
INDUSTRY OVERVIEW

The information presented in this section is, including certain facts, statistics and data, derived from various official government publications and other publications from the Industry Report, which was commissioned by us, unless otherwise indicated. We believe that these sources are appropriate for such information and we have taken reasonable care in extracting and reproducing such information. We have no reason to believe that such information is false or misleading in any material respect or that any fact has been omitted that would render such information false or misleading in any material respect. Our Directors confirm that, after taking reasonable care, there is no adverse change in the market information that would qualify, contradict or have a material impact on such information since the date of the Industry Report. The information has not been independently verified by our Company, the Sole Sponsor, the Joint Global Coordinators, the Joint Bookrunners, the Joint Lead Managers, the Underwriters, any of our or their respective directors, officers or representatives, or any other person involved in the Global Offering and no representation is given as to its accuracy. As such, investors are cautioned not to place any undue reliance on the information and statistics set forth in this section and elsewhere in this document.

SOURCE OF INFORMATION

We have commissioned F&S, an independent market researcher and consultant, to conduct a study and an analysis of and to report on the Natural Gas and Oil Industry in Canada for a fee of US\$108,000. F&S is a global consulting company founded in 1961 in New York and has over 40 offices worldwide with more than 2,000 industry consultants, market research and technology analysts and economists. F&S's services include, among others, technology research, independent market research, economic research, customer research, corporate best practices advising and customer research.

We have included certain information from the Industry Report in this Prospectus because we believe such information facilitates an understanding of the Natural Gas and Oil Industry in Canada for prospective investors. The methodology used by F&S in gathering the relevant market data in compiling the Industry Report included secondary research and primary interviews. Secondary research involves information integration of data and publication from publicly available resources, including official data and market research on industry and enterprise information issued by our chief competitors. Primary interviews were conducted with industry participants such as service companies, associations, trade bodies and relevant institutions to obtain objective and factual data and document predictions. F&S considered the source of information reliable because they have validated and crosschecked all data through various sources including primary discussions and also through their own proprietary research methodology. In addition, the impact of key macro-economic scenarios and possible future industry trends were factored into while forecasting the data. It must be noted that forecasts are subject to variations in the future.

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OVERVIEW OF THE GLOBAL NATURAL GAS AND OIL INDUSTRY

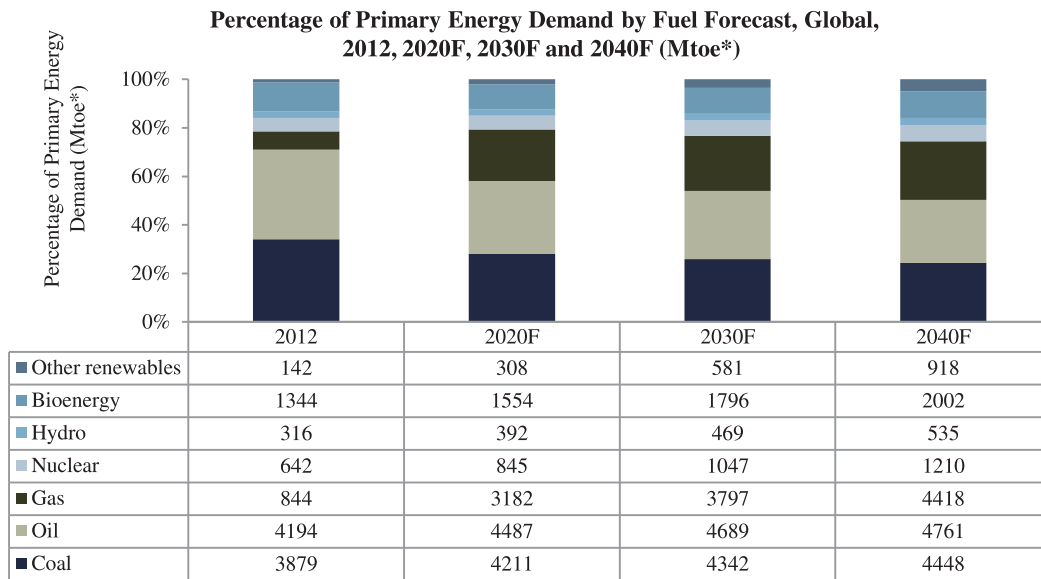
1 Introduction to Natural Gas and Oil

Natural gas is a cleaner¹ burning fossil fuel, with 30.0% less carbon than oil and as much as 60% less carbon than coal. Substituting natural gas for other fossil fuels can reduce emissions and contribute to a cleaner environment. Leading applications/uses of natural gas include, among others, power generation, heating, transportation and for industrial processing such as for the manufacture of fertilizers, petrochemicals and extraction process of oil from oil sands.

Natural gas is forecast to play a significant role in the power generation mix by 2040. According to the World Energy Outlook (WEO) 2014, its role in the primary energy mix is projected to increase from approximately 7.0% in 2012 to approximately 24.0% by 2040.

Oil is used as transportation fuel, fuel oils for heating and electricity generation, for making asphalt and other oil-derived materials. The demand for oil from the transportation sector is forecast to increase while demand from the power generation sector is expected to decline.

Exhibit 1: Percentage of Global Primary Energy Demand by Fuel Forecast (Mtoe)



Note: Other renewables include wind, solar PV, concentrated solar power (CSP), geothermal, and marine.

* Million tonnes of oil equivalent

Source: World Energy Outlook (WEO) 2014, Frost & Sullivan

¹ Canadian Energy Research Institute.

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1.1 Industry Value Chain

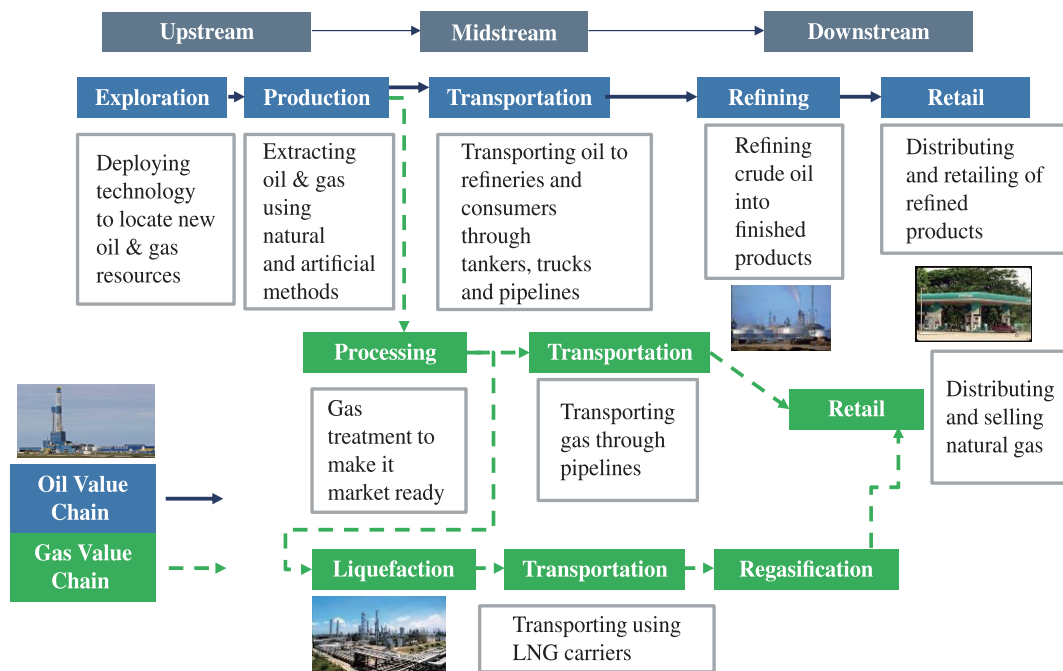
The upstream natural gas and oil industry is involved in the exploration and production (extraction) of oil or natural gas from onshore or offshore oil or natural gas fields. This phase is common for both, the natural gas and oil value chains.

The midstream natural gas industry involves natural gas processing and liquefaction facilities whereas the midstream oil industry involves storage and transportation of oil.

The downstream natural gas industry involves the distribution of natural gas to end-users. Natural gas can be transported either in a gaseous or liquid state, in the form of LNG. Liquefaction and regasification are thereby exclusive to the natural gas value chain. The downstream oil industry involves refining of crude oil into refined petroleum products, and retail and distribution to end-users.

Global best practices show that it is generally more economical to transport natural gas through pipelines for distances shorter than 2,500 km while natural gas can be transported in the form of LNG and through natural gas carriers for distances more than 2,500 km.

Exhibit 2: Natural Gas & Oil Value Chain



Source: Frost & Sullivan

As at 2015, conventional natural gas and oil refer to gas and oil that can be produced using traditional methods of drilling and extraction without any need for special techniques or technologies.

