



Sectoral Profile

Oil and Gas

Region of Western Canada and Territories

2018-2020



EXECUTIVE SUMMARY

The oil and gas industry is a key driver of Western Canada's economy. However, volatile energy prices and market access issues have proved challenging in recent years. Following the collapse of international oil prices in 2014-15, heavy job losses ensued, with Industry employment falling 11.3% across Western Canada in 2016. While oil prices trended upward from mid-2017 till September 2018, the near-term outlook remains uncertain. The industry faces several challenges including insufficient pipeline capacity, a decline in competitiveness, and growing global geopolitical instability. Positive prospects will depend on the industry's ability to address transport issues that can help diversify trade, and mitigate the risks of increased US protectionist trade policies.

KEY DRIVERS

- Production in Western Canada's oil and gas industry far surpasses national demand. Almost all of the country's oil and gas exports are to the U.S., although a proposed pipeline and terminal projects aim to increase access to overseas markets.
- The western provinces account for most of Canada's domestic oil and gas production¹, benefitting from energy sector investments due to sizable reserves, and direct access to U.S. markets.
- Technological advances have transformed the oil and gas industry. Since 2010, new extraction techniques in Alberta have allowed oil sands production to surpass that of conventional methods. In addition, new drilling and hydraulic fracturing technology has boosted shale gas and oil production. As a result, increased North American production has led to lower prices for crude oil and natural gas.
- Over the longer-term, demand for gas reserves in Western Canada and the Territories may also be impacted by the adoption of alternate energy sources such as wind, solar, hydro, and geothermal.

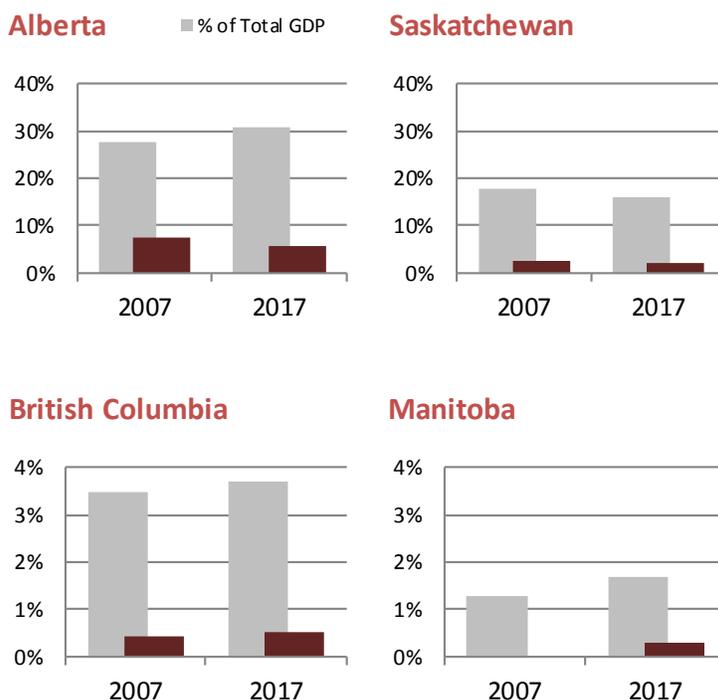
BACKGROUND

The rise of the oil and gas industry helped shift Canada’s economic centre of gravity westward. In fact, oil and gas extraction was the country’s top export earner by value from 2005 to 2017 (automobile manufacturing led in 2016).² All four western provinces have oil and/or gas operations that contribute notably to their GDP and export earnings. The industry is most significant in Alberta, where sustained investment in the oil sands – the third largest proven oil reserves in the world³ – has generally resulted in the strongest economic performance across industries in Canada over the past decade.

