The Economic Impact of Canadian Oil and Gas
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Summary of the Economic Impact of Canadian Oil and Gas

- Conditions for the Canadian upstream oil and gas industry have been challenging since the 2014/2015 downturn; however, the situation has drastically improved post-COVID with the commodity price recovery and improved pipeline takeaway capacity, which have resulted in record-high revenue levels in 2022 and 2023.

- Oil prices have strengthened considerably since the start of 2024 and enough to offset weaker natural gas prices, and now annual revenue for 2024 is estimated at $188 billion (up 3% Y/Y). CAPEX spending should be more resilient and similar to 2023, with the equivalent of 59% of industry revenue, or $110 billion, estimated to be spent on operating expenditures (OPEX) and capital expenditures (CAPEX) combined; this is mostly spent in Canada.

- The industry’s improved health has transferred to the bottom line of provincial governments. The industry paid a record $33 billion in oil and gas royalties to provincial governments in 2022. In 2023 and 2024, over $20 billion is expected in each year.

- Over the past few years, cost inflation has erased some of the industry’s previous gains in reducing operating costs. Managing these costs continues to be an area of focus.

- The economic impact of Canada's upstream oil and gas sector is significant. In 2023, the sector comprised over 3% of Canada’s total GDP. The Oil and Gas Extraction sub-industry is the largest goods-producing industry in Canada. It is 20% bigger than the next largest sub-industry—Engineering and Other Construction Activities—and 30% bigger than the Residential Building Construction industry.

- When direct, indirect, and induced jobs are considered, the oil and gas sector employs about 900,000 people in Canada. These are well-paying jobs; the average direct oil and gas worker's total compensation is 2.2X higher than the Canadian average.

<table>
<thead>
<tr>
<th>Canadian Oil and Gas Metrics (2024e)</th>
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<tbody>
<tr>
<td><strong>Revenue</strong></td>
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<tr>
<td>$188 billion</td>
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<tr>
<td><strong>OPEX</strong></td>
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<tr>
<td>$69 billion</td>
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<td><strong>CAPEX</strong></td>
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<td>$41 billion</td>
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</table>
The oil and gas sector has underperformed vs. the broad market since the 2014/15 downturn.

Indexed to 2014, Canadian oil and gas equities have fared worse than US oil and gas equities. In 2018, a shortage of pipeline capacity caused massive Canadian oil price discounts, and the Alberta government forced production curtailment to stabilize prices. This and other issues like pipeline politics and GHG policy uncertainty have contributed to underperformance.

However, since 2020, Canadian oil and gas equities have outperformed US oil and gas equities. At the end of Q1 2024, Canadian oil and gas equities were up 16.9%, hitting their highest level since 2014.
The Fiscal Pulse
The Fiscal Pulse diagram represents an accounting of how the dollars and product volumes flow through the Canadian oil and gas economy.

- Production Volumes are multiplied by Commodity Prices to yield E&P Revenue. Interest, G&A, Royalties, and Taxes, along with Operating Expenditures, are then deducted to arrive at Cash Flow.
- Cash Flow is then reinvested back into the industry through CAPEX to maintain or grow Production Volumes, measured by Drilling and Completions and Reserve Additions.
- Cash Flow can also flow back to shareholders through Dividends, Distributions, and/or Buybacks.
• This capital flow diagram updates the metrics for 2024.

• Total revenues are estimated to be $188 billion in 2024, up slightly from $183 billion in 2023.

• Capital spending of almost $41 billion is expected to be similar to 2023 with 59% of revenue, or $110 billion (operating expenditures + CAPEX) that is mostly spent in Canada.

• Annual commodity price expectation averages for 2024 are based on actual prices for Q1 and the futures market for the remaining months of 2024 (as of April 1st, 2024).

Source: ARC Energy Research Institute, National Bank Financial (April 1st, 2024)

All dollar values in billions of Canadian dollars unless otherwise noted.
In 2024, conventional production is estimated to make up under half of the total industry revenue.

Conventional oil and gas is forecast to spend an estimated $27 billion on CAPEX or about 85% of the cash flow generated.

The high decline rates of the existing wells require constant re-investment just to keep production flat.

During the US$100/B oil price era (pre-2014) annual CAPEX spending exceeded $40 billion some years, an amount greater than peak oil sands spending of ~$33 billion.
In 2024, oil sands are estimated to account for over half of the upstream industry’s total 2024 revenue.

Oil sands capital spending is expected to be about half of the conventional amount, at $13 billion for 2024.

During the boom years of the oil sands construction (pre-2014) annual spending was over $30 billion for some years.

