Alberta Forecast 2018

COAA Best Practices Conference
Foreign Interests Meddling in Canadian Energy Industry

• “The surge of American energy into the global marketplace heightens the Kremlin’s desire to eliminate or mitigate the American energy threat and to do so by influencing social media users, American voters, and public officials”

• “The Kremlin is attempting make...”useful idiots” of unwitting environmental groups and activists in furtherance of its energy influence operations”

  • Report of the US House of Representatives Committee on Science, Space, and Technology, March 1, 2018
The “Fatal Flaw” of Alberta’s Oil Expansion
(https://www.nationalobserver.com/2018/03/07/opinion/fatal-flaw-albertas-oil-expansion)
A Final Recommendation From Me

• That the COAA / ACR coordinate a coalition of affected parties to lobby our Federal Government to investigate foreign money pouring into environmental organizations and social and conventional media campaigns designed to keep Canadian oil and gas in the ground.
Alberta: Investment Outlook

Billions 2007$

Source: The Conference Board of Canada.
Oil sands investment – Total*

$2007 Millions**

*Includes construction and M&E

**$2007 millions indicates that the investment values are in year 2007 dollars (base year), that is, adjusted for inflation. This is used to calculate the real physical year-to-year change of the value of construction, factoring out growth (increase value) due to increases in prices.

Source: Statistics Canada, BuildForce Canada (2017-2027)
Real GDP growth, Alberta

Source: Statistics Canada, BuildForce Canada (2017-2027)
Components of real GDP growth, Alberta

Source: Statistics Canada, BuildForce Canada (2017-2027)
TOTAL PROJECT COUNT – 2018 UPDATE

- In-Active Projects (Status #5 - #7)
- Active Projects (Status #1 - #4)

Active Projects

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<th>Year</th>
<th>Fall</th>
<th>Spring</th>
<th>Fall</th>
<th>Spring</th>
<th>Fall</th>
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</table>

- Power
- Pipeline
- Petrochemical
- Oilsands
HEAVY INDUSTRIAL CONSTRUCTION WORKFORCE REQUIREMENT TO 2021 – BY SECTOR
HEAVY INDUSTRIAL CONSTRUCTION WORKFORCE REQUIREMENT TO 2021 – TOTAL
While WTI Prices have gone up, WCS prices remain flat

WTI and WCS Avg. Annual Prices
2018 = avg. year to date price
Alberta Oil Transportation Bottleneck Closer to being Resolved
US Importing More Heavy Grades & More from Canada

Figure 9: US import data (MMBbl)

Source: Company Reports, Canaccord Genuity, US Energy Information Administration
Heavy Grades of Oil = Higher Refining Margins

- Designed for light, sweet crude
- Low feed and product variability
- Limited ability to handle sulphur
- No conversion of heavy residuals
  ➔ LOWER REFINING MARGINS

- Designed for heavy, sour crude
- Able to remove sulphur
- Heavy bottoms converted into lighter, value-added products
- Can produce a mix of products, depending on market demand
  ➔ HIGHER REFINING MARGINS
Venezuela is Our Biggest Competitor for Heavy Crude Blends – US Imports Falling
M&A Activity Increasing – Remaining Oilsands Players Such as Suncor Have Expansion Plans

- ~10 Phases of 40 mbpd next generation in situ facilities (replication)
- 7 Phases in regulatory process - 2 approved, 1 submitted and an additional 4 to be submitted
- 360+ Mbpd production growth plans
- 2023 Potential first oil from first phase
- 5+ Locations for replication
- 12 to 15 Months between phases
Alberta Oil Production Increases Will Moderate Over Foreseeable Future
Global Oil and Gas Capex Depressed
- US Light Tight Oil is the Exception

Only limited uptick in global upstream spending

![Global oil and gas upstream capital spending 2012-2018](chart)

Producers spend more on short cycle supply, especially US LTO. Investments in conventional fields remain depressed, but some signs of renewed interest in offshore.
Global conventional discoveries** [Million boe]

- 2012: 30 billion boe
- 2013: 16 billion boe
- 2014: 15 billion boe
- 2015: 15 billion boe
- 2016: 8 billion boe
- 2017: 6.7 billion boe

Source: Rystad Energy UCube and Rystad Energy research and analysis
Without Significant Increase in Capex, Global Demand Will Outstrip Supply

Robust global oil demand growth to 2023

China and India account for almost half of world oil demand growth
Booming non-OPEC supply growth reshapes world oil market...

Changes in global oil supply capacity 2017-2023

...more than covers demand growth for next three years. By 2023, non-OPEC supply grows by 5.2 mb/d. OPEC oil capacity rises only 1.2 mb/d due to Venezuelan collapse and limited increases elsewhere.
USA – Tight Oil Production Up in 2017
Most of the Tight Oil Increase From Permian
US Oil Production Doubles Between 2010 and 2019
US Light Tight Oil Not Enough to Meet Long Term Global Demand
OECD Nations Oil Stocks Approaching 5yr. Avg
OECD commercial crude oil and other liquids inventory days of supply

Source: Short-Term Energy Outlook, April 2018

Note: Colored band represents the range between the minimum and maximum observed days of supply from Jan. 2013 - Dec. 2017.
Supply/Demand Relatively Balanced this Year
Oil Price Likely to Remain Between $55 - $65 (WTI)
Deep-sea Drilling Expected to Gradually Recover to 2014 Levels by 2030

Average annual demand for floaters¹

Average annual demand for jackups¹


Floater activity is expected to have a sequential growth through 2030.

Jackup activity is expected to have mild growth through 2030.
Middle East / North Africa Expected to Invest Heavily in Energy Over Next 5 years

Total planned and committed MENA energy investment 2018-22 ($bn)

Source: APICROP research
The Economies of China and India will have a huge impact on future oil prices.

**China net crude oil imports double the US in 2023**

Indian imports, too, surpass the US in 2023 as shale growth reduces US import dependence.
Petrochemicals drive demand growth to 2023

Feedstock requirements for new steam crackers

Petrochemical feedstocks (ethane and naphtha) responsible for 25% of global demand growth
Lack of pipeline takeaway and increasing market pressure causing basis to remain wide

Henry Hub vs AECO

Source: Bloomberg
Updated: 4/1/2018
LNG Export Projects with FERC Approval and/or Under Construction Represent ~10 Bcf/d of Capacity While BTU Expects Seasonal Swings with Average Annual Utilization Closer to 75%
US LNG EXPORTS

CUMULATIVE VALUE ADDED (2013-2050)¹
- 7.3-15.5 Million Job-Years
- $1.6 - $3.2 Trillion to US Economy

GLOBAL DESTINATIONS (2016-2018)²
- Americas 31.5%
- Europe 12.2%
- S. Asia 4.6%
- Mid. East 10.7%
- E. Asia 41.0%

¹ Calculating the Benefits of US LNG Exports, ICF for LNG Allies (April 2018).
Under the EIA’s total vehicle fleet assumptions, even their most aggressive forecast will only have electric vehicles comprising 15% of the total US fleet by 2050.

EIA Annual Energy Outlook – Electric Vehicle Fleet

Note: Includes light duty, fleet, and freight electrical and plug-in hybrid vehicles

Source: BTU Analytics, EIA