Saskatchewan’s oil and gas industry is the second largest nationwide, both by employment and by export earnings.⁴ Still, the province’s substantial oil industry is only one-seventh the size of neighbouring Alberta’s. All told, Alberta’s oil and gas extraction industry accounted for 82.7% of all Canadian oil exports by earnings in 2017, with Saskatchewan a distant second with 8.2%.⁵

Across the North, the oil and gas industry is far less active. Production is in long-term decline in the Northwest Territories and remains minimal in Yukon. Nunavut has not been an oil and gas producer since the 1970s.⁶ Even so, potential energy plays have been identified in all three territories, and exploration remains an important economic activity.

Oil and Gas Provincial % Share of Employment and GDP, 2007 vs. 2017



Sources: 1. Statistics Canada CANSIM Table 379-0030 - Gross domestic product (GDP) at basic prices, by North American Industry Classification System (NAICS), provinces, annual (dollars). 2. Statistics Canada Labour force estimates by detailed industry, age, sex, class of worker.

Note: The GDP percentage includes oil and gas and support activities for oil and gas. The percentage of total employment includes oil and gas and support activities for oil and gas.

Employment

After peaking in 2014 at 200,000 workers, oil and gas employment trended downward. By 2017, there were 155,900 people employed in the oil and gas industry across the western provinces, split between two sub-industries. The extraction sub-industry, which is primarily comprised of firms that own and operate oil and gas properties, accounted for 54.9% of total industry employment. Meanwhile, the support services sub-industry, which includes drilling and exploration firms, accounted for the remainder (45.1%).⁷

Across the West, employment in the extraction industry remained relatively stable between 2014 and 2015, before plunging in 2016 (-13.5%), as many oil and gas producers attempted to reduce costs by slashing operational budgets and laying off staff. Since then, employment levels have partially recovered, reclaiming 5.0% in 2017. Meanwhile, employment in energy support services continues to decline (-21.9% in 2015; -8.7% in 2016; -6.6% in 2017), as drilling and exploration activities continue at reduced levels. Overall, employment in the oil and gas industry (extraction and energy support services) across the western provinces has begun to somewhat stabilize over the past year, declining 0.5% in 2017 compared to a drop of 11.3% in 2016.

INDUSTRY TRENDS

When North American benchmark crude oil prices began to decline in mid-2014, the price of a barrel of oil fell from over US\$100 to a low of US\$30 in 2016. Alongside the decline in global energy prices, the value of Canadian oil and gas exports tumbled by nearly half, going from 2014's record-breaking C\$113 billion to C\$61 billion in 2016.⁸ In response to the price decline, major oil-producing countries led by Saudi Arabia and Russia, instituted over 17 months of production cuts to bring global oil supply and demand back into balance. Since then, the industry has been through several more rounds of production boosts followed by curtailments that have contributed to price volatility. In October 2018, fears of overproduction pushed oil prices down by one-third, with WTI (West Texas Intermediate) trading at US\$53.

The global oil and gas industry's instability is expected to continue amid seemingly growing geopolitical pressures. A decision by the US to unilaterally exit the nuclear deal with Iran – a country that produces four percent of global oil supplies - is expected to take about one million barrels a day off the market. This comes at a time when markets are already struggling with the loss of as many as 700,000 barrels a day of Libyan and Venezuelan crude. If these estimates hold true, crude oil supplies may be heavily impacted, placing upward pressure on prices.⁹

On the demand side, an escalating tariff war between the US and China appears to be curbing demand growth. US tariffs on several billions of dollars' worth of Chinese goods are pushing oil prices downward, due partially to the knock-on effect on the emerging market nations that supply China with its raw materials for manufactured goods. China's retaliation with a stringent tariff plan against US goods has only compounded the problem. Already the International Energy Agency (IEA) has warned that geopolitical events have increased uncertainty over future global oil supplies.¹⁰

Supply-wise, US shale oil production significantly offsets many of the losses from production declines elsewhere. Indeed, US production is at record highs, averaging an all-time record of nearly 11 million barrels per day; up

over 100% on 2008 production levels.¹¹ And Texas shale drillers are finding new ways to increase the output of their best wells. However, US suppliers need a higher price point to be profitable than many members of OPEC, but should prices climb further, similar techniques could quickly be applied to second tier properties, resulting in even higher output levels.