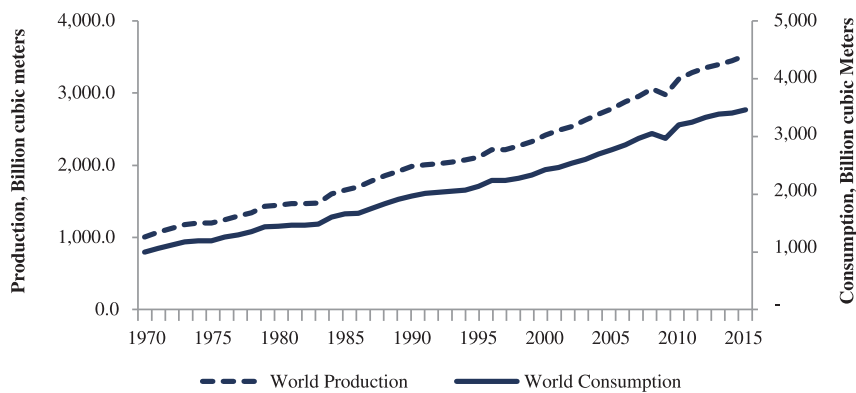
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Unconventional gas and oil refer to gas and oil that need specialized drilling and production techniques. For example, horizontal drilling is a new technology for extracting shale oil or gas. This is an improvement over conventional drilling and allows for the development of fields that could not be accessed by regular drilling techniques.

1.2 Global Natural Gas Production and Consumption

The global natural gas production increased at a CAGR of 2.9% from 992.0 bcm in 1970 to 3,539.0 bcm in 2015.² In comparison, the global natural gas consumption increased at a CAGR of 2.9% from 979.0 bcm in 1970 to 3,469.0 bcm in 2015.

Exhibit 3: Global Natural Gas Production & Consumption, 1970–2015 (bcm)



Source: BP Statistical Review of World Energy June 2016

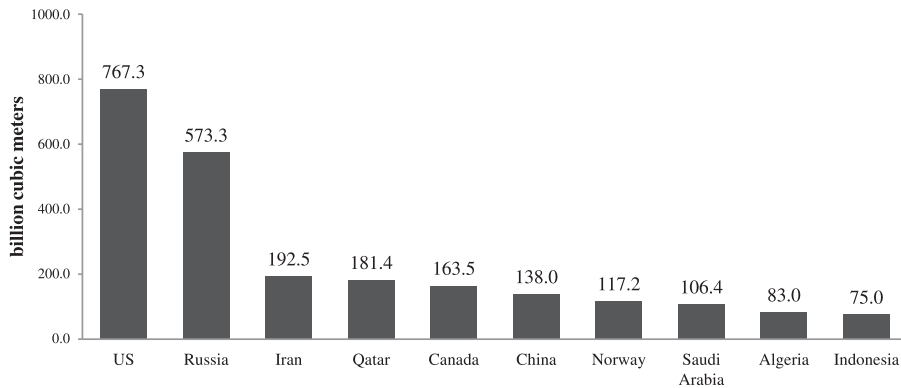
In 2015, the top five natural gas producing countries in the world were US, Russia, Iran, Qatar and Canada. Canada has consistently been in the top five natural gas producing countries since 2011.

In 2015, the US was the leader in natural gas production at 767.3 bcm, accounting for 22.0% share of the global natural gas production, followed by Russia and Iran with a share of 16.1% and 5.4% respectively². Canada's natural gas production share fell from third in 2010, with a global share of 5.0%, to fifth in 2015, with a global share of 4.6%. The reason for Canada's decline can be attributed to the fact that during 2010–2015, natural gas production in Iran and Qatar increased by 26.3% and 38.3% respectively.

² BP Statistical Review of World Energy June 2016.

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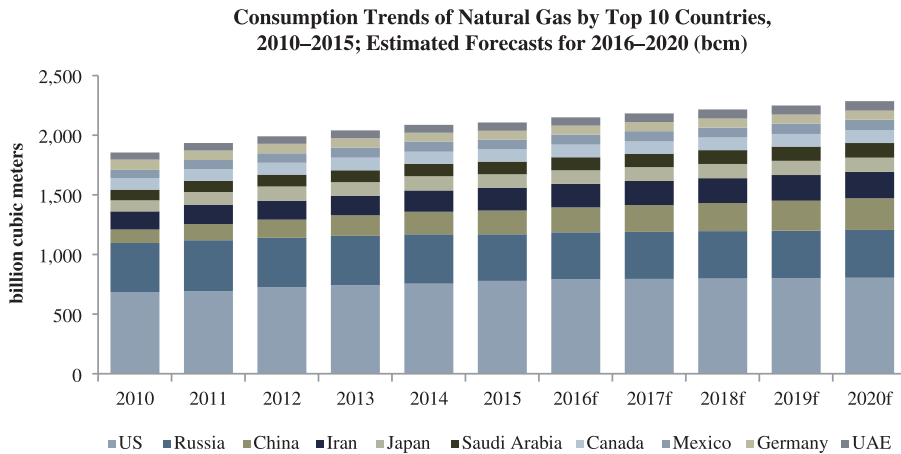
Exhibit 4: Top 10 Natural Gas Producing Countries, 2015 (bcm)



Source: BP Statistical Review of World Energy June 2016

In 2015, the top 10 countries for natural gas consumption cumulatively accounted for 60.8% of the global natural gas consumption. The US was the leader with 22.8% of global natural gas consumption at 778.0 bcm followed by Russia with a global share of 11.2% based on natural gas consumption of 391.5 bcm. Natural gas consumption in the US is expected to grow to 805.1 bcm in 2020 at a CAGR of 0.7% from 2015 levels. In comparison, Russia's natural gas consumption is forecasted to grow to 399.4 bcm in 2020 at a CAGR of 0.4% from 2015 levels. China is expected to record a CAGR of 6.1% from 2015 to 2020 to reach 265.3 bcm.

Exhibit 5: Natural Gas Consumption Trends (bcm)



Source: US Energy Information Administration; BP Statistical Review of World Energy June 2016; Frost & Sullivan analysis

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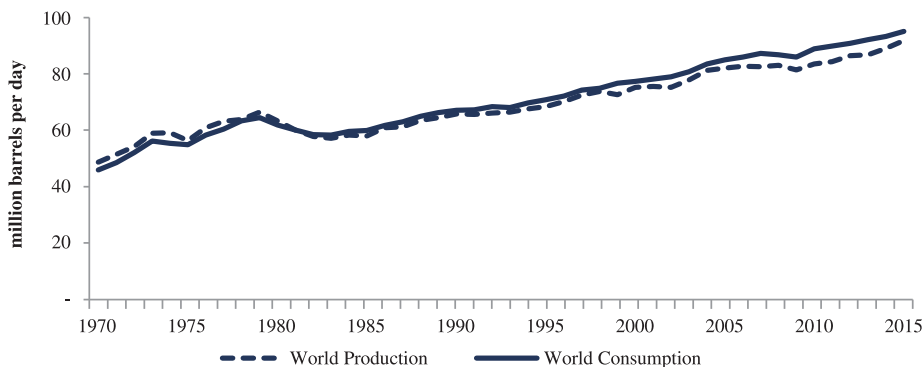
Natural gas consumption is facilitated by the corresponding increase in LNG trade. The global LNG market³ is poised for high growth with several liquefaction and regasification projects in construction or proposal stage. LNG supply is likely to grow at 7.8% between 2013 and 2020 with Asian markets expected to remain the largest destination for LNG supplies. LNG is forecasted to become the dominant form of traded gas by 2035.

Natural gas power projects are increasingly considered as a complementary and bridging resource towards a dominant renewable energy power scenario. It is easier and quicker to implement than nuclear power projects and is a much cleaner resource than fossil fuels such as coal and oil.

1.3 Oil Production and Consumption

The global oil production increased at a CAGR of 1.4% from 48.1 MMbbls/d in 1970 to 91.7 MMbbls/d in 2015.⁴ In comparison, the global oil consumption increased at a CAGR of 1.7% from 45.2 MMbbls/d in 1970 to 95.0 MMbbls/d in 2015. A large part of the difference between consumption and production is attributed to the use of alternative options such as biofuels, oil made from coal and other non-conventional sources, that are not included in the world production and consumption data sourced from the BP Statistical Review of World Energy June 2016 report.

Exhibit 6: Global Oil Production and Consumption Trends, 1970–2015 (MMbpd)



Source: BP Statistical Review of World Energy June 2016

1.4 Global Pricing Trends of Natural Gas and Oil

1.4.1 Natural gas prices

Traditionally, LNG buyers in the Asia-Pacific region have paid the highest price for natural gas. As LNG trade picks up, there is increasing availability of natural gas from various supplying countries, which may reduce prices. Natural gas pricing contracts are

³ BP Energy Outlook 2035.

⁴ BP Statistical Review of World Energy June 2016.