Greenfield construction of oil sands ended last decade. Today, the capex is mostly for production maintenance.

Source: ARC Energy Research Institute, National Bank Financial (April 1st, 2024)

All dollar values in billions of Canadian dollars unless otherwise noted.
In 2018, oil price discounts became extreme due to a lack of pipeline takeaway capacity.

Discounts are more normal now, with new pipeline capacity and more moderate production growth.

Canadian natural gas prices at AECO were heavily discounted in the 2017 to 2019 period, and again in the summer of 2022. That has improved with additional egress capacity added to Western Canadian natural gas infrastructure.

Oil and gas revenue is realized in US dollars—a weaker Canadian currency has helped boost revenue in Canadian dollars.
Commodity Prices and Differentials | Monthly | 2018 to March 2024

- The monthly data helps show the trends more clearly.
- WTI oil price started the year in the low 70s, and exited March at $US 83/B averaging $77.20 for Q1 2024.
- The Canadian dollar averaged just over $US/$C 0.74 in Q1 similar to the average for 2023.
- A weaker Canadian dollar boosts the industry’s profitability. Companies sell their products in US dollars and pay expenses in discounted Canadian dollars.

Source: Bloomberg
Canada’s total production is projected to reach an all-time high of 8.6 MMBOE/d (including NGLs) in 2024.

Canada’s resilient production bounced back faster from COVID than most other countries, including in the United States.

The resiliency of production is partly due to the industry’s drive to be more operationally and cost-efficient since the 2014/2015 downturn, but also driven by lower base declines associated with oil sands production.

Source: CAPP, Canada Energy Regulator. Note: Natural gas liquids (NGLs) include ethane, butane and propane.
Oil has a higher energy density than natural gas, therefore, oil is generally more valuable on a per-unit basis as it contains more energy. As such, Canadian oil and gas upstream revenues are more influenced by oil prices.

While marketed natural gas production is expected to be at an all-time high in 2024, low gas prices reduce the revenue impact. In the early 2000s, gas revenue was greater, while marketed natural gas volume was just slightly lower than now, and gas prices were 2X to 3X higher.

Source: CAPP, Canada Energy Regulator. Note: Conventional crude oil and liquids includes condensate, pentanes plus and NGLs.
The improved fiscal health of the oil and gas industry has transferred to the bottom line of the provinces through the payment of royalties.

For 2022, a record high $34 billion in royalties were collected by oil and gas producing provinces in Canada.

For 2022, $24 billion in oil and gas royalties was collected for Alberta, the highest ever for the province.

Recent high oil prices pushed some oil sands projects into ‘post-payout’ status, meaning they will pay a higher royalty rate earlier than expected.

Canada’s upstream oil and gas industry is an important contributor to government revenues through federal and provincial corporate income taxes.

In 2022, Canada’s oil and gas industry paid the federal and provincial governments nearly $12 billion of income taxes.

Since 2021, shareholders of oil and gas companies have shifted the focus from reinvestment in growth to profitability. This structural trend is expected to increase the amount of taxes in the coming decade.

Source: Statistics Canada Table: 25-10-0065-01, LCT (large corporations tax)
After the 2014 downturn, through efficiencies, oil sands operators made significant strides in reducing their operating costs per barrel.

Conventional operating costs declined but to a lesser extent. However, post-COVID, much of the gain in reducing operating costs has been eroded by cost inflation for goods and services.

Managing cost inflation is an ongoing issue for the industry.

Source: CAPP (2023 and 2024 are estimates assuming a 5% and 2% increase respectively)
Cash Flow and Capital Spending | Conventional Oil and Gas | 2000 to 2024e

• 2000 to 2010 – the conventional industry’s growth was constrained, and it did not spend all the cash flow that it generated.

• That changed in 2010. For the next 10 years, the industry had access to external debt and equity, allowing it to spend beyond its cash flow.

• Now, the focus has shifted from growth to shareholder returns. Consequently, since 2021, capital spending is lower than cash flow.

• Assuming futures pricing as of April 1st, 2024 and expected CAPEX remain true, conventional producers are anticipated to reinvest most of their cash flow in 2024.

Source: CAPP

1 Cash flow is pre-tax, before capex is deducted.
Capital spending on oil sands projects peaked in 2014. The collapse in oil prices caused many projects to be shelved and multinationals started to exit the sector.

Today, no greenfield projects are progressing. CAPEX spending is on brownfield expansions and maintenance of existing assets that need relatively low amounts of capital. Consequently, oil sands generate more free cash flow (after CAPEX is deducted) than conventional, which requires higher levels of CAPEX.

