

BRITISH COLUMBIA'S OIL AND NATURAL GAS INDUSTRY



THE RESOURCE

Responsible oil and natural gas development has been an economic cornerstone of British Columbia since the 1950s. The industry is a partner in generating economic growth for British Columbians. Ongoing collaboration between government and industry is necessary to ensure British Columbia is a global climate leader while creating well-paying quality jobs, advancing Indigenous reconciliation, and generating prosperity for all British Columbians through government services supported by resource development revenues.

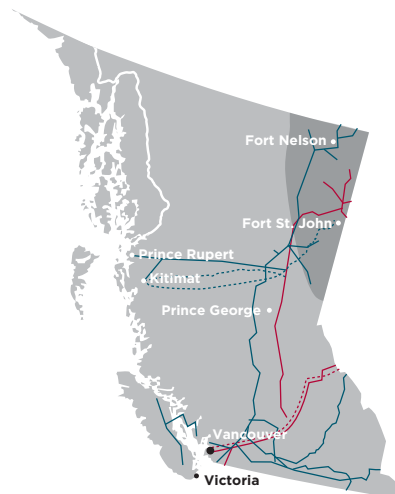
MEETING RISING GLOBAL DEMAND

The world needs more energy in all forms. According to the 2018 IEA World Energy Outlook, by 2040 global demand for natural gas will increase 36 per cent over 2018 levels, replacing coal as the world's second-largest energy source.

British Columbia currently produces one-third of Canada's natural gas and is well-positioned to begin shipping significant volumes of responsibly produced Canadian oil and natural gas to meet growing energy demand in emerging Asian economies.

B.C. has what it takes to be a global energy leader: an abundance of natural gas, a highly skilled workforce, a stringent regulatory system and a commitment to environmental performance.

- Existing natural gas
- - - Proposed natural gas
- Existing crude oil
- - - Approved crude oil pipeline expansion
- Natural gas and oil resource basins



12,000 JOBS

In B.C., the upstream oil and natural gas industry provides about **12,000 jobs**.

Source: PetroLMI, 2019

DID YOU KNOW?

In 2019/20 the B.C. government is expected to receive about **\$575 million in revenue** (land sales and royalties) from oil and natural gas activity.

Source: B.C. Budget and Fiscal Plan 2019/20 to 2021/22



PRODUCTION AND RESERVES

B.C. NATURAL GAS (2019)

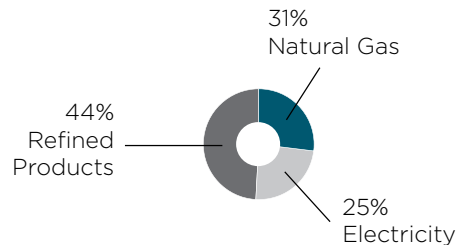
Production	1.8 trillion cubic feet (Tcf) per year (32 per cent of Canada's overall natural gas production) <i>Source: CAPP</i>
Producing Wells	10,255 <i>Source: BC Oil and Gas Commission (BCOGC)</i>
Remaining Marketable Potential	575 tcf—B.C.'s remaining natural gas represents enough to last more than 100 years at current Canadian demand levels <i>Source: CER</i>
Exports and Use	68% delivered to other regions of Canada 23% exported to the U.S. 10% consumed within B.C. <i>Source: Government of B.C.</i>

B.C. CRUDE OIL (2019)

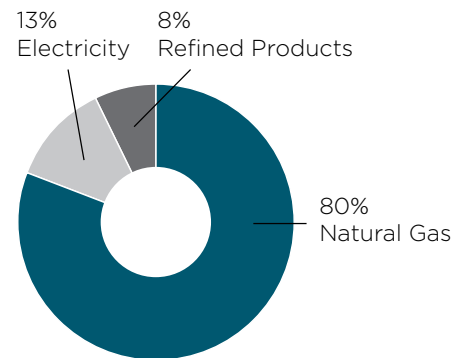
Production	16,000 barrels/day—about 2 per cent of Canada's total daily conventional oil production <i>Source: CAPP</i>
Reserves	114 million barrels <i>Source: BCOGC</i>
Oil Refining Capacity	67,000 barrels/day <i>Source: CAPP</i>

ENERGY CONSUMPTION AND PRODUCTION

B.C. ENERGY CONSUMPTION

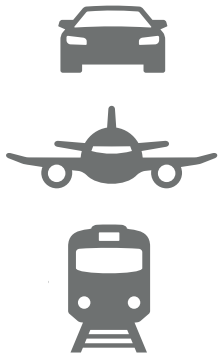


B.C. ENERGY PRODUCTION



ENERGY CONSUMPTION

About three-quarters of all energy consumed daily in B.C. is derived from fossil fuels. Transportation fuels represent the majority of consumption.