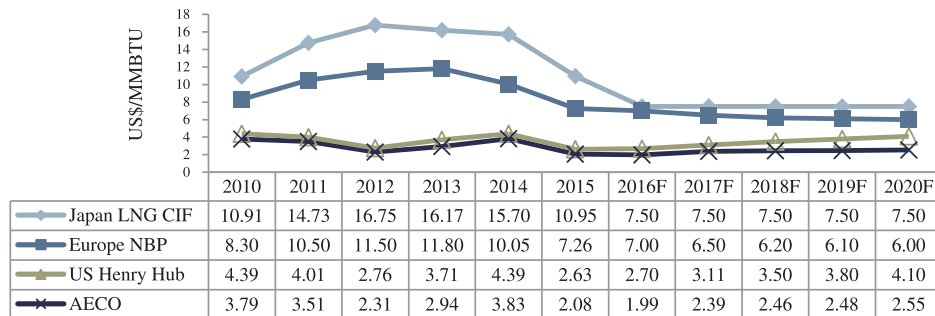
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oil-linked and expected to decrease in line with declining oil prices. Natural gas prices are set to dip slightly in North America and Europe. However, with LNG exports from North America destined for Europe and Asia, the natural gas prices in North America as compared to prices in 2013 are likely to gradually increase beyond 2020, with LNG exports boosting demand. European prices are expected to decrease slightly in the short-term and stabilize. Japan's natural gas prices are forecasted to drop as nuclear plants come online, resulting in weaker demand. However, in longer-term (post-2020) Japanese investment in natural gas plants should provide support to keep prices high.

Given the declining oil prices, investment in natural gas production assets is considered to be a better option.

US Henry Hub or AECO is most relevant to the Company's operations. As shown in Exhibit 7, there is price gap between US Henry Hub/AECO and Japanese LNG/Europe NBP; as such, the Company may benefit from potential price upside in the global natural gas market.

Exhibit 7: Natural Gas Prices, 2010–2020F (US\$/MMBtu)



Note: 1 MMBtu of natural gas =1 Giga Joule (GJ) equivalent approximately

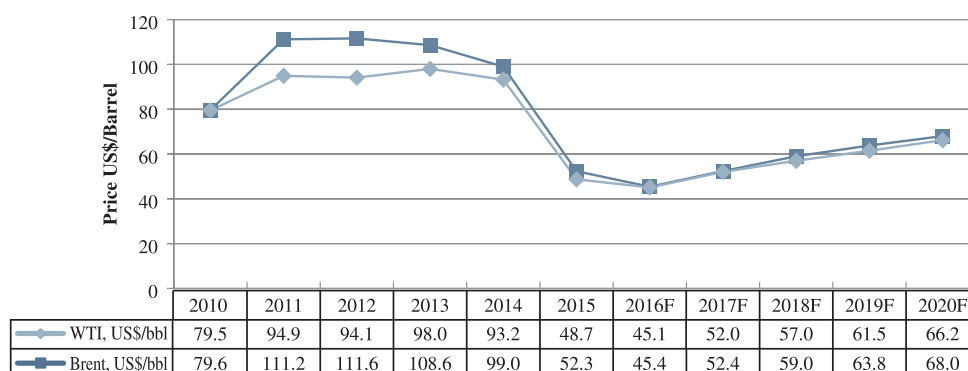
Source: US Energy Information Administration, Alberta Energy Regulator and Frost & Sullivan

1.4.2 Oil Prices

Due to the current supply glut, reducing global demand and the reluctance of oil producing nations to cut production, the oil prices started declining post-2013 onwards. In 2015, oil prices plunged sharply to reach US\$52.3/Bbl for Brent and US\$48.7/Bbl for WTI. As at July 11, 2016, Brent was priced at US\$44.04/Bbl, while WTI was traded at US\$44.73/Bbl. Oil prices are expected to increase gradually to US\$68.0/Bbl for Brent and US\$66.2/Bbl for WTI by 2020. Decline in production and modest growth in demand for oil are likely to drive the recovery. While recovery to peak prices of US\$100/Bbl of oil may be difficult; in the long-term, prices are projected to be around US\$75.0–80.0/Bbl as per Frost & Sullivan estimates.

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Exhibit 8: Oil Prices, 2010–2020F (US\$/Bbl)



Source: US Energy Information Administration

2 Canada & Alberta Natural Gas and Oil Industry

2.1 Overview of Canada's Natural Gas and Oil Industry

Canada has abundant natural gas reserves, with enough to support current levels of natural gas production for 100 years. Canada is the fourth largest exporter of natural gas accounting for 7.8% of the global natural gas exports.

Canada is a politically stable country and investment in the Canadian natural gas and oil projects should be considered from a long-term perspective and likely to carry a lower risk when compared to investment in emerging economies.

2.1.1 Contribution to GDP by the natural gas and oil industry in Canada

The GDP of Canada was C\$2.0 trillion in 2015 and expected to increase to C\$2.6 Trillion by 2020.

Exhibit 9: Canada's Total GDP, C\$ Billion

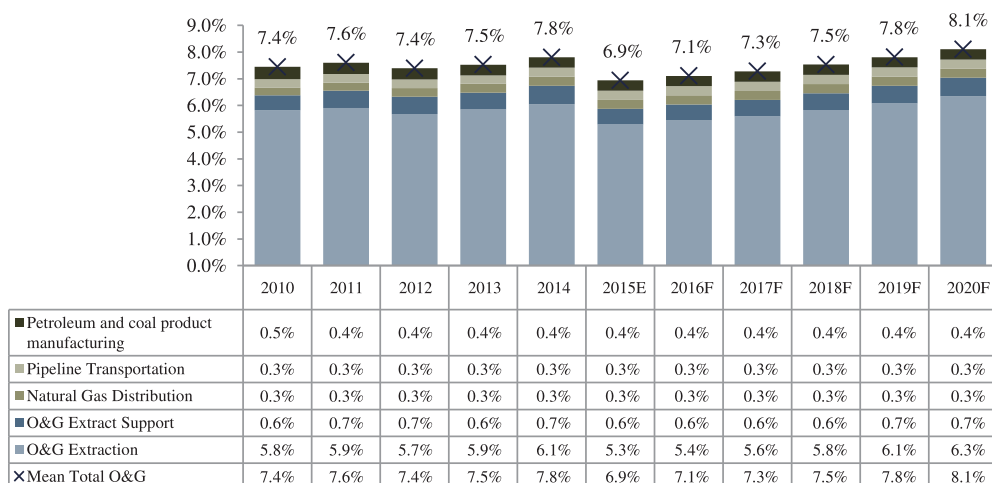
2010	2011	2012	2013	2014	2015	2016F	2017F	2018F	2019F	2020F
2,096	2,165	2,206	2,255	2,311	2,024	2,374	2,431	2,488	2,541	2,592

Source: Bank of Canada; Statistics Canada; World Bank; IMF; Frost & Sullivan Analysis

From 2010 to 2015, Canadian natural gas and oil industry's share of GDP ranged between 7.4% and 7.8%.

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**Exhibit 10: Canada's Natural Gas and Oil Share GDP
(C\$ billion, 2014 real currency), 2010–2020F**



Source: Bank of Canada; Statistics Canada; World Bank; IMF; Frost & Sullivan Analysis

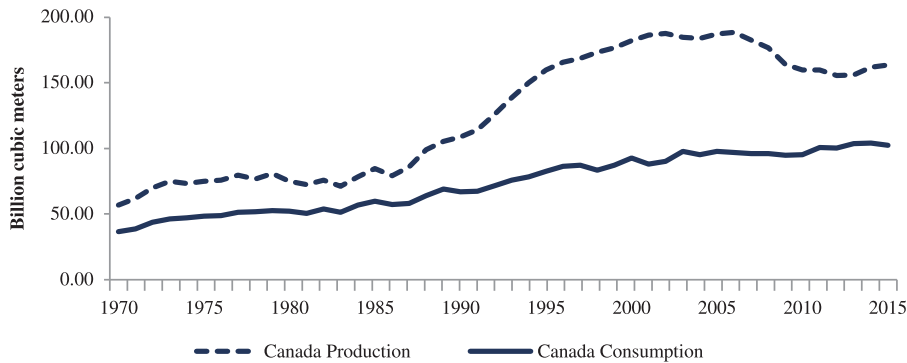
The share of the natural gas and oil industry to GDP is likely to fall to 7.1% in 2016 and gradually rise to 8.1% by 2020. The fall in 2016 is expected due to improved industrial activity compared with 2015.

Canada's natural gas and oil industry offers considerable economic benefits to its citizens and is the largest private sector investor in the country. According to the Canadian Association of Petroleum Producers, this sector contributed an estimated C\$17.0 billion to government revenues in 2015 in the form of royalty payments, land payments and income taxes. The natural gas and oil industry also generates direct and indirect employment to more than 450,000 people across the country.

Canada's natural gas production increased at a CAGR of 2.4% from 57.0 bcm in 1970 to 163.5 bcm in 2015. In comparison, Canada's natural gas consumption increased at a CAGR of 2.3% from 36.0 bcm in 1970 to 102.5 bcm in 2015.

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Exhibit 11: Canada’s Natural Gas Production and Consumption, 1970–2015 (bcm)



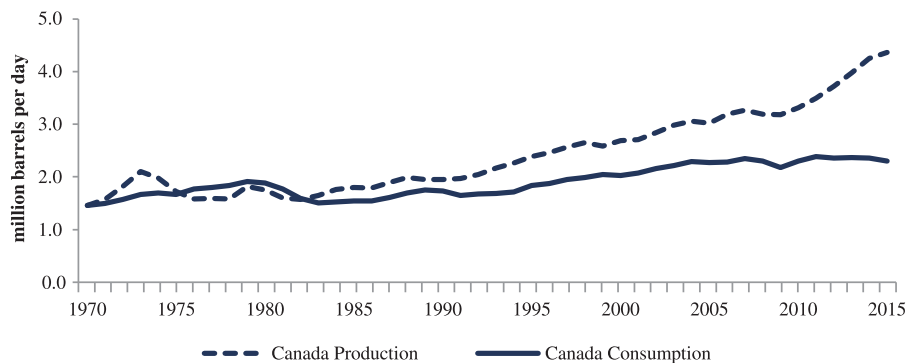
Note: 1 trillion cubic meters = 1,000 billion cubic meters.