Closer to home, on-going increases in Alberta's oil sands output means that the province now produces more crude oil than it can export by pipeline or rail. Between October 2017 and 2018, oil sands production increased by 18%, while conventional production increased by 15%.¹² Against a backdrop of volatile world prices, these ongoing additions to oil sands capacity are contributing to transportation bottlenecks that reached unprecedented levels in October and November 2018, decimating the value of all grades of Alberta crude.

In a bid to get ahead of the rail issue, the Government of Alberta placed a massive order for railcars and locomotives in late November 2018, even as one-half dozen producers announced voluntary cutbacks in production.¹³ However, in the face of imminent job losses and likely bankruptcies, the Government of Alberta took even more drastic action.

On December 2nd 2018, the provincial government acted again by introducing what are arguably the most significant regulatory measures seen in the Western Canada oil patch in recent memory. The province ordered oil producers to cut crude production by 8.7% effective January 2019, in a bid to alleviate the supply glut that built up throughout 2018. Production of crude oil – particularly of oil sands bitumen – had been rising, while the province's transportation capacity remained materially unchanged. The resulting oversupply severely depressed prices for Alberta crude compared to the U.S. benchmark price of WTI (Alberta crude sold for almost \$44 Canadian per barrel below WTI in late September 2018, the widest spread in four years).¹⁴ This price gap between WTI and WCS (Western Canada Select, a bitumen blend) – also known as the WTI-WCS differential – is the specific target of the Albertan government actions, aiming to lower the differential by an average of \$4.00 per barrel in 2019. Thus far, it appears that the decision to curtail production has positively affected the net price of WCS; at the time of writing, the WTI-WCS differential sits at \$11.00 U.S.

Moving Forward

The Government of Alberta's decision to curtail oil production may have some spillover effects onto the broader economy; however, these effects are expected to be limited given the temporary nature of the production cuts. Still, layoffs in the drilling (as opposed to the oil sands) sector remain likely. And while overall production in Alberta will be lower, Western Canadian prices per barrel will almost certainly be higher, keeping weaker and/or smaller firms solvent. Meanwhile, in late January, the Province reduced the overall curtailment from 325,000 barrels per day (bpd) to 250,000 bpd, on the basis that the storage glut has been clearing more quickly than expected.¹⁵

Alberta's production caps will, by design, disproportionately impact larger producers who are more able than smaller ones to ride out near-term production disruptions. The first 10,000 (bpd) of output by each producer will be exempt from the 8.7% reduction, thereby limiting the burden on smaller operators.

Over the next few years, the overall outlook for Western Canada’s oil and gas industry is uncertain. If oil production continues to outstrip pipeline capacity, potentially causing prolonged market access issues, the WCS-WTI price differential may widen again, impacting revenues and investment.

Shipping by rail affects oil sand producers’ competitiveness at a time when they are already facing fierce competition from US jurisdictions. Rail shipments add an estimated \$3-4, on average, per barrel; an expense that US-based companies do not incur. In fact, in 2018, the US announced corporate tax cuts that encourage value-added investments, making US jurisdictions even more attractive to investors.

Additionally, the threat of US protectionist trade policies poses direct risks to the oil sands’ trade outlook and indirect risks related to lower global trade growth. All said the near-term outlook will depend on the industry’s ability to address transport issues by increasing takeaway capacity and gaining access to new markets. Canadian export pipeline aspirations now rest on: Enbridge’s Line 3; TransCanada’s Keystone XL; and the Trans Mountain expansion project, bought by the Federal government at the end of May. Indeed, China has already imported two shipments of Canadian oil from the Trans Mountain terminal in Burnaby at WCS spot prices available in the U.S.¹⁶

EMPLOYMENT OUTLOOK

The oil and gas industry is anticipated to stabilize after the volatility of the last few years. As Canada's largest hub for oil and gas activity, Alberta is projected to see the greatest increase in industry employment (+2,200) during the forecast period of 2018 to 2020. Little to no change is expected in British Columbia (+100), Saskatchewan (+100) and Manitoba. Estimates specific to the oil and gas industry are not available for the territories given that projection data for this region are combined with the mining industry.

