expenditures	(853)	(1,187)	(2,632)	(1,654)	(1,849)	(2,009)	(2,353)	(2,112)	(1,031)	(308)	(441)
Acquisitions, net	528	17	7	(402)	2,570	(313)	21	56	63	8	10
Other	6	1	(167)	14	1	34	5	4	1	3	3
Net Cash From Investing Activities	(318)	(1,168)	(2,792)	(2,042)	722	(2,288)	(2,328)	(2,052)	(967)	(296)	(428)
Net Change in Debt	(111)	326	886	880	(1,843)	861	1,198	977	718	(1,428)	(647)
Net Change in Common Stock	15	622	1,453	87	25	6	3	4	10	768	-
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	(80)	(75)	(79)	(114)	(173)	(167)	(182)	-	-	-	-
Other	(105)	(155)	(111)	(574)	(207)	(136)	(211)	(235)	(329)	(268)	(235)
Net Cash From Financing Activities	(281)	717	2,149	279	(2,199)	564	808	746	399	(928)	(882)
Effect of Exchange Rate on Cash	77	(63)	(4)	0	(21)	1	4	(7)	(18)	4	1
Net Increase/(Decrease) in Cash	424	(239)	86	(31)	23	23	(34)	37	(74)	2	(104)
Cash and Equivalents, Beginning of Year	152	487	252	338	307	330	353	319	356	282	284
Cash and Equivalents, End of Year	576	248	338	307	330	353	319	356	282	284	180

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tullow Oil plc (TLW - LN)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	923	740	1,291	1,172	1,294	2,069	2,087	1,841	2,462	2,324	2,423
Net Property, Plant and Equipment	4,454	4,252	6,976	9,110	7,385	9,011	8,548	8,604	7,389	5,255	4,916
Other Assets	55	51	112	354	703	428	787	902	951	3,450	3,296
Total Assets	5,432	5,042	8,378	10,636	9,382	11,509	11,422	11,348	10,802	11,029	10,635
Total Current Liabilities	1,197	621	1,485	1,534	1,229	1,432	1,339	1,582	1,649	1,355	1,488
Long-term Debt	-	-	-	-	-	1,995	3,209	4,262	4,388	3,606	3,219
Deferred Income Taxes	644	466	466	1,031	1,076	1,588	1,508	1,165	1,292	1,101	1,075
Other Liabilities and Deferred Credits	1,165	1,564	2,558	3,306	1,755	1,047	1,346	1,164	1,230	2,250	1,959
Total Liabilities	3,006	2,651	4,509	5,870	4,060	6,062	7,401	8,173	8,559	8,312	7,742
Minority Interests	47	41	61	76	92	124	24	20	12	10	-
Common Shares	136	126	144	146	147	147	147	147	148	208	209
Contributed Surplus (Paid-in Capital)	298	263	252	552	585	603	606	610	619	1,327	1,344
Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Retained Earnings	866	1,291	2,839	3,441	3,931	3,985	2,306	1,336	778	608	649
Other / Comprehensive Income (Loss)	1,078	670	574	551	567	588	937	1,062	685	515	691
Total Shareholders' Equity	2,378	2,350	3,808	4,690	5,229	5,323	3,996	3,155	2,230	2,706	2,893
Total Liabilities and Shareholders' Equity	5,432	5,042	8,378	10,636	9,382	11,509	11,422	11,348	10,802	11,029	10,635

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	$52.44	$42.84	$51.65	$80.89	$80.88	$86.45	$80.62	$59.95	$51.73	$53.91	$62.63	$56.29	$61.75
Production Costs	$12.41	$12.47	$11.57	$13.94	$15.09	$20.07	$18.03	$16.24	$14.10	$15.49	$12.87	$14.19	$15.33
Exploration	$17.19	$3.88	$7.33	$4.23	$23.15	$13.63	$14.77	$27.94	$29.45	$4.49	$9.94	$13.48	$16.49
DD&A	$15.35	$16.82	$17.41	$18.74	$19.39	$19.33	$22.65	$21.65	$19.02	$17.97	$19.68	$18.86	$20.13
G&A/Other	$3.26	$3.64	$4.25	$4.31	$6.60	$7.14	$7.01	$7.22	$4.74	$2.98	$3.04	$3.50	$4.90
Pre-tax Results of Operations	$4.24	$6.03	$11.09	$39.67	$16.65	$26.28	$18.15	-$13.10	-$15.58	$12.97	$17.10	$6.26	$4.89
Income Taxes	$1.48	$1.53	$5.82	$14.22	$5.83	$9.00	$3.61	-$2.63	-$5.34	$4.80	$5.99	$2.22	$1.43
Results of Operations	$2.75	$4.50	$5.28	$25.45	$10.83	$17.29	$14.54	-$10.47	-$10.25	$8.18	$11.12	$4.04	$3.46