Source: BP Statistical Review of World Energy June 2016

From 1990 to 2010, Canada’s natural gas industry benefitted from the exports to the US market. However from 2011 to 2015, increasing US shale gas production and competitive US natural gas pricing have impacted Canada’s natural gas exports to the US.

Canada’s oil production increased at a CAGR of 2.5% from 1.5 MMbpd in 1970 to 4.4 MMbpd in 2015. In comparison, Canada’s oil consumption increased at a CAGR of 1.0% from 1.5 MMbpd in 1970 to 2.3 MMbpd in 2015. The excess production has made Canada one of the top five net oil exporters.

Exhibit 12: Canada’s Oil Production and Consumption, 1970–2015 (MMbpd)



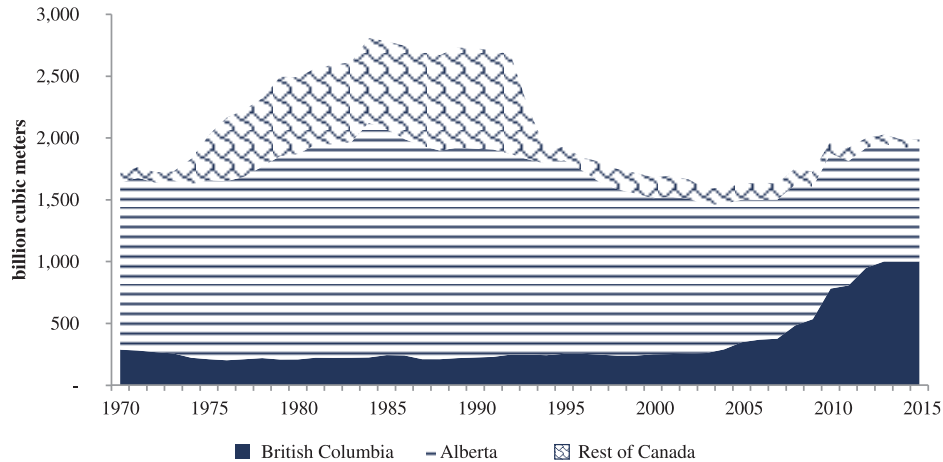
Source: BP Statistical Review of World Energy June 2016

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2.1.2 Overview of Canada's natural gas resources development

Canada's total natural gas reserves dropped significantly from 2,732 bcm in 1989 to 1,898 bcm in 1994 due to the use of the reserves in all other regions excluding Alberta and British Columbia. In 2004, the reserves further dropped to a low of 1,593 bcm. However, it has since gradually risen to 1,987 bcm in 2015, primarily due to the identification of new/additional reserves in British Columbia.

Exhibit 13: Canada's Natural Gas Reserves, 1970–2015 (bcm)



Note: Rest of Canada — Main Territory, Saskatchewan, Ontario, New Brunswick and East Coast Offshore.

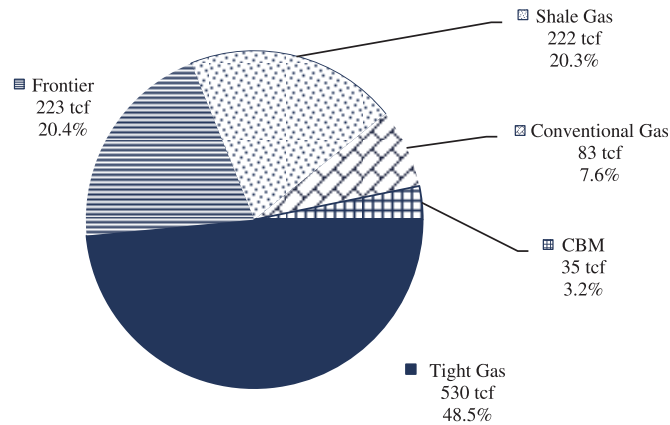
Source: Canadian Association of Petroleum Producers and BP Statistical Review of World Energy June 2016

After 2013, British Columbia overtook Alberta in natural gas reserves. As at 2015, Alberta's natural gas reserves were 46.0%, British Columbia was 50.2% and the rest of Canada was 3.8%.

As shown in Exhibit 14, 48.5% (530 tcf) of the natural gas reserves are from Tight Gas resources. Frontier and Shale Gas, each has a share of approximately 20.0% in reserves, amounting to around approximately 222 tcf each.

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Exhibit 14: Canada's Natural Gas Reserves by Resources, 2015

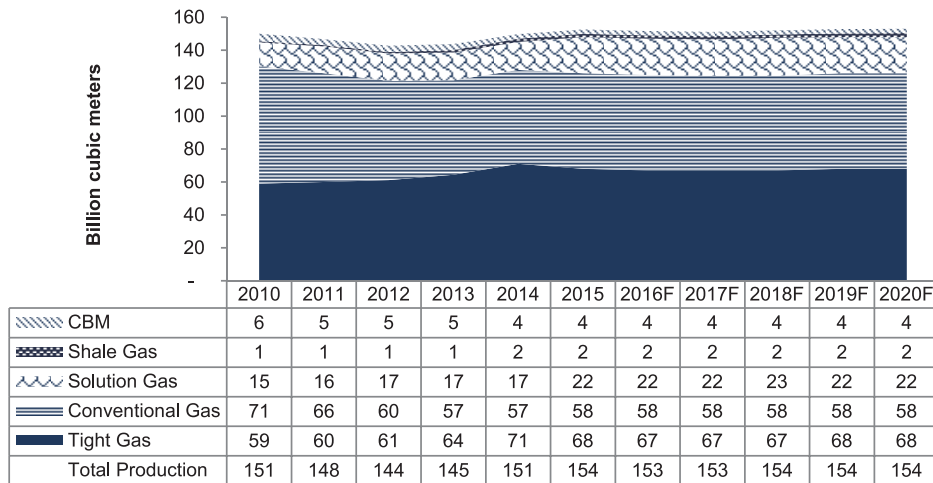


Note: Conventional Gas excludes Tight Gas.

Source: Canadian Gas Association and National Energy Board

Exhibit 15 indicates that Tight Gas has overtaken Conventional Gas from 2012 onwards within the marketable production mix of Canada. In 2015, Tight Gas had an estimated share of 44.2% of the total marketable production at 68 bcm.

Exhibit 15: Canada's Natural Gas Marketable Production, 2010–2020F (bcm)



Note: Conventional Gas excludes Tight Gas.

Source: Canadian Association of Petroleum Producers and Frost & Sullivan

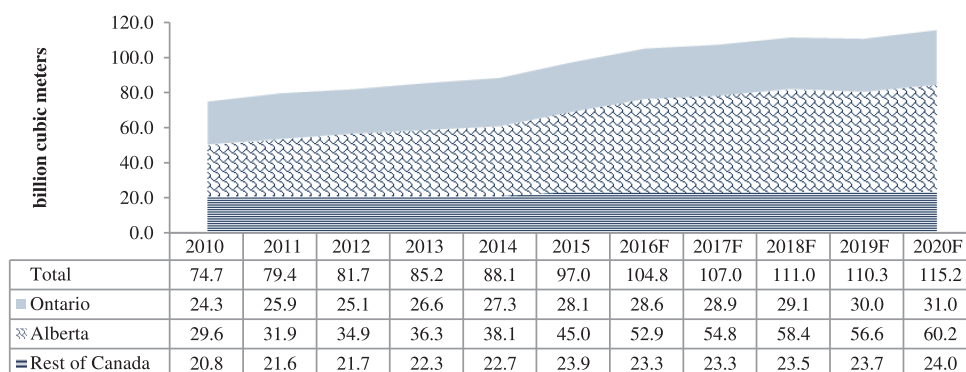
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By 2020, the total marketable production of natural gas is projected to be at the same levels as at 2015 due to the demand constraints shown by China and low oil prices.

2.1.3 Natural Gas Consumption by Region

The major markets for natural gas in Canada are Alberta and Ontario. In 2015, Alberta's share was 46.4% with a consumption of 45.0 bcm and is forecast to increase to 52.9 bcm in 2016 and further by 58.4 bcm in 2018. By 2020, Alberta's share is anticipated to grow to 52.3% with a consumption of 60.2 bcm. Alberta's demand for natural gas is expected to surge in 2016 due to growing demand from the oil sands sector and for power generation.

Exhibit 16: Canada's Natural Gas Consumption by Region, 2010–2020F (bcm)



Note: Rest of Canada — Nova Scotia, New Brunswick, Quebec, Manitoba, Saskatchewan and British Columbia, NWT & Yukon.

