Market Perspectives of Resources Assessments
BMO Capital Markets
Ryder Scott Reserve Conference
May 17, 2018
Introduction to BMO Capital Markets
# BMO Financial Group and BMO Capital Markets

## BMO FINANCIAL GROUP

- Canada’s first bank: established in 1817
- Offers broad range of retail banking, wealth management and investment banking services
- One of the largest diversified financial services providers in North America

## Key Operating Data

- Credit Rating\(^1\): A1
- Market Capitalization\(^2\): C$64.5 billion
- Total Assets\(^3\): C$708.6 billion
- 2016 Net Revenue\(^4\): C$19.6 billion
- Employees\(^3\): Over 45,000

## BMO CAPITAL MARKETS

- Fully integrated North American investment bank with global capabilities
- Approximately 2,400 professionals in 30 offices across 5 continents
- Designated Primary Dealer by the Federal Reserve Bank of New York
- Member of: NYSE; LSE; NASDAQ; TSX; TSX-V
- Research analysts: 61; companies covered: 900+
- Institutional clients covered globally: 1,200+

### BMO CAPITAL MARKETS CAPABILITIES

#### Advisory Services
- Mergers & Acquisitions
- Valuations & Fairness Opinions
- Takeover & Activist Defense
- Restructuring Advice

#### Corporate Finance
- Equity Offerings
- Debt Offerings
- Convertible Offerings
- Corporate Lending

#### Sales & Trading
- Institutional & Retail Distribution
- Equity & Fixed Income Research
- Equity & Fixed Income Trading
- Institutional Investor Access

#### Treasury Services
- Cash Management
- Risk Management
- Foreign Exchange
- Trade Finance

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1. Moody’s senior unsecured debt credit rating as of September 6, 2017.
2. As at December 1, 2017.
3. As at July 31, 2017 (Q3 Report).
4. Adjusted basis and net of CCPB.
BMO Capital Markets

Global Energy Investment Banking Franchise

- BMO Capital Markets has one of the largest fully integrated, global energy investment banking teams
- 144 I&CB professionals and 180 Global Energy professionals
  - Largest A&D team in Calgary
- Teams in Calgary, Houston, London, Beijing and Melbourne

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*Includes resources shared between Global Energy and Global Metals & Mining.

**Global footprint informs M&A marketing process – no stone left unturned**
Advisory Platform Combines Financial and Technical Expertise

BMO'S A&D TEAM...FULLY INTEGRATED WITH INVESTMENT BANKING

- Technical staff fully imbedded with Investment Banking
  - BMO's technical teams comprised engineers, geoscientist, economics and support staff
- Alignment allows for effective support on all advisory mandates, both but and sell side
- Knowledge built & experience 100+ basins and 50 countries
- Teams can effectively market assets, quantifying upside potential and identify any risk factors

INDUSTRY THOUGHT LEADER

INTEGRATED TECHNICAL CAPABILITIES

BMO's combination of technical and financial expertise provides clients with a full service platform
Canadian Energy M&A Expertise

BMO Capital Markets is a leading financial advisor in the Canadian energy industry.

- **$138 billion**
- **$115 billion**
- **$73 billion**
- **$60 billion**
- **$39 billion**
- **$17 billion**
- **$12 billion**
- **$8 billion**
- **$7 billion**
- **$2 billion**

LEADING CANADIAN M&A ADVISOR (1)

- **$398 billion**
- **$262 billion**
- **$183 billion**
- **$179 billion**
- **$157 billion**
- **$67 billion**
- **$46 billion**
- **$23 billion**
- **$12 billion**
- **$9 billion**

LEADING ENERGY ADVISOR (1)

Source: Bloomberg; as at February 23, 2018

Note: Canadian target, seller, or acquirer; financial advisor only; announced deals; Canadian Oil & Gas and Pipelines from 2012 to date; Excludes re-structuring advisory services.