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tullow Oil plc (TLW - LN)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	155.1	118.4	113.4	126.3	131.2	117.0	74.8	47.7	43.6	38.6	17.8	33.3	44.5
Liquids Production (b/d)	41,096	38,630	38,904	56,986	57,534	64,384	62,740	65,479	60,000	81,096	78,356	73,151	69,534
Total Production (boe/d)	66,941	58,356	57,808	78,037	79,406	83,881	75,205	73,425	67,260	87,534	81,324	78,706	76,950
% Gas Production	39%	34%	33%	27%	28%	23%	17%	11%	11%	7%	4%	7%	10%
% Oil Production	61%	66%	67%	73%	72%	77%	83%	89%	89%	93%	96%	93%	90%
Proven Reserves:													
Closing Gas Reserves (bcf)	334.6	261.4	280.5	321.7	282.4	330.5	226.4	205.8	189.7	268.9	259.9	239.5	230.1
Closing Oil Reserves (mmbbls)	258.3	256.8	247.6	244.0	341.0	327.3	307.6	287.6	272.1	245.7	236.2	251.3	269.8
Closing Total Proven Reserves (mmboe)	314.1	300.4	294.4	297.6	388.1	382.4	345.3	321.9	303.7	290.5	279.5	291.3	308.2
% Gas Reserves	18%	15%	16%	18%	12%	14%	11%	11%	10%	15%	15%	14%	12%
% Oil Reserves	82%	85%	84%	82%	88%	86%	89%	89%	90%	85%	85%	86%	88%
Proven Reserve Life Index	12.9	14.1	14.0	10.4	13.4	12.5	12.6	12.0	12.4	9.1	9.4	10.3	11.1
Proven Reserve Additions:													
Gas Additions (bcf)	6.5	-30.0	60.5	87.3	8.6	90.8	-76.8	-3.2	-0.2	93.3	-2.5	90.6	10.6
Oil Additions (mmbbls)	140.2	12.6	5.0	17.2	118.0	9.8	3.2	3.9	6.4	3.2	19.1	28.7	35.8
Total Additions (mmboe)	141.3	7.6	15.1	31.8	119.4	24.9	-9.6	3.4	6.4	18.8	18.7	43.8	37.6
Addition Components (mmboe):													
Extensions, Discoveries and Additions	0.0	0.0	1.9	0.0	112.4	26.3	-6.9	0.0	0.0	0.0	0.0	0.0	-6.9
Net Acquisitions	-1.3	-3.4	0.3	22.3	0.2	-13.0	7.8	-1.7	0.0	0.0	-1.8	-1.8	4.4
Revisions of Estimates	142.6	11.0	12.9	9.4	6.8	11.7	-10.6	5.0	6.4	18.8	20.5	45.6	40.1
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	0.0%	0.0%	12.6%	0.0%	94.1%	105.4%	71.5%	0.0%	0.0%	0.0%	0.0%	0.0%	-18.3%
Net Acquisitions	-0.9%	-44.5%	2.0%	70.3%	0.2%	-52.1%	-81.4%	-49.5%	0.0%	0.0%	-9.5%	-4.0%	11.7%
Revisions of Estimates	100.9%	144.5%	85.4%	29.7%	5.7%	46.7%	109.9%	149.5%	100.0%	100.0%	109.5%	104.0%	106.6%
Additions as % of Production:													
Gas	11.5%	-69.4%	146.1%	189.4%	18.0%	212.6%	-281.3%	-18.4%	-1.3%	661.7%	-38.5%	248.2%	13.1%
Oil	934.7%	89.4%	35.2%	82.7%	561.9%	41.7%	14.0%	16.3%	29.2%	10.8%	66.8%	35.8%	28.2%
Total	578.2%	35.7%	71.5%	111.5%	412.1%	81.4%	-35.0%	12.6%	25.9%	58.7%	62.9%	50.8%	26.8%
Additions as % of Reserves:													
Gas	1.9%	-11.5%	21.6%	27.1%	3.0%	27.5%	-33.9%	-1.6%	-0.1%	34.7%	-1.0%	37.8%	4.6%
Oil	54.3%	4.9%	2.0%	7.0%	34.6%	3.0%	1.0%	1.4%	2.4%	1.3%	8.1%	11.4%	13.3%
Total	45.0%	2.5%	5.1%	10.7%	30.8%	6.5%	-2.8%	1.0%	2.1%	6.5%	6.7%	15.0%	12.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Exploration & Development	$939	$1,244	$3,200	$1,954	$2,135	$2,573	$2,941	$1,885	$1,110	$1,207	$499	$2,815	$7,640
Net Acquisitions	$0	$0	$0	$966	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Expenditures	$939	$1,244	$3,200	$2,919	$2,135	$2,573	$2,941	$1,885	$1,110	$1,207	$499	$2,815	$7,640
Expenditures as % of Total (US$million):													
Land & Seismic	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Exploration & Development	100.0%	100.0%	100.0%	66.9%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%
Net Acquisitions	0.0%	0.0%	0.0%	33.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Cashflow (US$million)	$442	$255	$676	$1,661	$1,513	$1,649	$1,545	$967	$690	$1,373	$1,185	$3,247	$5,759
Cashflow (US$/boe)	$18.09	$11.96	$32.06	$58.30	$52.20	$53.85	$56.27	$36.09	$28.09	$42.98	$39.91	$37.68	$41.01
Recycle Ratio	2.7x	0.1x	0.2x	0.6x	2.9x	0.8x	-0.2x	0.1x	0.2x	0.7x	1.6x	0.6x	0.2x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	$6.58	$113.22	$216.47	$207.49	$17.91	$67.82	-$168.85	$374.40	$174.33	$64.36	$24.38	$61.78	$230.25
Net Acquisition Costs	$0.00	$0.00	$0.00	$43.23	$0.00	$0.00	$0.00	$0.00	na	na	$0.00	$0.00	$0.00
All Sources (incl. revisions)	$6.58	$113.22	$212.16	$91.95	$17.88	$66.74	-$319.07	$374.40	$174.33	$64.36	$24.38	$64.27	$203.38
Exploration & Development (excl. revisions)	nm	nm	nm	nm	$18.99	$97.89	-$428.27	nm	nm	nm	nm	nm	-$1,112.68
Net Acquisition Costs	$0.00	$0.00	$0.00	$43.23	$0.00	$0.00	$0.00	$0.00	na	na	$0.00	$0.00	$0.00
All Sources (excl. revisions)	nm	nm	nm	nm	$18.96	$95.64	$2,205.60	nm	nm	nm	nm	-$1,593.45	-$3,076.67
Geographically Segmented Costs													
North America	na	na	na	na	na	na	na	na	na	na	na	na	na
South America	$6.58	$113.22	$212.16	$91.95	$17.88	$66.74	-$319.07	$374.40	$174.33	$64.36	$24.38	$37.32	$107.08

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Tullow Oil plc (TLW - LN)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	12.41	12.47	11.57	13.94	15.09	20.07	18.03	16.24	14.10	15.49	12.87	14.19	15.33
Exploration Expense	17.19	3.88	7.33	4.23	23.15	13.63	14.77	27.94	29.45	4.49	9.94	13.48	16.49
G&A/Other	3.26	3.64	4.25	4.31	6.60	7.14	7.01	7.22	4.74	2.98	3.04	3.50	4.90
F&D Costs (1-Year)	6.58	18.95	31.91	91.95	17.88	66.74	51.41	45.34	45.34	64.36	24.38	44.69	46.17
Return on Capital	5.39	17.20	28.43	59.97	15.34	52.95	41.18	34.53	35.68	36.61	14.31	28.76	32.32
Income Taxes	2.90	5.84	31.35	33.52	8.26	27.55	10.23	8.67	18.58	21.48	7.71	15.76	13.35
Breakeven Oil Price	**47.74**	**61.99**	**114.83**	**207.92**	**86.31**	**188.08**	**142.63**	**139.96**	**147.90**	**145.41**	**72.25**	**120.39**	**128.56**
Quality Differential	28.50	7.07	11.04	6.65	4.73	2.21	6.53	(10.48)	(9.82)	(1.82)	6.94	(1.57)	(1.73)
Required Brent Price	**76.24**	**69.06**	**125.87**	**214.57**	**91.03**	**190.29**	**149.17**	**129.48**	**138.07**	**143.59**	**79.19**	**118.82**	**126.84**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	13.50	14.33	13.83	16.07	17.42	22.23	19.57	17.03	14.99	15.95	13.05	14.67	16.04
Exploration Expense	18.69	4.46	8.77	4.88	26.72	15.09	16.04	29.30	31.31	4.62	10.09	13.93	17.25
G&A/Other	3.55	4.19	5.08	4.97	7.61	7.90	7.61	7.57	5.04	3.07	3.09	3.62	5.13
F&D Costs (1-Year)	6.61	19.10	32.87	118.72	17.98	44.87	53.84	38.90	38.90	43.88	25.01	35.93	40.11
Return on Capital	5.69	18.98	32.81	82.11	16.89	37.22	44.43	29.41	30.37	24.14	13.98	22.66	27.77
Income Taxes	3.07	6.45	36.18	45.89	9.10	19.37	11.04	7.38	15.81	14.17	7.53	12.42	11.47
Breakeven Oil Price	**51.10**	**67.50**	**129.54**	**272.64**	**95.72**	**146.68**	**152.52**	**129.59**	**136.42**	**105.82**	**72.75**	**103.23**	**117.77**
Quality Differential	31.00	8.12	13.20	7.66	5.45	2.45	7.09	(10.99)	(10.45)	(1.87)	7.04	(1.76)	(1.83)
Required Brent Price	**82.10**	**75.63**	**142.74**	**280.30**	**101.17**	**149.13**	**159.62**	**118.60**	**125.98**	**103.95**	**79.79**	**101.47**	**115.93**