Source: Canadian Association of Petroleum Producers and Frost & Sullivan

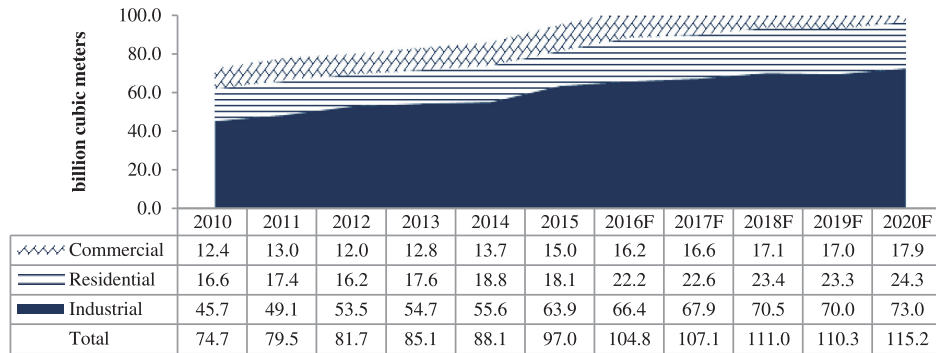
2.1.4 Natural Gas Demand Trends (2010 to 2015; Estimated Forecast to 2020)

As highlighted in Exhibit 17, Canada's natural gas consumption grew by a CAGR of 5.4% from 74.7 bcm in 2010 to 97.0 bcm in 2015. Natural gas consumption is forecasted to grow to 115.2 bcm in 2020 at a CAGR of 3.5% with 2015 as the base year owing to expected improvements in industrial consumption.

Between 2010 and 2015, few industries such as fertilizer manufacturing, recycling facilities, livestock, mining (precious metals) and heavy truck manufacturing exhibited strong revenue growth. Traditionally, natural gas and electricity have been common types of heating energy used in Canadian residential homes during winter. Besides home heating, natural gas is also used for heating water and fueling large appliances such as stoves, clothes dryers, and barbecues.

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Exhibit 17: Canada's Natural Gas Consumption by Type, 2010–2020F (bcm)



Note:

- Commercial customers include those engaged in wholesale or retail trade, governments, institutions, office buildings.
- Residential customers use natural gas for domestic purposes, including space heating, water heating, cooking in a residential dwelling unit.
- Industrial customers are engaged in a process that creates or changes raw or unfinished materials into another form or product. Includes firm, interruptible and buy/sell agreements.

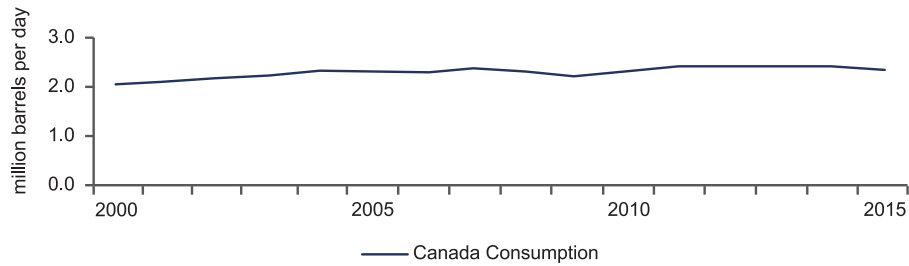
Source: Statistics Canada; Bank of Canada; IMF; Frost & Sullivan Analysis

Currently, the Canadian natural gas trade relies on pipeline transportation in North America. There are about 510,000 km⁵ of natural gas pipelines that deliver natural gas to customers in Canada. In addition, Canada imports LNG from Trinidad and Tobago, and Qatar.

Oil Reserves and Consumption: Canada has total of 171.8 billion Bbls reserves. These are mainly concentrated in Alberta and makes up 98.0% of the total oil reserves in Canada. In terms of oil consumption, Western Canada region has the highest oil consumption in the country.

⁵ Report of the dialogues on Canada's natural gas industry, *Canadian Natural Gas*, April 2013.

Exhibit 18: Canada's Crude Oil Consumption, 2000–2015, MMbpd



Source: *BP Statistical Review of World Energy June 2016*

2.2 Overview of Alberta's Natural Gas & Oil Industry

2.2.1 Alberta's Natural Gas & Oil Industry

The natural gas and oil industry is an extremely important revenue contributor to the economy of Alberta. The government obtains royalties and taxes from the natural gas and oil industry activities. The industry creates jobs and benefits the local communities. Alberta registered the highest average annual economic growth in Canada from 1994 to 2015, fueled by abundant natural resources, a diverse economy and government commitment to supporting innovation and entrepreneurship. Alberta is one of the premier destinations in Canada that has retained its appeal as a place to settle down and invest.

Alberta offers a highly competitive business⁶ environment with attractive incentives such as:

- No provincial retail sales tax, no provincial capital taxes, no payroll taxes, no machinery and equipment taxes, and the lowest gasoline tax among Canadian provinces.
- Attractive combined federal and provincial corporate tax rates in the country at 27%.

Natural gas and oil is one of the strongest industrial sectors in Alberta. The Annual Survey of Petroleum Executives ranks Alberta among the top five most attractive large petroleum jurisdictions in the world. The other four are Texas, United Arab Emirates, Qatar and Kuwait.

Alberta has abundant natural gas resources that include conventional natural gas, unconventional coal bed methane and shale gas. Reserves⁷ of conventional natural gas currently stand at 29 tcf and 2.4 tcf from coalbed methane. The province estimates the remaining ultimate potential of marketable conventional natural gas to be at 74 tcf.

⁶ Canadian Trade Commissioner Service.

⁷ Alberta Energy Regulator

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Current production of natural gas in Alberta is approximately 4 tcf that is transported to both Canadian and US markets. The province has an extensive pipelines network and storage infrastructure for the transportation of natural gas.

The province's marketable natural gas production, including CBM, was approximately 3.8 tcf in 2015. Only 30.0% of natural gas produced is consumed within Alberta; with the remaining 70.0% is exported to other provinces of Canada and the US.

Alberta's residential and commercial sectors account for 17.0% of the province's marketable natural gas consumed in Alberta for home and business heating. The remaining 83.0% of natural gas consumed in Alberta is used by the industrial, electricity generation, transportation, and other sectors. Natural gas is also an essential raw material for the province's oil sands and electric power generation industries.

The oil sands industry is vital to Alberta. However, declining oil prices have put a big question mark on the sustainability of the oil sands industry in the province.

To date, Canada does not have operational LNG export facilities. However, as of March 2015, 20⁸ proposed LNG export facilities in Canada have entered the regulatory review process — at least 16 of them in British Columbia and one in Nova Scotia.

With North America becoming self-sufficient in natural gas, there is an opportunity for Canada to capitalize on its LNG export potential. The Government of Canada is working closely with British Columbia and other provinces to support the development of a robust LNG industry in the country.

The local province regulations encourage investments into natural gas assets by giving royalty credits. In Alberta, royalties for natural gas are set by a sliding scale formula containing separate elements that account for market price and well production. As of September 30, 2016, the royalty rate for natural gas ranges from 5–36%. The Government of Alberta finalized the new Royalty Framework during April 2016. All petroleum products from wells drilled after January 1, 2017 will have an initial royalty rate of 5%. This royalty rate will continue until the cumulative revenue from the well reaches a threshold value known as C*. The value of C* is calculated for new wells based on the well's true vertical depth, total lateral length and total proppant placed. After C* is reached, royalties are based on price and depending on the monthly production of the well can be rate dependant as well.

The Alberta government established a royalty incentive plan called 'Horizontal Oil New Well Royalty Reduction' — wells that came on production on or after May 1, 2010 will enjoy a deducted royalty rate of 5%. However, this royalty rate will be subject to a cap based on either 12 production months, 50,000 barrels of oil production including

⁸ "A Citizen's Guide to LNG" from the Resource Works Society

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equivalents for oil wells, or 500MMcf of gas production including equivalents for gas wells, whichever is reached first. These credits are given to E&P companies that drill in the region, valid till December 2018 and are likely to be extended.

Alberta has an extremely attractive royalty regime for natural gas production. Under the current system, the royalty rates for natural gas can vary from 5% to 36% depending on the quantity and conditions of natural gas production.

There are over 8,600 equipment and service firms based in Alberta catering to the natural gas and oil industry and employing around 110,000 people. Some of the world's largest natural gas and oil service companies such as Schlumberger, Weatherford, Halliburton and Baker Hughes have a presence in the province. The presence of many service providers increases competition, with natural gas and oil producers able to get competitive rates. This keeps the natural gas and oil production activities cost effective.

The natural gas fields in Alberta have an extended economic lifespan of 25 to 30 years which is an attractive feature for investments.

Natural gas producing wells have declined from 131,963 in 2010 to 123,023 in 2015. The number of producing wells is likely to increase slightly to 170,800 by 2020. Decline in the number of wells is likely to result in a corresponding decline of natural gas produced compared to 2010 levels.

2.2.2 Royalty Framework

Approximately, 80.0% of the natural gas produced in Alberta is on Crown land. The lands are leased to natural gas companies that pay a royalty to the Government on the amount of natural gas produced. Alberta offers a very attractive royalty regime for natural gas producers.

In the previous royalty regime, the overall royalty rate varied from 5% to 36% sliding scale depending on the natural gas component. Please see Exhibit 19 for details.