1. Canadian domiciled brokers only.
Current Market Considerations
Key Themes - Oil

WTI Expected to Remain Range-Bound While Western Canada Heavy Oil Prices Feel Pressure

- BMO Research expects WTI to trade in a US$55.00 – US$65.00/bbl range through 2020\(^{(1)}\); EIA forecasts an average price of US$59.37/bbl in 2018\(^{(2)}\)
  - At levels above US$60/bbl, U.S. producers have the ability to increase production by over 1 mmbbl/d, likely more than the market can absorb at current prices
- Strong growth in non-OPEC production (led by the U.S. and Canada) expected to keep oil prices in a relatively narrow range
- WCS heavy crude differentials widened considerably relative to WTI primarily due to rising supply, structural capacity constraints, Canadian pipeline outages and apportionment
  - Recent tightening of differentials as Keystone capacity was restored and rail deliveries accelerated

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2. As per EIA Short Term Energy Outlook (April 10, 2018).
Oil Pricing Outlook

HISTORICAL & FORECAST PRICING (US$/BBL)\(^{(1)}\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Spot</th>
<th>10 Year Avg</th>
<th>Research Consensus(^{(1)})</th>
<th>Futures</th>
<th>BMO Research</th>
<th>Engineering(^{(2)})</th>
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Note: All pricing as at May 8, 2018.

- **WTI** expected to trade in a US$50-60/bbl range through 2020
- Backwardation in futures curve due to heightened geopolitical risk and potential over supply
- Limited egress for WCS increases diffs, compared to Maya Heavy Crude
- Canadian heavy oil prices dislocated from U.S. benchmarks while volatility continues, with differentials widening to three-year highs
- Floor for world oil prices set by OPEC, while ceiling continues to be set by the ability of U.S. producers to add rigs at higher oil prices
- WCS large price differential to WTI as a result of well-publicised egress issues
- Maya pricing differential a good indicator of heavy crude pricing without egress issues

Source: BMO Equity Research, FactSet, IEA, industry publications.
Note: All pricing as at May 8, 2018.
1. Strip pricing represents average of entire year.
2. Average of current price forecasts of AJM Deloitte, GLJ, McDaniel and Sproule.
3. Consensus estimates from FactSet.
Key Themes - Gas

U.S. Gas Poised to Resume Growth; AECO Continues to Face Headwinds

- AECO pricing remains under considerable pressure given transportation constraints
  - AECO expected to average $1.82/mcf in 2018; $2.04/mcf in 2019\(^1\)
  - In the longer term, capacity constraints should be diffused
    - TransCanada launched a new open season on NGTL system on March 1st, opening up a potential 280 mmcf/d of firm service commencing November 2021

- Henry Hub / AECO differentials expected to remain wide in 2018 and 2019 at ~US$1.40/mcf
  - Largest spreads likely to occur during summer pipeline maintenance

- Henry Hub expected to remain in a US$2.75-3.00/mcf trading range
  - In the short term, U.S. gas production expected to exhibit limited sensitivity to movements in benchmark gas prices
    - Associated gas from shale oil development contributes meaningfully to production growth in the U.S.

\(^1\) Per BMO Research report dated March 12, 2018.
Natural Gas Pricing Outlook

HISTORICAL & FORECAST PRICING (US$/MMBTU)\(^{(1)}\)

<table>
<thead>
<tr>
<th>Year</th>
<th>Spot</th>
<th>10 Year Avg</th>
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<td>$0.5</td>
<td>$0.25</td>
<td>$2.73 / mmbtu</td>
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HENRY HUB / AECO BASIS

- Henry Hub / AECO differentials expected to remain wide in 2018 and 2019, trading in the range of US$1.00 - 2.00/mcf. Station 2 exposure will continue to experience additional pricing pressure, directly impacting Northeastern BC producers.
- Largest spreads likely to occur during summer pipeline maintenance and reduced demand.
- Henry Hub expected to remain in the US$2.50 - 3.00/mcf trading range.
- In the short term, U.S. gas production expected to exhibit limited sensitivity to movements in benchmark gas prices. Associated gas from shale oil development continues to contribute meaningfully to production growth in the U.S. Over-supply suppressing pricing…AECO further challenged by Egress.