Source: BMO Capital Markets, Company Reports

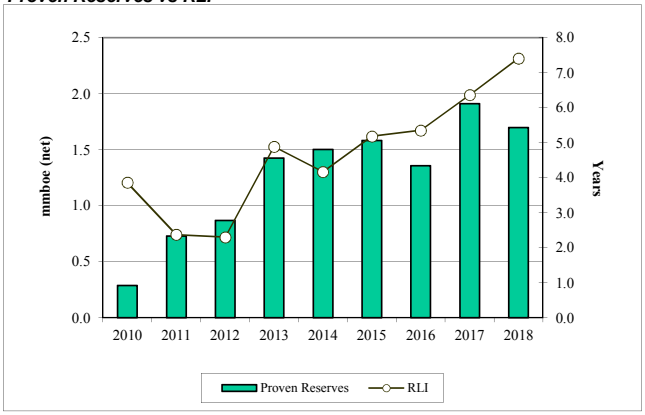
Valeura Energy (VLE - TSX)

US$, net

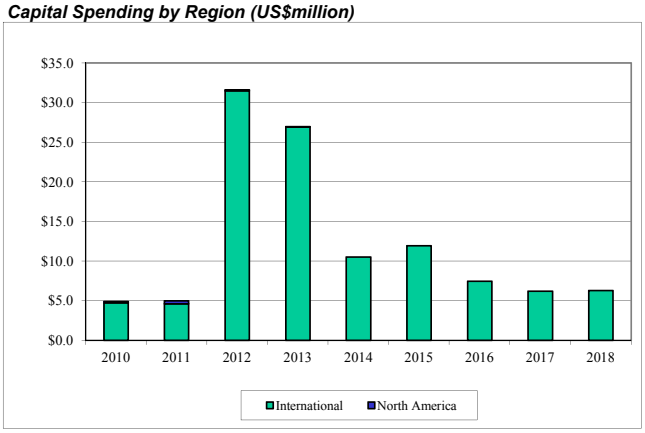
- Valeura's loss from operations narrowed to $3.47/boe in 2018 versus a loss of $6.06/boe in 2017.
- The company reported a loss on capital of 8.6% in 2018.
- One-year F&D costs were recorded at $460.52/boe. On a realized oil:gas price ratio basis, F&D costs came in at $39.12/boe.
- Based on 2018 results, we estimate Valeura's breakeven Brent-equivalent oil price of $78.40/boe on a realized ratio basis.

Notes: Financial figures have been converted from CAD to U.S. Dollars using average annual exchange rate.

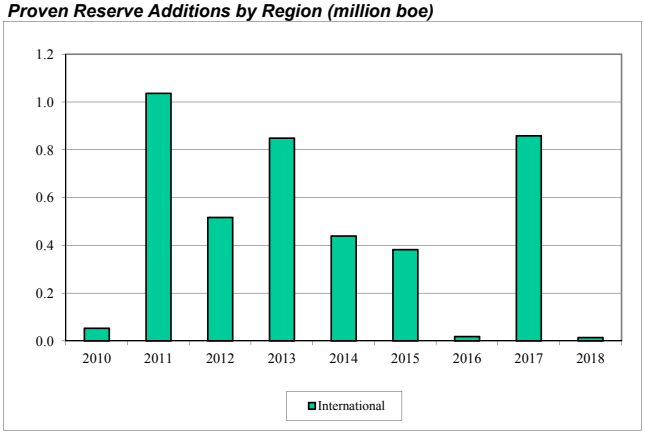
Proven Reserves vs RLI



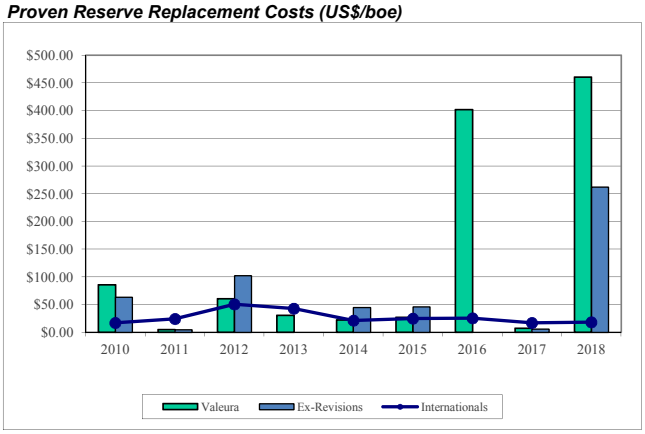
Capital Spending by Region (US$million)



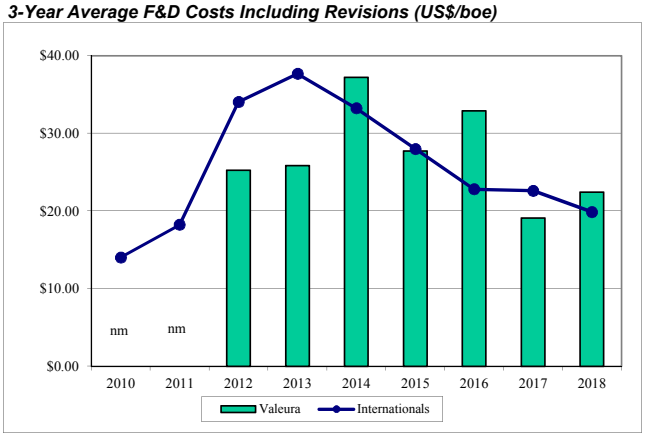
Proven Reserve Additions by Region (million boe)