Projected employment change for the oil and gas extraction sector during the 2018-2020 forecast period

Economic Region	Projected Change in Employment	Projected Annual Growth
Manitoba	0	-2.1%
Southern Manitoba		-2.4%
Winnipeg		-1.7%
Northern Manitoba		0.0%
Saskatchewan	100	1.1%
Regina & Southern Saskatchewan		1.3%
Saskatoon & Northern Saskatchewan		0.9%
Alberta	2,200	0.9%
Calgary & Southern Alberta		0.8%
Edmonton, Red Deer, Camrose, & Drumheller		1.1%
Northern Alberta and Banff		1.0%
British Columbia	100	0.9%
Vancouver Island & Coast		1.0%
Lower Mainland - Southwest		0.9%
Okanagan - Kootenay		0.3%
Northern BC		1.6%
Yukon	-	-
Northwest Territories	-	-
Nunavut	-	-

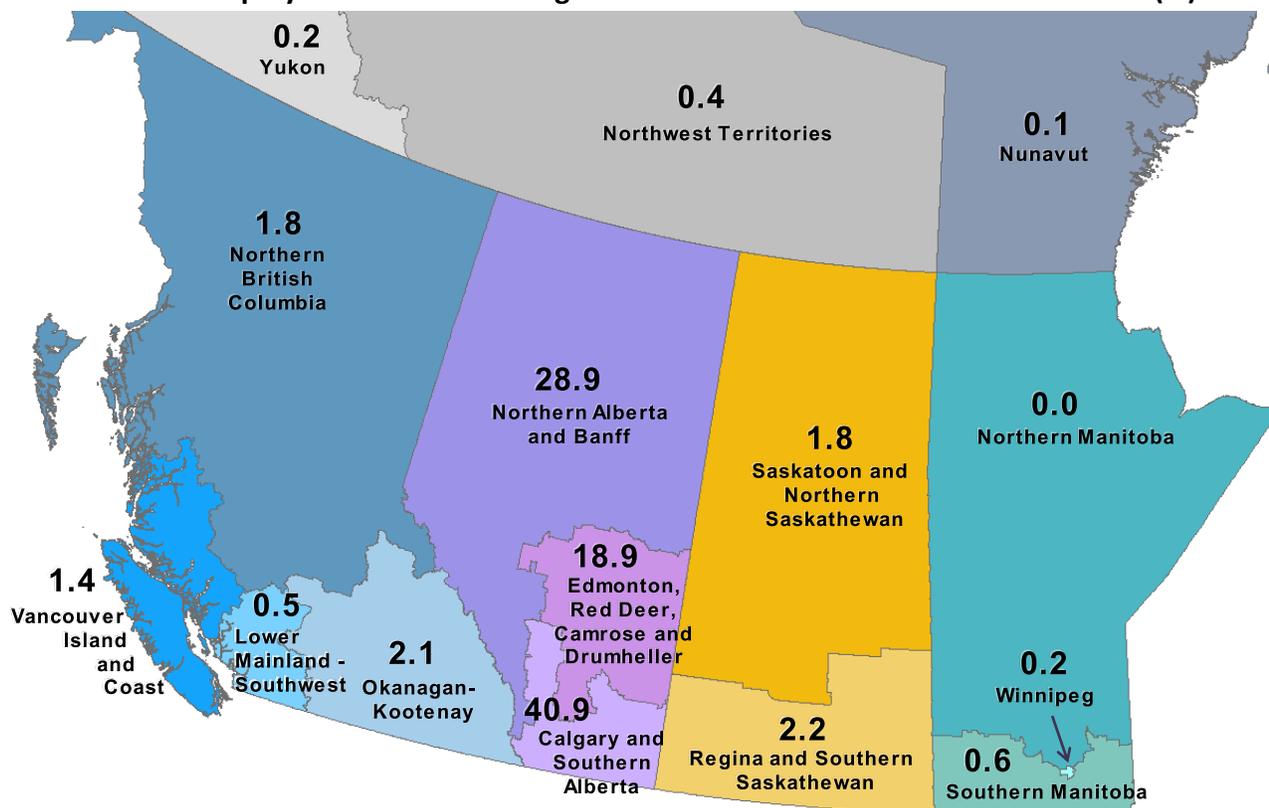
Source: Service Canada Regional Occupational Outlooks in Canada, 2018-2020

Note: Service Canada does not forecast employment for this sector in the three territories.