Note: Cash flow is pre-tax. The split between conventional and oil sands is based on production ratio.

Source: CAPP ¹Cash flow is pre-tax, before capex is deducted
In the era of shallow gas drilling and high natural gas prices, a record ~25,000 wells and ~30 million meters were drilled in 2005.

Today, wells are much deeper and take longer to drill. In 2023, 5,389 wells were drilled in the Western Canadian Sedimentary Basin (WCSB) covering just under 18 million meters.

That equates to wells being on average approximately 2.7X longer today than in 2005.

The estimate for wells drilled in 2024 shown on the graph is 5,450 which is on the lower end of the estimate range of 5,400 to 6,000 wells drilled.

Source: Daily Oil Bulletin, CAPP. Note: Western Canadian Sedimentary Basin (WCSB) includes BC, Alberta, Saskatchewan and Manitoba.
While capital is constrained in the global oil and gas industry, the situation is heightened in Canada because of pipeline takeaway capacity issues, regulatory uncertainty surrounding pipeline projects, and carbon policy uncertainty.

The total amount of capital raised in the Canadian oil and gas industry in 2023 more than tripled to $8.8 billion compared to $2.8 billion in 2022.

The industry is adapting to having less access to external capital than in the past, by reducing debt and relying on internally generated cash flow.

Source: Sayer Energy Advisors (Daily Oil Bulletin)
In 2023, the Mining, Quarrying, and Oil and Gas extraction industry significantly contributed to Canada’s GDP at approximately $112 billion.

Collectively, the extractive industries (mining, quarrying, and oil and gas) accounted for 5.1% of Canada’s total GDP of roughly $2,202 billion in 2023—oil and gas is the largest of the three, contributing $71.4 billion, or 3.2%.

Source: Statistics Canada. Table 36-10-0434-06
Canada’s Gross Domestic Product (GDP) | Largest 15 Goods-Producing Sub-Industries | 2023

In 2023, the Oil and Gas Extraction sub-industry accounted for $71.4 billion or 3.2% of Canada’s GDP.

The Oil and Gas Extraction sub-industry is 20% bigger than the next largest sub-industry—Engineering and Other Construction Activities—and 30% bigger than the Residential Building Construction industry.

Source: Statistics Canada. Table 36-10-0434-06.

1 Goods-producing industries include: i) Agriculture, forestry, fishing and hunting, ii) Mining, quarrying, and oil and gas extraction, iii) Construction, and iv) Manufacturing.
The Oil and Gas Extraction sub-industry provided roughly 150,000 direct jobs in 2023, which includes support activities.

Statistics Canada estimates that every direct oil and gas job creates two indirect jobs in businesses that sell to oil and gas producers, and three induced jobs, where oil and gas workers spend their money. This would imply that roughly 900,000 jobs were a result of the oil and gas extraction industry in 2023.
Average Total Compensation Per Job by Goods-Producing Industry | 2023

Jobs in the Oil and Gas Extraction\(^1\) sub-industry are amongst the highest paying within the country’s Goods-Producing industry\(^2\), paying roughly 2.2X more than the Canadian average total compensation.

### Total Annual Compensation

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<thead>
<tr>
<th>Industry</th>
<th>$0</th>
<th>$50,000</th>
<th>$100,000</th>
<th>$150,000</th>
<th>$200,000</th>
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<tbody>
<tr>
<td>Petroleum and Coal Product Mfg.</td>
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<td>Oil and Gas Extraction</td>
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<td>Mining and Quarrying (excl. Oil and Gas)</td>
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<td>Primary Metal Mfg.</td>
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<td>Paper Mfg.</td>
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<td>Chemical Mfg.</td>
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<td>Engineering Construction</td>
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<td>Transportation Equipment Mfg.</td>
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<td>Computer and Electronic Product Mfg.</td>
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<td>Non-Metallic Mineral Product Mfg.</td>
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<td>Forestry &amp; Logging</td>
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<td>Electrical Equipment, Appliance and Component Mfg.</td>
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<td>Machinery Mfg.</td>
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<td>Other Activities of Construction Industry</td>
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<td>Non-Residential Building construction</td>
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<td>Fabricated Metal Product Mfg.</td>
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<td>Canadian Average (All Industries)</td>
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Source: Statistics Canada Table 36-10-0489-05

\(^1\) Includes support activities for mining and oil and gas extraction [21311A]

\(^2\) Goods-producing industries include: i) Agriculture, forestry, fishing and hunting, ii) Mining, quarrying, and oil and gas extraction, iii) Construction, and iv) Manufacturing