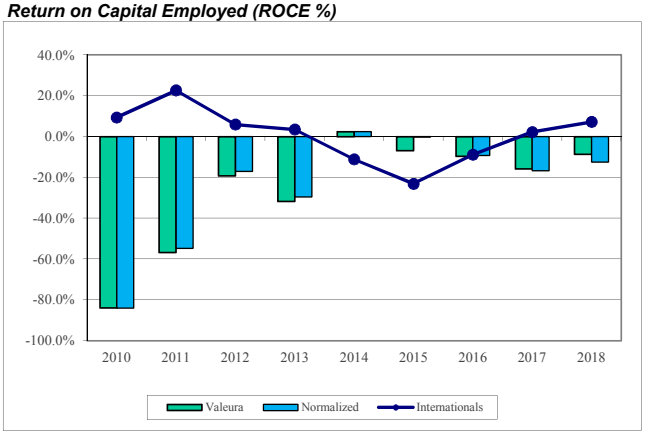
Proven Reserve Replacement Costs (US$/boe)



3-Year Average F&D Costs Including Revisions (US$/boe)



Return on Capital Employed (ROCE %)



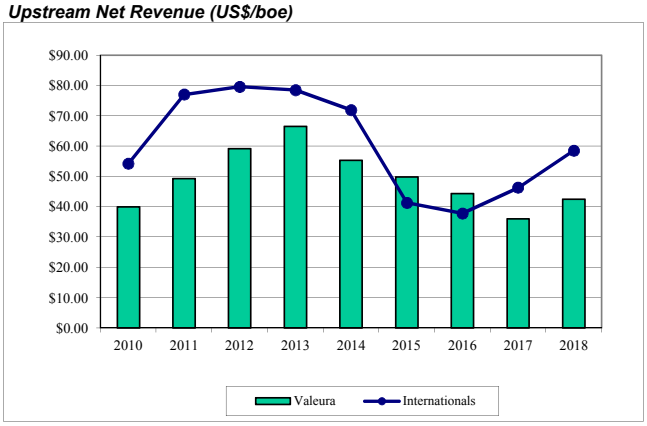
Source: BMO Capital Markets, Company Reports

Valeura Energy (VLE - TSX)

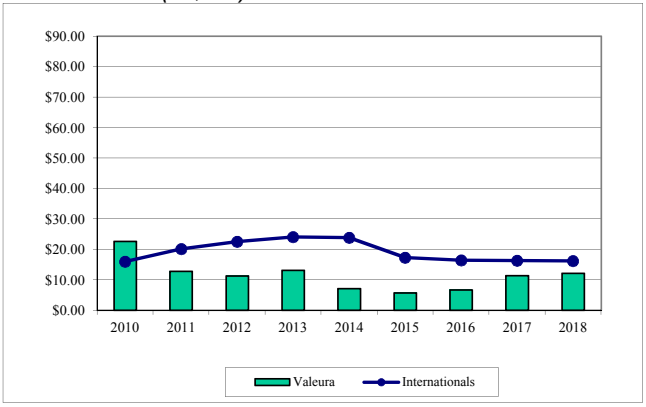
US$, net

International

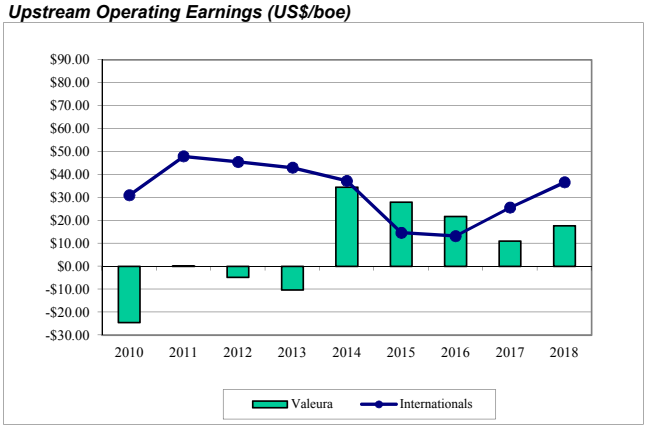
Upstream Net Revenue (US$/boe)



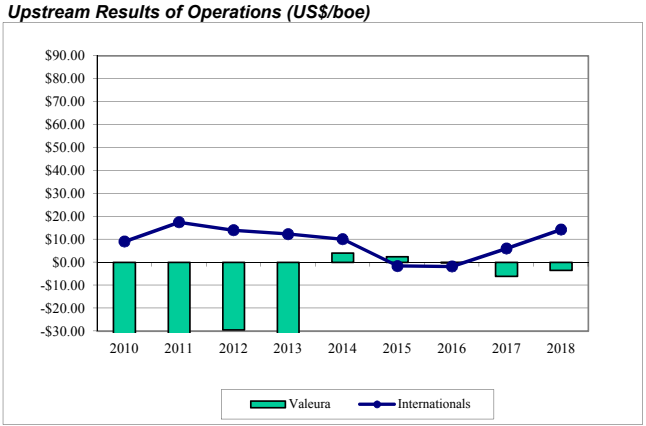
Production Costs (US$/boe)



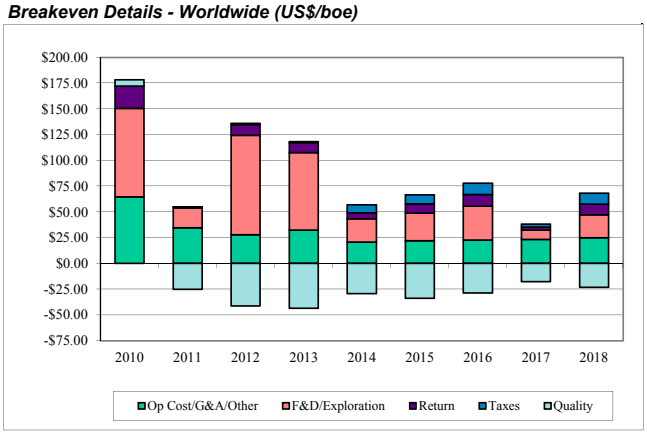
Upstream Operating Earnings (US$/boe)