Exhibit 19: Natural Gas Royalty in Alberta, 2015

Natural Gas Component	Royalty Rate
Methane	5% to 36% sliding scale
Ethane	5% to 36% sliding scale
Propane	30% fixed rate
Butane	30% fixed rate

Source: Alberta Government

The Government of Alberta finalized the new Royalty Framework during April 2016. Starting January 1, 2017, crude oil, natural gas liquids and natural gas production will have a flat royalty rate of 5%, until cumulative revenue from a well is equal to the

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drilling and completion costs. After that pay-out, royalties will be energy price-sensitive and reflect expected returns over the life of the well. The new Royalty Framework removes economic distortions and provides incentives for companies to lower their operating costs, helping to spur innovation in the sector.

According to Alberta Government's announcement on July 12, 2016, early access to the new framework is optional and will be application-based. As part of their application to opt in, early companies will need to prove their activity is above and beyond what was already planned. Any wells previously started will stay under the old royalty system. In other words, for wells drilled before 2017, the existing rates will remain in effect until 2026; however, wells drilled after July 13, 2016 may be applicable under the new royalty framework if the well represents additional capital investment and would not otherwise be drilled.

Exhibit 19A: Royalty Rates Structure Over the Lifecycle of a Well

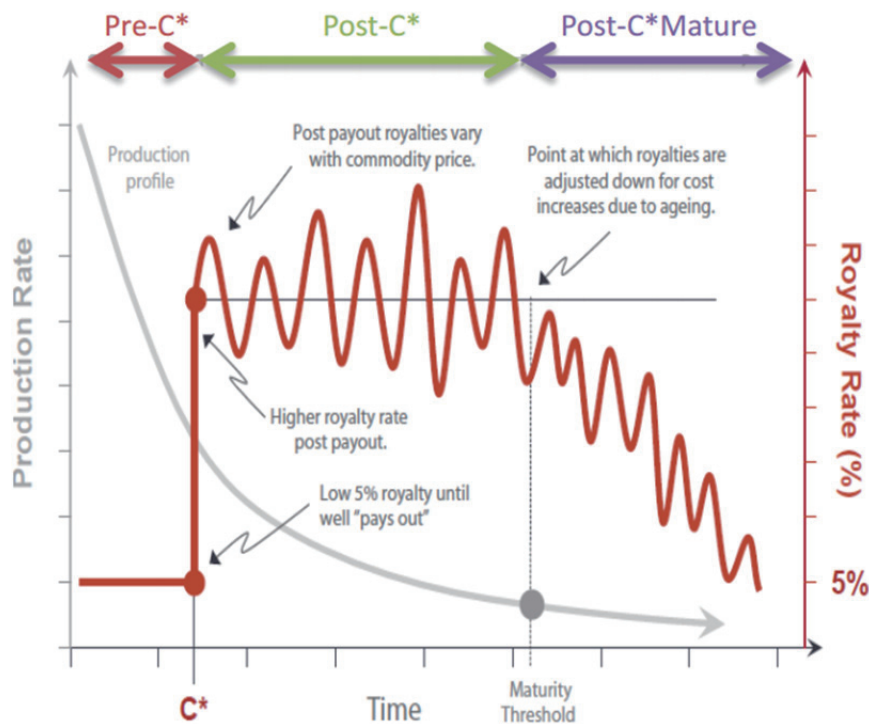


Image Source: Alberta Government

As per the new royalty framework, a company will pay a flat royalty of 5% on a well's early production until the well's revenue, from all hydrocarbon products, equals C*. Afterwards, the company will pay higher royalty rates that vary depending on the resource and market prices. Royalty rates will drop to match declining production rates when the well reaches a Maturity Threshold.

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The C* of a well is calculated as follows:

1. For Wells with TVD \leq 2000 meters

$$C^*(\$) = 1,170*(TVD-249)+800*TLL+0.6*TVD*TPP$$

2. For wells with TVD $>$ 2000 meters

$$C^*(\$) = 1,170*(TVD-249)+3,120*(TVD-2000)+800*TLL+0.6*TVD*TPP$$

Exhibit 19B: TPP, TVD and TLL for C* Calculations

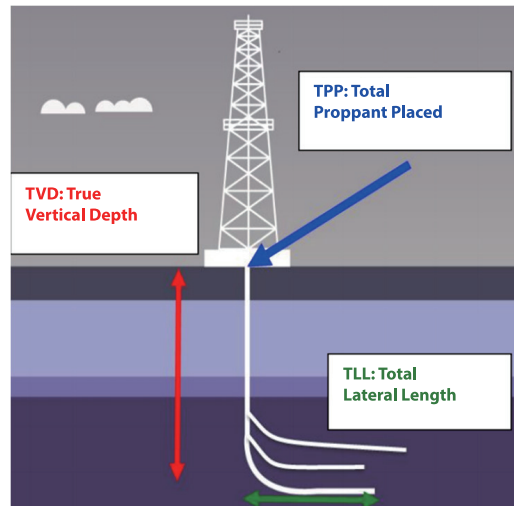


Image Source: Alberta Government

The calculation of C* is the same for all wells, regardless of what hydrocarbon the well produces. When a company drills a well, the well's true vertical depth (TVD), total lateral length (TLL) and total proppant placed (TPP) are entered into the Drilling and Completion Cost Allowance formula to calculate the C* value for the well. The formula for wells deeper than 2000 meters reflect the higher complexity and the higher cost per meter to drill a deep well.

2.2.3 Current and Projected Natural Gas Production (2010–2015; Forecasts to 2020)

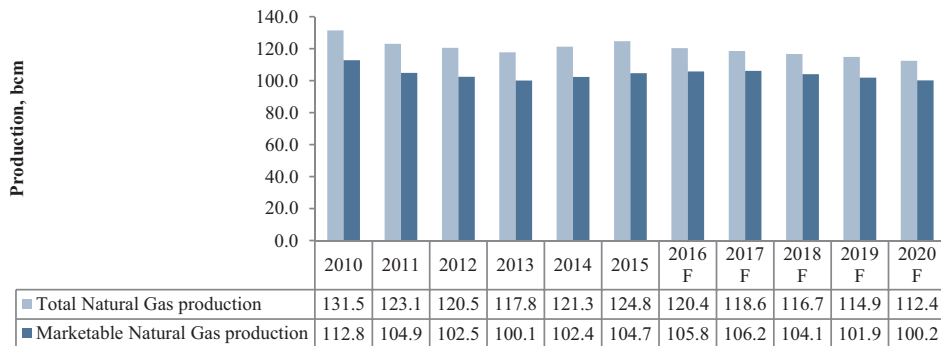
The natural gas production in Alberta was 124.8 bcm in 2015 compared with approximately 131.5 bcm in 2010. The overall decline is expected to continue, with natural gas production projected to reach nearly 112.4 bcm by 2020. Of the total production, a part of it is flared or vented, and hence, the marketable natural gas production is lower. The marketable natural gas production was 104.7 bcm in 2015 and

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expected to reduce to approximately 100.2 bcm by 2020. The decline in Alberta’s marketable natural gas production is most likely expected due to the following main reasons:

- Maturing gas fields in Alberta where production has already reached its peak and output is likely to decline during the forecast period.
- Expected closure of few unprofitable existing production sites that would impact throughput and overall production in the province.

Exhibit 20: Total Natural Gas Production and Marketable Natural Gas Production, Alberta (bcm) 2010–2015 (Actuals), 2016–2020 (Forecasts)



Source: Canadian Association of Petroleum Producers and Frost & Sullivan

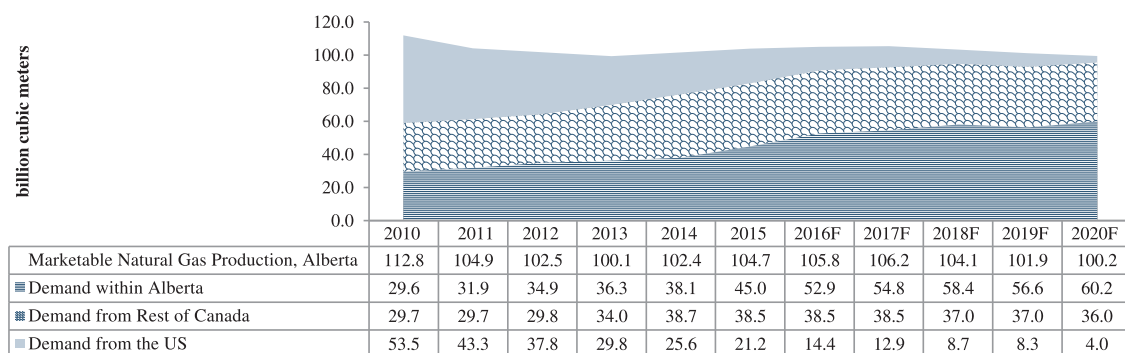
Based on annual gas production estimates by the Company, its production is forecast to increase from 0.364 bcm (12,876 MMcf) in 2017 to 0.387 bcm (13,674 MMcf) in 2018 and 0.460 bcm (16,249 MMcf) in 2019. This translates to 0.34%, 0.37% and 0.45% in 2017, 2018 and 2019 respectively as a percentage to Alberta’s marketable natural gas production estimates.