B.C. is a net exporter of energy and exports the majority of natural gas produced to the U.S. and the rest of Canada. B.C. also exports electricity, and imports refined fuel products.

Source: Statistics Canada, Report on Energy Supply and Demand of Energy in Canada, 2017

IMPACT OF OIL AND NATURAL GAS TO B.C.'S ECONOMY



The upstream conventional oil and natural gas industry provides B.C. with approximately **12,000 JOBS** and will contribute **\$5.1 BILLION IN GOVERNMENT REVENUES** through federal, provincial, and municipal taxes over the next 11 years.

Source: PetroLMI, 2019/CERI, 2019



Canada's conventional oil and natural gas industry will impact the B.C. economy with **\$122 BILLION IN ECONOMIC ACTIVITY** over the next 11 years.

Source: CERI, 2019

RESOURCE DEVELOPMENT, POLICIES AND REGULATIONS

The BC Oil and Gas Commission (BCOGC) is responsible for regulating all oil and natural gas activities, including exploration, development, transportation and decommissioning. The BCOGC was established as an independent Crown corporation in 1998. The commission enforces stringent, world-class regulations that ensure industry activities have minimal environmental impact, are safe, in the public interest and that Indigenous peoples are consulted.

British Columbia leads on policies to address climate change, reduce emissions of greenhouse gases and grow its economy through innovation. In addition to the broad-based carbon tax, industry has worked with government to create a strategy to reduce methane emissions from the existing upstream industry by 45 per cent from 2014 levels by 2025, and continues to seek programs and partnerships to develop and promote the electrification of upstream facilities in the future to help reach this goal.

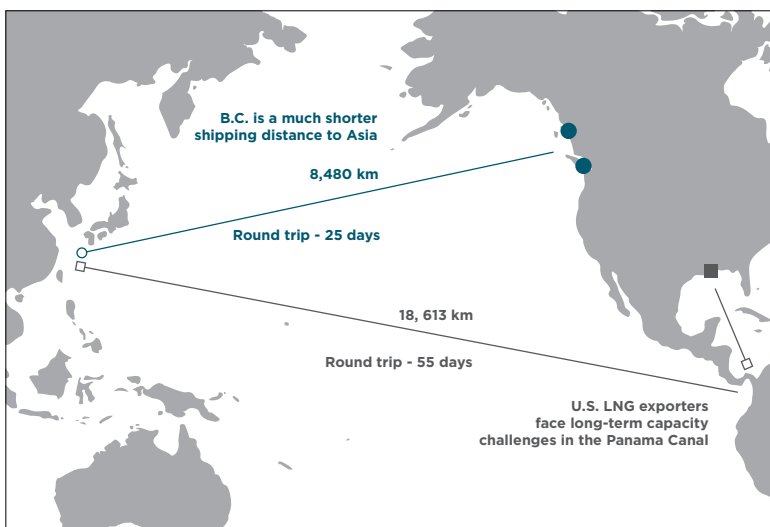
INCREASING COMPETITIVENESS THROUGH GOOD ENVIRONMENTAL POLICY DESIGN

A well-designed credible offset system can support competitiveness by providing an incentive for the development of project-based GHG reductions (electrification, methane abatement, energy efficiency, carbon capture and storage, and nature based solutions) across the economy. This will provide high quality, lower cost compliance options to regulated sectors and lower the societal economic cost of achieving GHG reductions. In order to be effective, offsets must be available for both conversion of existing, and new facilities and projects. This is in-line with global trends, and will help mitigate carbon leakage by ensuring British Columbia's resource developers can compete.

THE LIQUEFIED NATURAL GAS (LNG) OPPORTUNITY

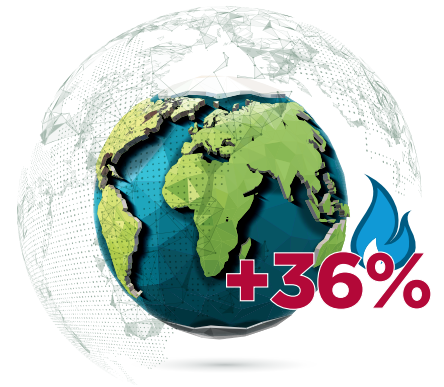
Establishing an LNG industry on Canada's West Coast would allow B.C. and Canada to export natural gas to new customers in rapidly developing markets in China, India and other parts of Asia. This has the potential to meet the need of these emerging economies for clean, reliable sources of energy, while providing jobs and long-term economic benefits to the people of B.C.