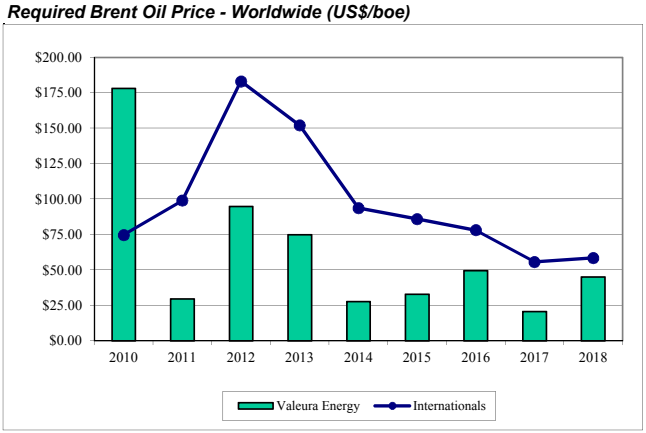
Upstream Results of Operations (US$/boe)



Breakeven Details - Worldwide (US$/boe)



Required Brent Oil Price - Worldwide (US$/boe)



Source: BMO Capital Markets, Company Reports

Valeura Energy (VLE - TSX)

Financial Statements

Exhibit 1: Income Statement (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Upstream Revenue, net of Royalties	-	-	3	15	22	19	20	15	11	10	8
Midstream / Downstream Revenue	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	0	0	1	1	0	1	1	1	2
Total Revenue and Other Income	-	-	3	15	22	19	20	15	11	11	10
Crude Oil and Product Purchases	-	-	-	-	-	-	-	-	-	-	-
Production and Transportation Expenses	-	-	2	4	4	4	3	2	2	3	3
Marketing Expenses	-	-	-	-	-	-	-	-	-	-	-
Exploration / Dry Hole Costs	-	-	-	4	14	13	0	-	-	1	-
General and Administrative	-	-	3	7	6	6	5	5	4	4	3
Depreciation, Depletion and Amortization	-	-	3	10	10	8	9	7	6	7	6
Interest, net	-	-	0	0	1	1	1	1	1	1	2
Other	-	-	4	6	5	7	0	1	4	3	1
Earnings Before Income Tax	-	-	(9)	(17)	(18)	(18)	2	0	(5)	(8)	(5)
Current Income Taxes	-	-	-	-	-	-	-	-	-	2	1
Future Income Taxes	-	-	-	(1)	(2)	(1)	1	1	(0)	(4)	0
Total Income Taxes	-	-	-	(1)	(2)	(1)	1	1	(0)	(2)	1
Minority Interest	-	-	-	-	-	-	-	-	-	-	-
Earnings From Continuing Operations	-	-	(9)	(16)	(16)	(17)	1	(0)	(5)	(6)	(5)
Discontinued Operations/Extraordinary Items	-	-	-	-	-	-	0	-	-	-	-
Cumulative Change in Accounting Principle	-	-	(4)	(8)	2	(6)	-	-	-	-	-
Net Earnings	-	-	(13)	(24)	(14)	(23)	1	(0)	(5)	(6)	(5)
Preferred Stock Dividends	-	-	-	-	-	-	-	-	-	-	-
Net Earnings to Common Shareholders	-	-	(13)	(24)	(14)	(23)	1	(0)	(5)	(6)	(5)

Source: BMO Capital Markets, Company Reports

Exhibit 2: Statement of Cash Flows (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Net Earnings	-	-	(9)	(16)	(16)	(17)	1	(0)	(5)	(6)	(5)
Charges and Credits Not Impacting Cash	-	-	3	16	26	23	11	8	6	4	6
Other	-	-	3	3	2	4	0	1	3	2	2
Cash Flow From Operations	-	-	(3)	2	12	10	12	8	5	(1)	2
Change in Working Capital / Other	-	-	(0)	(2)	(2)	2	(1)	1	-	4	(3)
Net Cash From Operating Activities	-	-	(3)	0	10	12	11	9	4.755	2.972	(0.451)
Total Capital Expenditures	-	-	(7)	(17)	(31)	(26)	(10)	(10)	(7)	(10)	(6)
Acquisitions, net	-	-	6	(56)	0	0	0	-	-	4	-
Other	-	-	(2)	(4)	12	(7)	(2)	2	(1)	2	0
Net Cash From Investing Activities	-	-	(3)	(77)	(19)	(33)	(12)	(9)	(8)	(4)	(6)
Net Change in Debt	-	-	(4)	-	-	-	-	-	-	-	-
Net Change in Common Stock	-	-	28	82	14	-	-	-	-	8	43
Net Change in Preferred Stock	-	-	-	-	-	-	-	-	-	-	-
Cash Dividends Paid	-	-	-	-	-	-	-	-	-	-	-
Other	-	-	-	-	-	-	-	-	0	-	1
Net Cash From Financing Activities	-	-	25	82	14	-	-	-	0	8	44
Effect of Exchange Rate on Cash	-	-	(0)	(0)	0	(0)	0	0	(0)	0	2
Net Increase/(Decrease) in Cash	-	-	19	5	5	(22)	(1)	1	(4)	7	40
Cash and Equivalents, Beginning of Year	-	-	-	20	24	28	6	5	5	2	9
Cash and Equivalents, End of Year	-	-	19	24	29	6	5	5	2	9	48

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Valeura Energy (VLE - TSX)

Exhibit 3: Balance Sheet (US$million)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Total Current Assets	-	-	21	39	36	14	13	10	19	13	57
Net Property, Plant and Equipment	-	-	16	83	89	80	76	68	38	54	42
Other Assets	-	-	0	-	-	-	1	1	1	3	0
Total Assets	-	-	38	122	126	94	90	79	57	69	99
Total Current Liabilities	-	-	2	9	12	7	4	5	3	10	11
Long-term Debt	-	-	-	-	-	-	-	-	-	-	-
Deferred Income Taxes	-	-	-	8	7	5	6	5	4	2	1
Other Liabilities and Deferred Credits	-	-	0	8	9	9	10	11	6	15	12
Total Liabilities	-	-	3	25	28	21	19	20	13	27	25
Minority Interests	-	-	-	-	-	-	-	-	-	-	-
Common Shares	-	-	45	123	136	132	123	106	103	113	158
Contributed Surplus (Paid-in Capital)	-	-	3	8	10	11	11	10	15	15	16
Preferred Stock	-	-	-	6	6	6	5	5	-	-	-
Retained Earnings	-	-	(13)	(33)	(48)	(64)	(58)	(51)	(54)	(61)	(67)
Other / Comprehensive Income (Loss)	-	-	-	(8)	(6)	(11)	(11)	(11)	(20)	(25)	(33)
Total Shareholders' Equity	-	-	35	97	97	74	71	59	44	42	74
Total Liabilities and Shareholders' Equity	-	-	38	122	126	94	90	79	57	69	99
Return on Capital Employed (ROCE)	-	-	**-83.9%**	**-56.8%**	**-19.3%**	**-31.7%**	**2.3%**	**-6.9%**	**-9.7%**	**-15.8%**	**-8.6%**