2.2.4 Target Markets’ Demand Including Canada and US (2010–2015)

In 2015, domestic demand (within Alberta) was a major market for Alberta’s marketable natural gas production contributing around 43.0% of the demand. Demand from the US market accounted for nearly 20.2% of the marketable natural gas production in Alberta and the remaining 36.8% was supplied to other provinces in Canada.

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Exhibit 20A: Demand for Alberta’s Marketable Natural Gas Production (in bcm) from Rest of Canada and US, 2010-2015 (Actuals), 2016-2020 (Forecasts)



Note: Rest of Canada — Nova Scotia, New Brunswick, Quebec, Manitoba, Saskatchewan and British Columbia, NWT & Yukon.

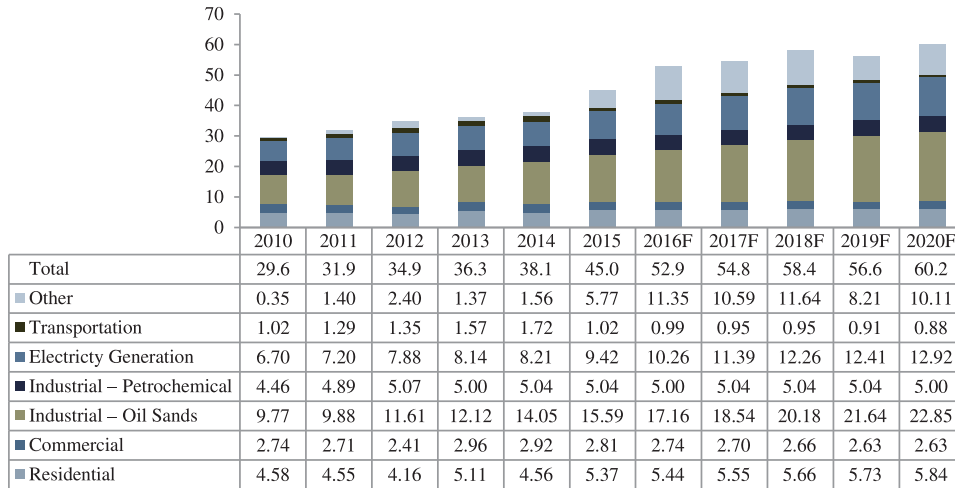
Source: Canadian Association of Petroleum Producers, Alberta Energy Regulator and Frost & Sullivan

Alberta’s natural gas export to the US market has declined by 16.9% CAGR from 2010 to 2015 and is expected to decline further during the forecast period as gas from the Marcellus and Utica Shale in the US finds its way into the US domestic market replacing the gas supplied by Alberta.

Although decrease in demand in the export market may increase competition in domestic markets, it may have little impact on the demand of Alberta’s natural gas since the demand within Canada is growing gradually. The major domestic uses of natural gas in Alberta are for crude oil production (from oil sands) and electricity generation, which are expected to grow at an annual average of 5.0% and 3.0% respectively. The oil sands are expected to be the primary source of demand for Alberta’s natural gas production, offsetting some of the demand loss in export markets. In addition to this, demand for natural gas is expected to rise due to the likely switch from coal to gas as a fuel for the province’s electricity generation as a result of Government of Alberta’s Climate Leadership Plan and pre-existing federal regulations. Therefore, it is expected that the total consumption of natural gas in Alberta is likely to increase to 60.2 bcm by 2020.

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Exhibit 21: Domestic Demand for Alberta’s Natural Gas by End-User Segments (bcm) 2010–2015 (Actual), 2016–2020 (Forecast)

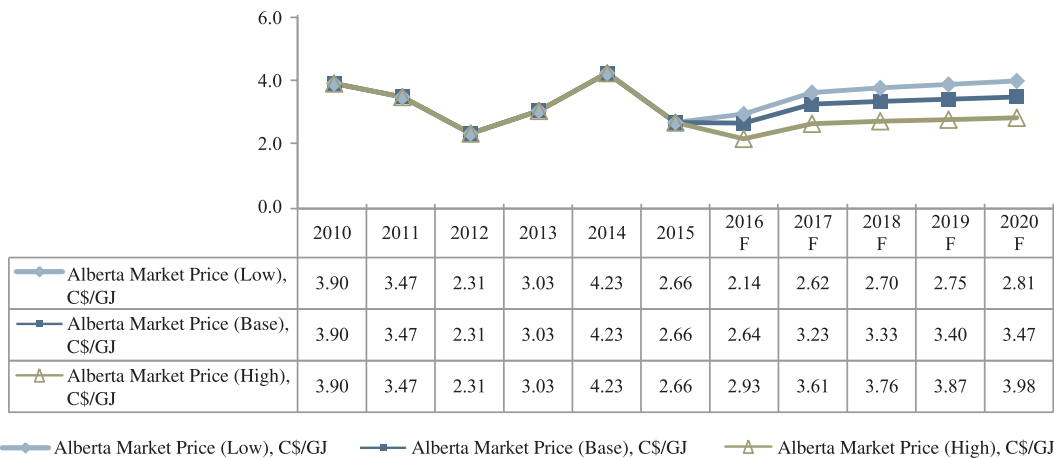


Note: ‘Other’ includes non-energy use such as feedstock for petrochemicals.

Source: Frost & Sullivan

2.2.5 Natural Gas Pricing in Alberta

Exhibit 22: Alberta’s Natural Gas Prices, 2010-2015; Forecasts 2016 to 2020 (C\$/GJ)



Source: Alberta Energy Regulator

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The natural gas market is open and competitive with prices influenced by many variables throughout North America. These include¹⁰ natural gas supply and demand, natural gas production and exploration activity, natural gas reserves in place, natural gas storage capacities and activities, weather, availability and pricing of competing energy sources and market participants' opinion of future trends in any of these or other variables.

Since end of August 2016, prices are exhibiting an increasing trend. Natural gas prices are expected to rise gradually from 2017 to reach C\$3.47 per GJ (in the base case scenario) by 2020. Compared with the Japan LNG, the Henry Hub and Europe Gas prices, Alberta's natural gas prices are lower. The lower pricing compared to global gas prices gives scope for increase in gas prices in Alberta. Increase in global LNG trade is driving globalization of natural gas prices.

2.2.6 Alberta's Natural Gas Industry Outlook

Natural gas demand (including indirect effect from electricity growth) in Canada is influenced primarily by the growth rate of the economy in Canada and US. Currently, natural gas provides 11.0% of Canada's electricity generation. Due to its scalability, it can be effectively deployed along with the wind and solar power farms across the country.

Most of the increase in North American natural gas requirements comes from the displacement of coal in the power sector and oil in the transportation sector. Besides, the global push for energy efficiency is a significant moderating influence on residential and commercial demand for natural gas and electricity.

Canadian natural gas producers, apart from having growing customer demand in North America, have opportunities to target the large Asia LNG markets such as Japan, South Korea and China. The proposed LNG projects in Canada are to be driven by the growing natural gas production.

At the end of 2015, the North American natural gas market was widely viewed as oversupplied. Alberta's natural gas faces increasing competition from Marcellus gas-producing areas that are closer to markets in Central Canada, as well as the US Northeast and Midwest.

However, loss of natural gas demand in export markets will be offset by increasing demand within Alberta because they are widely used for crude oil production (from oil sands) and electricity generation. As a result, demand is likely to expand for new natural gas production.

¹⁰ As indicated by Government of Alberta.

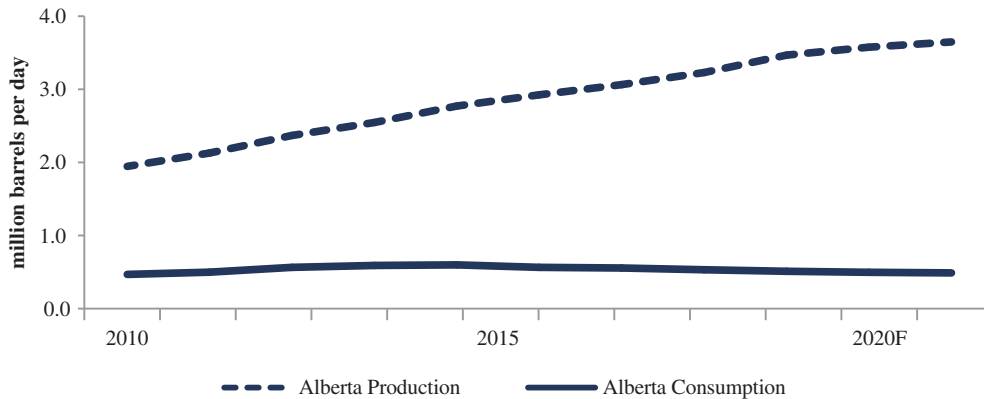
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Depressed natural gas and oil prices are resulting in a reduction in investment capital further, leading to producers lowering costs of production and focusing new drilling efforts on the most economically-viable prospects. In other words, investment in times of low prices focuses on high-grade¹¹ resources. Companies with access to high-grade conventional resources are likely to be able to raise capital for increasing production.

2.2.7 Alberta's Oil Production and Consumption

Alberta has the biggest oil sands deposits in Canada producing 2.9 million bbls/d from the oil sands in 2015. Alberta's oil production increased at a CAGR of 8.5% from 2010 to 2015. Most of the crude oil produced in Alberta is exported to the rest of Canada or the US. Of the production that remains in the province, most is converted into transportation fuels at refineries in Alberta.