REGIONAL OVERVIEW

- **Calgary and Southern Alberta:** As the corporate hub for Canada's oil and gas industry, the collapse of oil prices three and half years ago sent the region into a tailspin from which it still has not fully recovered. Many Calgary-based oil firms continue to shed head office jobs, which some economists now believe may never return. Southern Alberta is home to a large number of energy service companies that support operations in the oil sands and other nearby energy plays. Going forward, the Calgary and Southern Alberta region is expected to recover slowly as energy prices stabilize. Employment is expected to increase +0.8% on an annual basis during the 2018 to 2020 period.
- **Northern Alberta and Banff:** Home to Fort McMurray and the oil sands, this region has had an extremely active labour market over most of the past decade as thousands of oilfield and construction workers regularly commute into the region from other parts of Alberta and Canada. While production in the region was negatively impacted by the devastating Fort McMurray wildfires in 2016, Fort McMurray quickly resumed its role as the services and logistics centre for Alberta's oil sands. Industry employment in the region is expected to move higher over the near-term (+1.0% per year).
- **Saskatchewan:** As the second largest oil and gas producing province behind only Alberta, Saskatchewan's combined oil and gas production was worth \$8.9 billion in 2017.¹⁷ The downturn in energy prices hurt several regions, particularly the southern part of the province where conventional oil and gas activity slowed significantly. On a positive note, the province's oil industry is benefiting from new cost-effective thermal extraction technology that is anticipated to boost investment over the next few years.¹⁸
- **British Columbia:** The province produces about two percent of Canada's oil output. More importantly, BC is home to immense natural gas deposits (second largest in Canada), which have caught the attention of top global investors who wish to export the resource to Asian markets. After two major LNG infrastructure projects were cancelled in 2017 (Petronas' Pacific NorthWest LNG and CNOOC's Aurora LNG), the recent approval of Royal Dutch Shell's \$40 billion LNG project in Kitimat comes as a boon that is expected to bolster investment and job creation in the province.¹⁹ Of related concern, British Columbia is also at the heart of the controversy surrounding Kinder Morgan's \$7.4-billion Trans Mountain pipeline expansion.
- **Territories:** Although prospective energy plays continue to be of interest to producers, exploration and development costs remain very high in the North. The oil and gas extraction industry in the territories is unlikely to enjoy the revival expected in the region's mining industry. According to the Conference Board of Canada, oil and gas output is expected to continue declining for the next decade at an average annual rate of 3.3%.²⁰

Distribution of employment in the oil and gas extraction sector across Western Canada (%)



Source: Service Canada Regional Occupational Outlooks in Canada, 2018-2020

Note: Territorial estimates include employment for the entire Mining, Oil & Gas sector. According to the 2016 Census, the share of employment in Mining and Quarrying within the larger sector represented about 55% in the Yukon, 80% in NWT, and 86% in Nunavut.

Note: In preparing this document, the authors have taken care to provide clients with labour market information that is timely and accurate at the time of publication. Since labour market conditions are dynamic, some of the information presented here may have changed since this document was published. Users are encouraged to also refer to other sources for additional information on the local economy and labour market. Information contained in this document does not necessarily reflect official policies of Employment and Social Development Canada.

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¹ In 2017, the western region produced 97% of Canada's natural gas production and almost 95% of the country's crude oil production.