Source: BMO Capital Markets, Company Reports

Exhibit 4: Upstream Netbacks (US$/boe)

												Weighted Average	
	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Worldwide													
Net Revenue	-	-	$39.94	$49.30	$59.23	$66.58	$55.31	$49.91	$44.35	$36.03	$42.46	$40.61	$46.23
Production Costs	-	-	$22.66	$12.86	$11.28	$13.17	$7.13	$5.75	$6.64	$11.35	$12.15	$10.06	$8.42
Exploration	-	-	$0.00	$14.57	$36.09	$44.37	$0.19	$0.00	$0.00	$1.81	$0.00	$0.70	$0.42
DD&A	-	-	$39.46	$32.68	$27.74	$27.95	$25.60	$23.07	$22.13	$23.16	$24.61	$23.25	$23.80
G&A / Other	-	-	$41.80	$21.69	$16.67	$19.29	$13.45	$16.15	$16.00	$11.82	$12.63	$13.41	$14.00
Pre-Tax Results of Operations	-	-	-$63.98	-$32.50	-$32.55	-$38.21	$8.94	$4.93	-$0.43	-$12.12	-$6.94	-$6.82	-$0.42
Income Taxes	-	-	$0.00	-$1.17	-$3.18	-$2.83	$4.91	$2.47	-$0.22	-$6.06	-$3.47	-$3.41	-$0.21
Results of Operations	-	-	-$63.98	-$31.33	-$29.37	-$35.38	$4.02	$2.47	-$0.22	-$6.06	-$3.47	-$3.41	-$0.21

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Valeura Energy (VLE - TSX)

Exhibit 5: Reserve Replacement Performance

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Production:													
Gas Production (mmcf/d)	-	-	0.8	5.1	6.1	4.8	5.9	5.0	4.1	4.9	3.7	4.2	4.7
Liquids Production (b/d)	-	-	74	0	11	7	7	7	8	7	10	8	8
Total Production (boe/d)	-	-	205	842	1,034	799	989	837	695	823	628	715	794
% Gas Production	-	-	64%	100%	99%	99%	99%	99%	99%	99%	98%	99%	99%
% Oil Production	-	-	36%	0%	1%	1%	1%	1%	1%	1%	2%	1%	1%
Proven Reserves:													
Closing Gas Reserves (bcf)	-	-	0.9	4.4	4.9	8.1	8.6	9.1	8.1	11.5	10.1	9.9	9.5
Closing Oil Reserves (mmbbls)	-	-	0.1	0.0	0.0	0.1	0.1	0.1	0.0	0.0	0.0	0.0	0.0
Closing Total Proven Reserves (mmboe)	-	-	0.3	0.7	0.9	1.4	1.5	1.6	1.4	1.9	1.7	1.7	1.6
% Gas Reserves	-	-	54%	100%	95%	95%	95%	96%	100%	100%	99%	100%	98%
% Oil Reserves	-	-	46%	0%	5%	5%	5%	4%	0%	0%	1%	0%	2%
Proven Reserve Life Index	-	-	3.9	2.4	2.3	4.9	4.2	5.2	5.4	6.4	7.4	6.4	5.7
Proven Reserve Additions:													
Gas Additions (bcf)	-	-	0.3	6.2	2.8	4.9	2.7	2.3	0.5	5.1	0.0	5.7	10.6
Oil Additions (mmbbls)	-	-	0.0	0.0	0.0	0.0	0.0	0.0	-0.1	0.0	0.0	-0.1	-0.1
Total Additions (mmboe)	-	-	0.1	1.0	0.5	0.8	0.4	0.4	0.0	0.9	0.0	0.9	1.7
Addition Components (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0	0.0	0.3	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.5
Net Acquisitions	-	-	0.1	1.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	1.1	1.1
Revisions of Estimates	-	-	0.0	0.0	0.2	0.8	0.2	0.2	0.0	-0.2	0.0	-0.2	0.2
Components as % of Total Additions (mmboe):													
Extensions, Discoveries and Additions	-	-	0.0%	0.0%	53.3%	0.0%	50.0%	58.6%	0.0%	0.0%	175.8%	2.7%	27.3%
Net Acquisitions	-	-	135.9%	100.0%	5.8%	0.0%	0.0%	0.0%	0.0%	125.6%	0.0%	121.1%	63.0%
Revisions of Estimates	-	-	-35.9%	0.0%	40.9%	100.0%	50.0%	41.4%	100.0%	-25.6%	-75.8%	-23.8%	9.7%
Additions as % of Production:													
Gas	-	-	93.8%	336.9%	125.7%	282.6%	123.5%	125.4%	35.3%	287.4%	0.3%	122.1%	123.2%
Oil	-	-	32.3%	0.0%	1140.0%	1200.0%	-133.3%	100.0%	-2333.3%	66.7%	350.0%	-605.8%	-392.3%
Total	-	-	71.6%	337.2%	136.9%	290.7%	121.6%	125.2%	7.3%	285.6%	6.0%	113.6%	118.1%
Additions as % of Reserves:													
Gas	-	-	28.7%	142.2%	56.9%	60.5%	30.8%	25.1%	6.5%	44.9%	0.0%	57.4%	112.0%
Oil	-	-	6.6%	100.0%	107.5%	41.9%	-5.1%	3.8%	-1166.7%	40.0%	93.3%	-691.7%	-174.7%
Total	-	-	18.5%	142.2%	59.5%	59.5%	29.2%	24.2%	1.4%	44.9%	0.8%	53.7%	106.2%

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
Capital Expenditures (US$million):													
Land & Seismic	-	-	$4	$1	$5	$8	$2	$5	$1	$1	$0	$2	$9
Exploration & Development	-	-	$1	$4	$26	$18	$8	$5	$7	$9	$6	$22	$36
Net Acquisitions	-	-	$0	$0	$0	$0	$0	$0	$0	-$4	$0	-$4	-$4
Total Expenditures	-	-	$5	$5	$31	$26	$10	$10	$7	$6	$6	$20	$40
Expenditures as % of Total (US$million):													
Land & Seismic	-	-	81.7%	24.2%	16.6%	31.9%	18.2%	48.6%	11.5%	11.7%	2.9%	8.8%	21.4%
Exploration & Development	-	-	18.3%	75.8%	83.4%	68.1%	86.0%	51.4%	88.5%	149.1%	97.1%	110.1%	89.1%
Net Acquisitions	-	-	0.0%	0.0%	0.0%	0.0%	-4.2%	0.0%	0.0%	-60.8%	0.0%	-19.0%	-10.5%
Cashflow (US$million)	-	-	-$3	$2	$12	$10	$12	$8	$5	-$1	$2	$6	$26
Cashflow (US$/boe)	-	-	-$35.53	$8.11	$31.23	$33.24	$32.85	$26.07	$19.42	-$3.85	$10.68	$7.94	$17.96
Recycle Ratio	-	-	-0.4x	1.8x	na	na	na	na	na	na	na	0.4x	0.8x