THE B.C. ADVANTAGE



GLOBAL DEMAND FOR NATURAL GAS

Global demand for natural gas is expected to increase 36 percent by 2040.



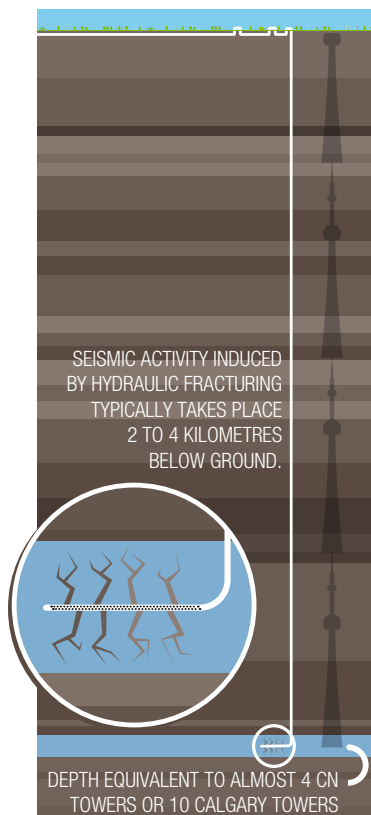
Source: IEA World Energy Outlook, 2019

LNG - HOW IT WORKS

-162° C

Natural gas cooled to -162 degrees Celsius becomes a liquid, which takes up 600 times less volume than the gas. This volume reduction makes it economical to transport LNG by carriers to markets overseas.

RESOURCE ROCK IS ISOLATED FROM GROUNDWATER



ENVIRONMENTAL RESPONSIBILITY

Like all British Columbians, the upstream oil and natural gas industry places high value on the environment. Industry is governed by B.C.'s robust laws and regulations, which are enforced by the BC Oil and Gas Commission (BCOGC) and others. And, operators are always seeking to improve their environmental performance through innovation, technology and research. Industry also works collaboratively with other industries such as forestry, government and stakeholders to understand, address and mitigate environmental impacts.

Some focus areas include:

WATER USE

Water used for natural gas development is protected by law and regulated by the BCOGC. The B.C. Water Sustainability Act requires operators to obtain water licences or withdrawal approvals, report water withdrawal volumes and monitor the water source to ensure their activities meet regulations.

HYDRAULIC FRACTURING AND INDUCED SEISMICITY

Hydraulic fracturing is a safe and proven production technique that's been used in Canada for 60 years. Hydraulic fracturing, combined with horizontal drilling, makes it economical to unlock B.C.'s natural gas resources that are buried deep underground. Industry is ruled by robust regulations and protocols to mitigate and manage any anomalous induced seismic activity that may be linked to natural gas development.

RESTORATION AND HABITAT IMPROVEMENT

Under a memorandum of understanding finalized in 2020 between the B.C. government and the oil and natural gas industry, funding has been committed to the B.C. Oil and Gas Research Innovation Society (OGRIS) for science and Indigenous knowledge-based restoration of legacy surface disturbances from historical oil and gas activities in Northeast British Columbia.

METHANE EMISSIONS RESEARCH COLLABORATIVE (MERC)

Canada's natural gas producers are guided by the methane management principles; to continuously identify economic opportunities to reduce methane emissions and support methane research and development of innovative and efficient technology and practices to monitor and reduce methane emissions. In British Columbia, MERC is a joint initiative between governments, the regulator and non-profits which is advancing research on methane emissions from oil and gas activity to support B.C.'s methane emission reduction targets.

INDIGENOUS ENGAGEMENT

Canada's oil and natural gas industry is committed to consultation and building respectful relationships with Indigenous Peoples. The Government of British Columbia's legislated commitment to implement the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) has created an opportunity to strengthen relationships with Indigenous peoples and build a stronger British Columbia. CAPP endorses UNDRIP as a framework for reconciliation in Canada. We support the implementation of its principles in a manner consistent with the Canadian Constitution and law.

In B.C., the government negotiated Consultation Process Agreements (CPAs) between the BCOGC and Treaty 8 First Nations where the oil and natural gas industry operates. These agreements, indirectly funded by the resource industry, ensure territories have the resources needed to consult and provide comment on regulatory approvals.