Source: BMO Equity Research, Baker Hughes, FactSet, IEA, industry publications.
Note: Pricing as at May 8, 2018.
1. Strip pricing represents average of entire year.
2. Average of current price forecasts of AJM Deloitte, GLJ, McDaniel and Sproule.
3. Consensus estimates from FactSet.
Key Themes – M&A

Capital Markets Activity Muted in 2018 YTD; Non-Traditional Buyers Have Supported M&A Market

- Energy equity capital markets remain very selective as issuers’ use of proceeds continue to be institutional investors’ focus when supporting equity issuances
  - Only 9 E&P issuers accessed the market in 2017\(^1\); No new issues in 2018 YTD
- Large M&A activity has tapered with public Canadian energy companies having limited access to capital amid weak equity market sentiment
- Recent transactions of scale have been consolidation by area incumbents
  - Montney: Paramount / Trilogy (AB) and Painted Pony / UGR (BC)
  - Oil Sands: Suncor / Teck / Total / Mocal, Cenovus / ConocoPhillips, and CNRL / Marathon / Shell
  - SE Saskatchewan Oil: Vermilion/Spartan and Vermilion/Red River
- Cenovus retired its bridge facility associated with the acquisition of ConocoPhillips’ FCCL interest and Deep Basin assets through $3.7 bn of divestitures
  - Emergence of non-traditional buyers in IPC, Torxen, and Schlumberger

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1. Based on issuances with deal value over $25 mm.
Recent activity dominated by Cenovus A&D and oil sands consolidation; Vermilion / Spartan the first major non-oil sands transaction of the year

Note: Bar chart and table exclude oil sands transactions and joint ventures; chart does not include CNOOC-Nexen and REPSOL-Talisman transactions.

1. Deal count and value include CNOOC-Nexen, REPSOL-Talisman, Cenovus-ConocoPhillips, CNRL-Shell and Canadian Oil Sands - Suncor transactions.
Market Perspectives of Resource Assessments
Resources - Market Perspectives
Define ‘Resource’

- Resources are beyond the 3P level of reserve bookings
- Contingent and prospective categories
Resources - Market Perspectives
Resources assessment may dependent on:

- Development timing/capital allocation
  - Typical contingent resources in 3rd party resource assessments

- Commodity pricing…improved pricing in the future resulting in improved economics

- Advances in technical recoveries…recovery processes to be developed in the future and applied
Resources - Market Perspectives

Why do resources assessments matter?

- Provides the market with an assessment of future potential bookable reserve capacity, assuming more capital allocation
- Provides estimate of ‘fully developed value’
- May ‘encourage’ buyers to stretch on the production/cash flow/reserve acquisitions, if the resource assessments are deemed valid, and preferably done by a 3rd party engineering firm
Resources - Market Perspectives
Other reasons to quantify resource assessments

- Non-market reasons for company internal use
  - Long term development planning/capital allocation
  - Total potential value of a company or asset
Resources - Market Perspectives
What kind of asset is being acquired/evaluated?

- Larger scale assets
  - Unconventional (shale/tight oil & gas)
  - Oil sands
  - Generally early life… low level of development compared to overall potential being reflected in the resource assessment
Resources - Market Perspectives
Who is Buying?

- Acquirers, generally larger organizations, looking to secure long-term resources with a goal of converting to reserves, production and cash flow
  - SOEs & Multi-nationals
  - Companies with strong paper that can raise equity, or issue shares for direct share exchange
- Financial buyers looking to secure future cash flow steams
  - Royalty buyers
- Equity markets…IPOs
Resources - Market Perspectives
Where are we in the cycle?...in the eyes of the Buyer

- This has a major impact on prices paid, and how much buyers are willing to stretch using resource assessment
  
  - **Contengo**… Rising forward pricing…industry feels the pressure to secure reserves/resource as commodity price increases
  
  - **Backwardation**…falling futures pricing, industry not willing to secure reserves/resources now, as prices are falling

  o …However…Counter-cyclical views will sometimes apply, when a buyer recognized backwardation, but thinks it may be short-lived with a rising tide to follow
Resources - Market Perspectives
Where are we in the cycle?... **in the eyes of the Seller**

- Conversely to the buyer’s perspective, sellers will want to engage in optimal sale timing, during market upswings.
- While sellers may control the process, timing may not always up to the them.
Resources - Market Perspectives
How do we know if Resources are at play in transaction?