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	3-Year	5-Year
F&D Costs (US$/boe):													
Exploration & Development (incl. revisions)	-	-	-$238.93	nm	$64.02	$30.83	$23.31	$27.02	$402.10	-$45.59	$460.52	-$126.74	$69.95
Net Acquisition Costs	-	-	$0.00	$0.00	$0.00	na	na	na	na	-$3.52	na	-$3.52	-$3.90
All Sources (incl. revisions)	-	-	$85.85	$4.63	$60.30	$30.83	$22.38	$27.02	$402.10	$7.26	$460.52	$22.44	$23.45
Exploration & Development (excl. revisions)	-	-	nm	nm	$113.15	nm	$46.64	$46.10	nm	nm	nm	$105.31	$94.82
Net Acquisition Costs	-	-	$0.00	$0.00	$0.00	na	na	na	na	-$3.52	na	-$3.52	-$3.90
All Sources (excl. revisions)	-	-	$63.16	$4.63	$102.03	na	$44.76	nm	nm	nm	nm	$18.13	$25.97
Geographically Segmented Costs													
North America	-	-	na	na	na	na	na	na	na	na	na	na	na
Turkey	-	-	$85.85	$4.63	$60.30	$30.83	$22.38	$27.02	$402.10	$7.26	$460.52	$22.44	$23.45

Note: Reserve estimates reported after royalties
Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Valeura Energy (VLE - TSX)

Breakeven Analysis

Exhibit 6: Breakeven Oil Price Analysis (US$/boe)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	22.66	12.86	11.28	13.17	7.13	5.75	6.64	11.35	12.15	10.06	8.42
Exploration Expense	-	-	-	14.57	36.09	44.37	0.19	-	-	1.81	-	0.70	0.42
G&A/Other	-	-	41.80	21.69	16.67	19.29	13.45	16.15	16.00	11.82	12.63	13.41	14.00
F&D Costs (1-Year)	-	-	85.85	4.63	60.30	30.83	22.38	27.02	32.89	7.26	22.44	20.86	22.40
Return on Capital	-	-	21.94	0.82	10.38	9.66	6.10	8.85	11.23	2.91	10.42	8.30	8.03
Income Taxes	-	-	-	0.03	1.13	0.77	7.46	8.85	11.23	2.91	10.42	8.30	8.36
Breakeven Oil Price	**-**	**-**	**172.25**	**54.60**	**135.85**	**118.10**	**56.71**	**66.62**	**77.99**	**38.07**	**68.06**	**61.63**	**61.63**
Quality Differential	-	-	5.87	(25.15)	(41.20)	(43.42)	(29.19)	(33.82)	(28.67)	(17.61)	(23.16)	(23.15)	(26.49)
Required Brent Price	**-**	**-**	**178.12**	**29.45**	**94.64**	**74.68**	**27.52**	**32.80**	**49.32**	**20.46**	**44.90**	**38.48**	**35.14**

Source: BMO Capital Markets, Company Reports

Exhibit 7: Breakeven Oil Price Analysis (US$/boe, Realized Oil/Gas Price Ratio)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	41.49	24.42	15.31	17.37	7.01	4.31	8.82	19.36	24.26	16.35	9.71
Exploration Expense	-	-	-	27.68	48.97	58.51	0.19	-	-	3.10	-	1.13	0.49
G&A/Other	-	-	76.52	41.20	22.62	25.44	13.23	12.09	21.25	20.16	25.23	21.80	16.15
F&D Costs (1-Year)	-	-	219.81	9.48	79.84	40.37	22.00	20.22	28.96	12.44	39.12	26.84	24.55
Return on Capital	-	-	62.16	1.68	13.96	12.78	6.00	6.62	9.87	4.97	18.02	10.73	8.83
Income Taxes	-	-	-	0.06	1.51	1.02	7.33	6.62	9.87	4.97	18.02	10.73	9.19
Breakeven Oil Price	**-**	**-**	**399.97**	**104.53**	**182.21**	**155.49**	**55.76**	**49.86**	**78.76**	**64.99**	**124.65**	**87.57**	**68.92**
Quality Differential	-	-	10.74	(47.77)	(55.91)	(57.25)	(28.71)	(25.32)	(38.07)	(30.04)	(46.25)	(38.12)	(33.68)
Required Brent Price	**-**	**-**	**410.71**	**56.75**	**126.30**	**98.24**	**27.05**	**24.55**	**40.69**	**34.95**	**78.40**	**49.45**	**35.24**

Source: BMO Capital Markets, Company Reports

Exhibit 8: Breakeven Oil Price Analysis (US$/boe, Proved Developed Reserves)

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	Weighted Average 3-Year	Weighted Average 5-Year
Operating Costs	-	-	41.49	24.42	15.31	17.37	7.01	4.31	8.82	19.36	24.26	16.35	9.71
Exploration Expense	-	-	-	27.68	48.97	58.51	0.19	-	-	3.10	-	1.13	0.49
G&A/Other	-	-	76.52	41.20	22.62	25.44	13.23	12.09	21.25	20.16	25.23	21.80	16.15
F&D Costs (1-Year)	-	-	21.13	17.14	137.62	51.94	25.01	34.53	62.02	32.39	57.90	50.77	42.37
Return on Capital	-	-	6.00	3.02	23.92	16.33	6.81	11.32	21.13	12.93	26.63	20.29	15.16
Income Taxes	-	-	-	0.11	2.59	1.31	8.32	11.32	21.13	12.93	26.63	20.29	15.78
Breakeven Oil Price	**-**	**-**	**145.14**	**113.58**	**251.03**	**170.90**	**60.57**	**73.57**	**134.36**	**100.87**	**160.64**	**130.63**	**99.65**
Quality Differential	-	-	10.74	(47.77)	(55.91)	(57.25)	(28.71)	(25.32)	(38.07)	(30.04)	(46.25)	(38.12)	(33.68)
Required Brent Price	**-**	**-**	**155.88**	**65.80**	**195.12**	**113.65**	**31.86**	**48.25**	**96.28**	**70.83**	**114.39**	**92.51**	**65.97**

Source: BMO Capital Markets, Company Reports

See pages F1 to F4 for analyst coverage.