Exhibit 23: Alberta's Oil Production and Consumption, 2010–2020F (MMbpd)



Source: Canadian Association of Petroleum producers, National Energy Board, Alberta Energy Regulator

¹¹ High-grade or high quality resources are those where the quality of the reservoir is good and the impurities in the oil and gas are at a minimum. They also involve low risk of development and a definitive return on investment. However, there are no quantitative metrics to define high grade/quality assets.

3 The Competitive Landscape

Alberta is the energy province of Canada and had the largest natural gas and oil reserves in the country till 2012. However, British Columbia overtook Alberta's position as the leading province of natural gas reserves in 2013. Alberta provides ample opportunities for companies involved in the extraction and processing of natural gas and oil resources and leading companies in the Canadian natural gas and oil sector have a strong presence in Alberta.

The natural gas and oil companies operating in Canada can be classified as follows:

- i. large natural gas and oil company — quarterly production averaging over 200,000 Boe/d;
- ii. intermediate natural gas and oil company — quarterly production averaging between 10,000 Boe/d and 200,000 Boe/d;
- iii. junior natural gas and oil company — quarterly production averaging between 500 Boe/d and 10,000 Boe/d; or
- iv. emerging natural gas and oil company — quarterly production averaging less than 500 Boe/d.

Persta can be classified as a junior natural gas and oil company. For junior companies, it is important to focus on costs and efficiencies, especially during periods of low natural gas and oil prices. Minimizing operating costs for extracting resources is necessary. Junior companies operating on conventional oil fields having a higher ratio of natural gas in the company production portfolio are likely better equipped to compete in low natural gas and oil prices scenarios.

Large natural gas and oil companies are likely better prepared to weather the low oil price situation as they have access to a substantial capital base. However, even for these companies, costs and efficiencies do matter.

Integrated oil companies have more revenue streams than pure play production companies. However, pure play production companies can stay focused on production to become more efficient and cost effective.

3.1 Key Market Participants in the Alberta Region, Canada

Alberta is home to over 2,000 natural gas and oil producing companies. The table below presents production and reserves data of selected natural gas and oil companies in Alberta, Canada.

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Exhibit 24: Selected¹² Natural Gas & Oil Companies Operating in Alberta, by Production Volume/Reserves in Canada, as at December 31, 2015

<u>Company</u>	<u>Oil production in Canada</u> (bbl/day)	<u>Estimated percentage contribution to Canada's total oil production</u> (bbl/day)	<u>Natural gas production in Canada</u> (MMcf/day)	<u>Estimated contribution to Canada's total natural gas production</u> (MMcf/day)	<u>Proven and probable reserves in Canada, 2015</u> (MMboe)
Suncor Energy Inc	577,800	13.18%	N/A	N/A	7,600
Encana Corp	28,400	0.65%	971	6.15%	1,321 ¹³
Canadian Natural Resources Ltd ¹⁴	522,893	11.92%	1,663	10.53%	8,634
Husky Energy Inc	174,200	3.97%	514	3.25%	2,994
Cenovus Energy Inc	206,947	4.72%	441	2.79%	3,836
Bonavista Energy Corp	23,111	0.53%	337	2.13%	406
Birchcliff Energy Ltd	5,380	0.12%	201	1.27%	573
Tourmaline Oil Corp	19,755	0.45%	808	5.11%	207
Others	<u>2,826,514</u>	<u>64.46%</u>	<u>10,873.7</u>	<u>68.77%</u>	
Total	<u>4,385,000</u>	<u>100 %</u>	<u>15,800</u>	<u>100 %</u>	

Sources: Company Presentations, BP Statistical Outlook

Others include Persta. Persta's gas production during 2015 was 10.4 MMcf/day giving it a market share of about 0.07% of Canada's total gas production during 2015. Persta's oil production during 2015 was 138 barrels per day giving Persta a market share of 0.0032% of Canada's total oil production.

Junior or intermediate natural gas producers such as Persta that have access to high-quality conventional resources and low cost of production may be able to compete with large producers and remain profitable.

For high-quality conventional resources, Persta had shot 3D seismic data to define drilling targets, and drilled and commercially produced liquid-rich natural gas. Furthermore, the Group has secured access to sufficient pipeline transmission to deliver natural gas to market.

¹² The companies shown here operate in Alberta and are among the top oil & gas producers in Canada

¹³ Value shows Encana's proven reserves.

¹⁴ Data consists of North America production.

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For low production cost, Persta's lands are located close to the third party processing facilities and regional gathering systems, which enables Persta to benefit from lower transportation cost. Moreover, Persta enjoys a lower fixed cost per product unit due to a large volume of production. In addition, Persta's natural gas is sweet natural gas, which reduces the cost of gas gathering and processing.

3.2 Cost of Production Advantages For Persta

The natural gas and oil industry is a cyclical industry and follows boom and bust cycles. With the increase in oil supplies leading to a glut-like situation, oil prices in North America have reduced to US\$44.04/Bbl (Brent as on 11/7/2016). Natural gas prices in North America have remained low at around US\$2.63/MMbtu (Henry Hub) in 2015.

Weaker natural gas and oil prices drive the need for producers to be efficient and cut production costs to tide over the duration of lower selling prices. Natural gas from conventional sources is cheaper to produce compared to unconventional sources as there is no need for special equipment or techniques for natural gas extraction.

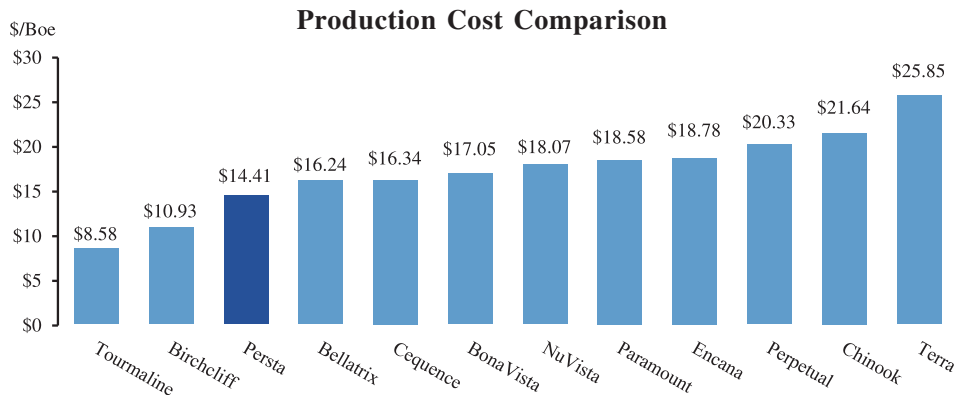
At selling prices below US\$2/MMbtu, pressure increases on the producers to lower costs of production. It is not easy to halt production as considerable investments have already been made bringing the projects into production. Unless costs are brought down, the producers may have to sell at a loss. Lowering production costs and increasing efficiencies are two fundamental ways to make such projects more competitive in challenging times.

Companies such as Persta producing more natural gas from high-quality assets are expected to have the competitive advantage of lower production costs per Boe extracted.

For the nine months ended September 30, 2016, Persta's production portfolio was 98.2% natural gas (including NGLs and condensate) and 1.8% light oil. This is a favorable portfolio with more natural gas in the production mix.

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Exhibit 25: Production Cost¹⁵ Comparison (2015), C\$/Boe



Source: Frost & Sullivan analysis, company reports

Persta compares very favorably among its peer group and is able to maintain its production¹⁶ costs less than C\$14.41/Boe.

For natural gas production, Persta is able to produce one Boe at C\$5.05. On September 19, 2016, the price of natural gas at C\$2.57/MMBTU¹⁷ or C\$16.66 per Boe, Persta can generate a positive cash flow of C\$11.61 for every Boe of natural gas produced.

In conclusion, Persta's continued success is underscored by its:

- (i) access to the high-quality conventional natural gas resource base located in Alberta, the energy province of Canada; and
- (ii) ability to maintain a low cost of production.

¹⁵ The companies listed here are oil & gas exploration and production companies operating in Alberta. Most of these companies are listed. The selection here covers a wide range of production costs from lowest to highest ranges in comparison to Persta.

¹⁶ Production Cost = Royalty + Operating Costs + Transportation + G&A Expenses + Interest Expense

¹⁷ 1MMBTU = 0.1543 Boe

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APPENDIX

This report uses Canadian Dollars as the base currency for all estimations and forecasts. The table below (Exhibit 26) provides the historical trends between Canadian Dollars and US Dollars from 2008 to 2016 for reference.

Historical Trends showing Canadian dollars against US dollars

Exhibit 26: Historical Trends between Canadian dollars and US Dollars, 2008–2016

<u>Year</u>	<u>C\$</u>	<u>US\$</u>
2008	1.00	0.944173
2009	1.00	0.880059
2010	1.00	0.970701
2011	1.00	1.011464
2012	1.00	1.000230
2013	1.00	0.971164
2014	1.00	0.905912
2015	1.00	0.782992
2016	1.00	0.755748

Source: Yearly average historical rate referred from usforex.com as seen on 28th November, 2016