- Generally, a relatively low level of development compared to the potential outlined in the resource assessment

- High metrics for land, production and reserves, relative to other more conventional transactions
  - The easiest metrics to identify are land ($/acre) and production ($/boe/d), as those parameters are most readily available
Case Studies of Transactions with Significant Resource Components
Case Studies of Transactions with Significant Resource Components

1. PetroChina/Encana Duvernay Joint Venture
2. Mitsubishi/Encana BC Montney Joint Venture
3. Petronas/Progress Acquisition
4. Seven Generations Initial Public Offering
5. Concho/RSP Permian Acquisition
6. Various Oil Sands Royalty Transactions
PetroChina/Encana Duvernay Joint Venture

- PetroChina Joint venture with Encana in the Duvernay, December 2012
- Total payment of $2.18B, $1.18 upfront and the remaining $1B in drilling commitments
- Acquired interest of 49.9%, with Encana retaining 50.1% and operatorship
- Gross land position of 445,000 acres
- Gross resource of 14 Tcfe…no meaningful full production at the time or booked reserves
- Metrics:
  - $10,000/acre
  - $0.32/mcfe on a resource basis
  - Infinite on production & reserves

Large Asian multi-national JV with Canadian major in very early stage play development
Mitsubishi/Encana BC Montney Joint Venture

- Mitsubishi Joint venture with Encana in the BC Montney in December 2012
- Total payment of $2.9B, $1.45B upfront and the remaining $1.45B in drilling commitments...$435MM remaining
- Acquired interest of 40%, with Encana retaining 60% and operatorship
- Gross land position of 409,000 acres
- Gross 2P reserves of 1.4 Tcf
- Gross resource of 35 Tcfe
- Metrics:
  - $17,700/acre
  - $2.07/mcfe on a 2P basis
  - $0.21/mcfe on a resource basis

Large Asian industrial secures resource through a joint venture with a Canadian Major
Petronas/Progress Acquisition

- Petronas’ 100% acquisition of Progress in July 2012
- Acquisition driven by large stake in the NE BC Montney and potential LNG project
- Extensive development post-acquisition
- Acquisition costs of $6B
- Land position of 625,000 acres
- Production of 43,500 boe/d
- 2P reserves of ~2.0 Tcfe; Resource of 48 Tcfe
- Metrics:
  - $9,600/acre
  - $137,900/boe/d production
  - $3.09/mcfe on a 2P basis
  - $0.13/mcfe on a resource basis

Large acquisition to secure Montney asset, following a partial JV of the same assets
Seven Generations IPO

Seven Generations IPO in October 2014
- Total enterprise value of $5.1B\(^{(1)}\)
- Land position of 350,000 acres
- Production of 35,000 boe/d
- Total 2P reserves of 649 Mmboe
- Total 2C reserves of 728 MMboe
- Metrics:
  - $14,700/acre
  - $145,311/boe
  - $7.93/boe on a 2P basis
  - $3.74/boe on a 2P+2C basis

High value resource drives high market metrics on the most recent IPO

\(^{(1)}\) IPO market capitalization plus debt
Concho/RSP Permian Acquisition

- Concho Resources 100% acquisition of RSP Permian in March 2018
- Acquisition costs of US$9.5 billion
- Land position of 92,000 acres, with significant stacked potential on a relatively small land base
- Production of 55,500 boe/d
- Resource of 2,200 Mmboe
- 5,000 gross locations
- Metrics:
  - $103,300/acre
  - $171,200 boe/d production
  - $4.32/boe resource

Very large multi-billion US$ deal.
Large production and reserve base plus and significant ‘unbooked’ upside
Long-dated Manufactured Royalties on Oil Sands Assets

- Sliding scale royalty applied and payable in the event of higher oil prices
  - Even if there is current production, royalty only applicable at much higher prices
- Royalty applied to all company lands, as to not burden assets unevenly
- Royalty buyer has no influence on development
- Combined transaction parameters:
  - $369MM paid to resource holders
  - 1,600 MMbbl of 2P reserves and 12,500 MMbbl of 2C resource
  - 45 Mbbld of current production
- Metrics:
  - $0.23/bbl on a 2P basis
  - $0.03/boe on a 2P+2C basis

No royalty payments excepted for years…or perhaps decades.
Transactions are a bet on future higher oil prices and resultant activity
Resources - Market Perspectives

Conclusions

- As resource plays have become a significant contributor to the WCSB, contingent and prospective resource assessments have gained importance in the asset valuations and transactions.

- Critical factors in the determining the impact of contingent and prospective assessments are:
  - What kind of assets are being bought?
  - Who’s buying?
  - Where in the cycle are we?

- A credible resource assessment ‘encourages’ buyers to stretch on ‘reserve’ acquisitions.

- Outside of transactions, resource assessment are important for future development planning, and assessing the full potential worth of an asset or corporation.
Q&A
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