Analyst Coverage

Company	Ticker	Exchange	Analyst	Legal Entity
Advantage Oil & Gas	AAV	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
ARC Resources	ARX	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Athabasca Oil	ATH	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Birchcliff Energy	BIR	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Canadian Natural Res.	CNQ	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Cenovus Energy	CVE	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Encana*	ECA	NYSE	Randy Ollenberger	BMO Nesbitt Burns Inc.
Husky Energy	HSE	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Imperial Oil	IMO	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
MEG Energy	MEG	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Peyto Exploration & Development	PEY	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Suncor Energy	SU	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.
Tourmaline Oil	TOU	TSX	Randy Ollenberger	BMO Nesbitt Burns Inc.

Company	Ticker	Exchange	Analyst	Legal Entity
Bonterra Energy	BNE	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Bonavista Energy	BNP	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Baytex Energy	BTE	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Cardinal Energy	CJ	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Crescent Point Energy	CPG	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Crew Energy	CR	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Delphi Energy	DEE	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Enerplus	ERF	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Freehold Royalties	FRU	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Kelt Exploration	KEL	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
NuVista Energy	NVA	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Obsidian Energy	OBE	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Pengrowth Energy	PGF	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Pipestone Energy	PIPE	VSX	Ray Kwan	BMO Nesbitt Burns Inc.
Painted Pony Energy	PONY	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Paramount Resources	POU	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
PrairieSky Royalty	PSK	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Surge Energy	SGY	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
TORC Oil & Gas	TOG	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Tamarack Valley Energy	TVE	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Vermilion Energy	VET	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Seven Generations Energy	VII	TSX	Ray Kwan	BMO Nesbitt Burns Inc.
Whitecap Resources	WCP	TSX	Ray Kwan	BMO Nesbitt Burns Inc.

Company	Ticker	Exchange	Analyst	Legal Entity
Bonavista Energy	BNP	TSX	Mike Murphy	BMO Nesbitt Burns Inc.
Crew Energy	CR	TSX	Mike Murphy	BMO Nesbitt Burns Inc.
Delphi Energy	DEE	TSX	Mike Murphy	BMO Nesbitt Burns Inc.
Pipestone Energy	PIPE	VSX	Mike Murphy	BMO Nesbitt Burns Inc.
Painted Pony Energy	PONY	TSX	Mike Murphy	BMO Nesbitt Burns Inc.

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Analyst Coverage

Company	Ticker	Exchange	Analyst	Legal Entity
Amerisur Resources	AMER	LSE	David Round	BMO Capital Markets Limited
Africa Oil	AOI	TSX	David Round	BMO Capital Markets Limited
Cairn Energy	CNE	LSE	David Round	BMO Capital Markets Limited
EnQuest	ENQ	LSE	David Round	BMO Capital Markets Limited
Genel Energy	GENL	LSE	David Round	BMO Capital Markets Limited
Gran Tierra Energy	GTE	TSX	David Round	BMO Capital Markets Limited
Hurricane Energy	HUR	LSE	David Round	BMO Capital Markets Limited
IGas Energy	IGAS	LSE	David Round	BMO Capital Markets Limited
International Petroleum Corporation	IPCO	TSX	David Round	BMO Capital Markets Limited
Jersey Oil and Gas	JOG	AIM	David Round	BMO Capital Markets Limited
Jadestone Energy	JSE	LSE	David Round	BMO Capital Markets Limited
Kosmos Energy	KOS	NYSE	David Round	BMO Capital Markets Limited
Lekoil	LEK	LSE	David Round	BMO Capital Markets Limited
Lundin Petroleum AB	LUPE	OMX	David Round	BMO Capital Markets Limited
Premier Oil	PMO	LSE	David Round	BMO Capital Markets Limited
President Energy	PPC	LSE	David Round	BMO Capital Markets Limited
Providence Resources	PVR	LSE	David Round	BMO Capital Markets Limited
Rockhopper Exploration	RKH	LSE	David Round	BMO Capital Markets Limited
SOCO International	SIA	LSE	David Round	BMO Capital Markets Limited
Tullow Oil	TLW	LSE	David Round	BMO Capital Markets Limited

Company	Ticker	Exchange	Analyst	Legal Entity
Akita Drilling	AKT.A	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Black Diamond Group	BDI	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
CES Energy Solutions	CEU	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Calfrac Well Services	CFW	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Computer Modelling Group	CMG	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Enerflex	EFX	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Ensign Energy Services	ESI	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Mullen Group	MTL	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Precision Drilling	PD	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
PHX Energy Services	PHX	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Pason Systems	PSI	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
ShawCor	SCL	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Secure Energy Services	SES	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Source Energy Services	SHLE	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
STEP Energy Services	STEP	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Trican Well Service	TCW	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Tervita Corporation	TEV	TSX	Michael Mazar	BMO Nesbitt Burns Inc.
Total Energy Services	TOT	TSX	Michael Mazar	BMO Nesbitt Burns Inc.

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Analyst Coverage

Company	Ticker	Exchange	Analyst	Legal Entity
Apache	APA	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Antero Resources	AR	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Berry Petroleum	BRY	NSDQ	Phillip Jungwirth	BMO Capital Markets Corp.
Centennial Resource Development	CDEV	NSDQ	Phillip Jungwirth	BMO Capital Markets Corp.
Chesapeake Energy	CHK	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Continental Resources	CLR	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Cabot Oil & Gas	COG	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
ConocoPhillips	COP	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Callon Petroleum Company	CPE	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Carrizo Oil & Gas	CRZO	NSDQ	Phillip Jungwirth	BMO Capital Markets Corp.
Concho Resources	CXO	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Denbury Resources	DNR	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
Devon Energy	DVN	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
EOG Resources	EOG	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
EQT	EQT	NYSE	Phillip Jungwirth	BMO Capital Markets Corp.
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Extraction Oil and Gas	XOG	NSDQ	Phillip Jungwirth	BMO Capital Markets Corp.

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National Oilwell Varco	NOV	NYSE	Daniel Boyd	BMO Capital Markets Corp.
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Hold	Market Perform	47.5%	12.2%	34.8%	47.3%	38.7%	37.5%
Sell	Underperform	4.1%	9.1%	2.2%	3.5%	1.2%	4.8%

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(April 2013 – October 2016)
http://researchglobal.bmocapitalmarkets.com/documents/2013/rating_key_2013_to_2016.pdf
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