² Industry Canada. Trade Data Online. Retrieved from: <http://www.ic.gc.ca/eic/site/tdo-dcd.nsf/eng/Home> (accessed September 2018)

³ Alberta Energy. Oil Sands: Facts and Statistics. Retrieved from: <https://open.alberta.ca/publications/oil-sands-facts-and-stats> (accessed September 2018)

⁴ Industry Canada. Trade Data Online. Retrieved from: <http://www.ic.gc.ca/eic/site/tdo-dcd.nsf/eng/Home> (accessed September 2018)

⁵ Ibid

⁶ Nunavut Climate Change Centre. Nunavut's Energy System. Retrieved from: <https://www.climatechangenunavut.ca/en/energy/energy-nunavut> (accessed September 2018)

⁷ Employment estimates for the energy services industries also includes mining-related support activities. In Alberta's case, the mining component is fairly limited. However, in Saskatchewan, Manitoba, and particularly BC, the mining services sector is of greater importance.

⁸ U.S. Energy Information Administration. Short Term Energy Outlook Browser. Retrieved from: <https://www.eia.gov/outlooks/steo/data/browser/> (accessed September 2018)

⁹ Financial Times. Energy stocks leap as US exit from Iran deal lifts oil prices. Retrieved from: <https://www.ft.com/content/fc201ec8-5323-11e8-b3ee-41e0209208ec> (accessed September 2018)

¹⁰ International Energy Agency. Global oil supply to lag demand after 2020 unless new investments are approved soon. Retrieved from: <https://www.iea.org/newsroom/news/2017/march/global-oil-supply-to-lag-demand-after-2020-unless-new-investments-are-approved-so.html> (accessed October 2018)

¹¹ Energy Information Agency (EIA), US field production of crude oil. Retrieved from: <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS2&f=A> (accessed October 2018)

¹² Active Drilling Rigs. Government of Alberta. Retrieved from: <http://economicdashboard.alberta.ca/RigActivity#alberta> (accessed December 2018).

¹³ The Globe and Mail. CNRL joins producers cutting oil output amid crude price slump. Retrieved from <http://www.globeinvestor.com/servlet/ArticleNews/story/GAM/20181102/RBCDENCANANEWFIELDFINAL> (accessed November 2018)

¹⁴ Petroleum Services Association of Canada. Commodity News. Retrieved from: <https://www.psc.ca/business/gmpfirstenergy/> (accessed September 2018)

¹⁵ The Globe and Mail. CNRL joins producers cutting oil output amid crude price slump; November 2, 2018. Retrieved from: <http://www.globeinvestor.com/servlet/ArticleNews/story/GAM/20181102/RBCDENCANANEWFIELDFINAL> (accessed November 2018)

¹⁶ Financial Post. China snapping up cheap Canadian oil, lured by \$50 discount over U.S. crude; October 11, 2018. Retrieved from: <https://business.financialpost.com/commodities/energy/china-swoops-in-on-canada-oil-thats-50-cheaper-than-u-s-crude> (accessed November 2018)

¹⁷ Government of Saskatchewan. Crude Oil Volume and Value Summary by Month. Retrieved from: http://publications.gov.sk.ca/documents/310/97958-2017%20Crude%20Oil%20Volume%20And%20Value%20Summary_201808.pdf (accessed September 2018)

¹⁸ The Conference Board of Canada. Provincial Outlook Economic Forecast: Saskatchewan— Summer 2018. Retrieved from: https://www.conferenceboard.ca/temp/38d4573e-0938-44b5-accf-ecd8a32679b2/9870_PMT_SK_Summer2018.pdf (accessed September 2018)

¹⁹ Financial Post. LNG Canada, nation’s biggest private-sector project yet, wins go-ahead. Retrieved from: <https://business.financialpost.com/commodities/energy/update-3-massive-canada-lng-project-gets-green-light-as-asia-demand-for-fuel-booms> (accessed October 2018)

²⁰ The Conference Board of Canada. Territorial Outlook Economic Forecast: Spring 2018. Retrieved from <http://www.conferenceboard.ca/e-library/abstract.aspx?did=8979> (accessed September 2018; subscription required)