MEANINGFUL ENGAGEMENT CAN IMPROVE PROJECT PERFORMANCE, ASSIST EFFORTS TO ADDRESS SOCIAL IMPACTS AND ENSURE ECONOMIC BENEFITS ARE AVAILABLE TO COMMUNITIES.

CAPP COMMITMENT

Our industry recognizes it has a role in reconciliation, and believes natural resource development is linked to the broader reconciliation process. For many years member companies have proudly worked to build respectful and mutually beneficial relationships with Indigenous partners and communities through meaningful consultation, community investment and economic opportunities.

DID YOU KNOW?

- Nearly **90 PER CENT OF THE 32 FIRST NATIONS** in B.C. where proposed pipelines cross their traditional territories have indicated their support through one or more pipeline benefits agreements.

Source: Government of British Columbia

- **THE LIQUEFIED NATURAL GAS ENVIRONMENTAL STEWARDSHIP INITIATIVE** (LNG ESI) establishes collaboration among the provincial government, Aboriginal communities and the natural gas/LNG industry. The LNG ESI facilitates environmental stewardship associated with LNG development, such as ecosystem assessment and monitoring, restoration and enhancement, research and knowledge sharing. This initiative will generate credible, high-quality environmental information.

Source: B.C. Environmental Protection and Sustainability



THE RATE OF ABORIGINAL ENTREPRENEURS IN CANADA'S OIL AND NATURAL GAS INDUSTRY IS THREE TIMES HIGHER COMPARED TO THE REST OF CANADA.

Source: Canadian Council for

Aboriginal Business - A Snapshot of Aboriginal Entrepreneurs (2006)

LNG CANADA

In October 2018, with the support from all levels of government including local Indigenous communities, the \$40 billion LNG Canada export project was the first large-scale LNG facility in Canada to receive a positive Financial Investment Decision (FID) by its joint venture partners – Shell, PETRONAS, PetroChina, Mitsubishi Corporation and KOGAS. The first phase will include two processing units (trains) with a capacity of 14 million tonnes per annum (mtpa), with the option to expand up to an additional two trains.

- The project will be located in Kitimat, B.C. in the traditional territory of the Haisla Nation and includes the construction of the 670 km Coastal GasLink (CGL) pipeline from northeast B.C. near Dawson Creek to supply natural gas.
- These two projects represent reconciliation efforts and involved engagement and partnerships with several First Nations. The Haisla and 19 other First Nations are key partners on the projects both in employment creation and environmental management.
- Significant advantages of the facility include the short shipping distance to Asia compared to LNG plants located in the Gulf Coast region (about 50% shorter) and that the facility has been designed to achieve the lowest carbon intensity of any large-scale LNG plants due in part from its use of hydropower from B.C. Hydro.

These projects are two of several in the works. There are a number of other LNG projects under development in Canada which include Kitimat LNG, Woodfibre LNG and Tilbury LNG expansion, which are in advance or have completed the permitting stages.

Source: Ingcanada.ca

REDUCING CO₂ EMISSIONS

LNG used to displace coal in China would reduce CO₂ emissions by 60-90 million tonnes every year. This is equivalent to removing up to 80 per cent of all the cars on the road in Canada and shutting down 20 to 40 coal-fired power plants.

THE ENVIRONMENTAL ADVANTAGE

Canada has an opportunity to capitalize on the coming growth for LNG and reduce global GHG emissions by displacing coal-fired electricity generation and other primary uses of coal in China, India and Southeast Asia.

Estimates show by 2040, about 1,500 megatonnes of carbon dioxide equivalent (MtCO₂e) emissions could be eliminated every year if new power plants in China, India and Southeast Asia are fuelled by natural gas instead of coal. These reductions are contingent on approximately 375 megatonnes of LNG annually displacing coal electricity generation. This estimate was based upon a CAPP internal study using the Pace Global 2015 report for life cycle GHG intensities of both coal and LNG. Canadian GHG emissions intensity from LNG facilities is expected to be uniquely low, due to strong regulations and an opportunity to electrify the upstream. Reducing upstream combustion emissions via electrification, made possible by connecting to a lower-emissions electricity system, could reduce the upstream carbon intensity by approximately half.

Source: *Pace Global, 2015 and CAPP, 2019*



“As part of the \$40 billion LNG Canada project, we negotiated agreements that allowed us to protect our environment in a way that is based on our input, priorities, and needs. The agreements also gave us the ability to invest in programs we believe can help empower this generation of Haisla and those who follow us.”

Crystal Smith, chief councillor, Haisla Nation.

Source: *Business Vancouver*

For every LNG facility built in Canada, global emissions are reduced by **100 MtCO₂e** per year.

