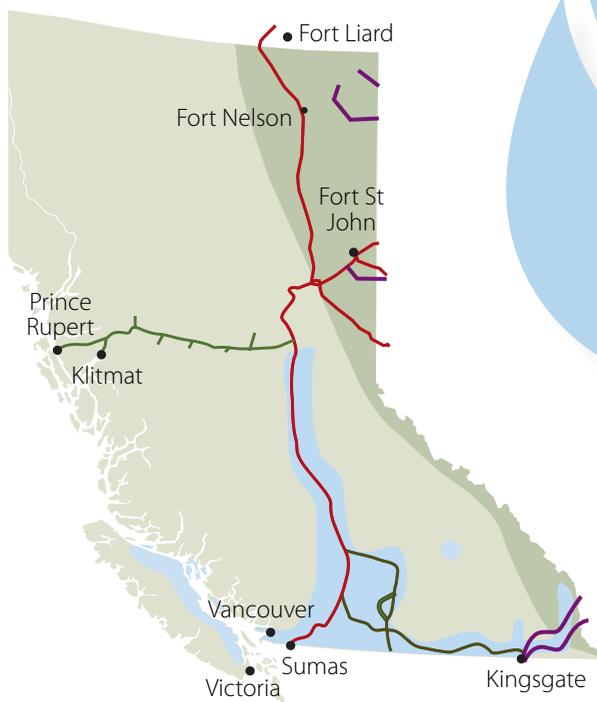


# Natural Gas Fact Sheet British Columbia



## B.C.'s Natural Gas System

### Legend

- Natural Gas Supply Basins
- FortisBC Service Regions
- FortisBC Pipelines
- TransCanada Pipelines
- Spectra Energy Pipelines
- Pacific Northern Gas

Natural gas is a fundamental fuel for British Columbia's economic and environmental success, and it will be long

into the foreseeable future: heating our

homes, fueling businesses, powering vehicles

and serving as a key component in many of

our most vital industrial processes. Read

on for an overview of natural gas' role

in our province, the key attributes

of this clean and abundant fuel and

opportunities available to increase

utilization of this domestically sourced

resource to help meet provincial energy

objectives.

## Overview

British Columbia (B.C.) relies on a number of gas distribution utilities, including NWGA Member FortisBC to supply natural gas throughout the province. Large transmission pipelines from several pipeline companies, including Spectra Energy and TransCanada, provide reliable gas transportation to and through our region from major supply basins in Northern B.C. and Alberta.

These utilities and pipeline companies are important B.C. employers: their joint workforces total more than 3,500 individuals serving nearly 1 million residential, commercial and industrial natural gas customers.



## More Supply = Lower Costs for B.C.'s Natural Gas Consumers

As the commodity cost of natural gas has decreased, due to new supply from shale, B.C. consumers have reaped the benefits. Since 2010, FortisBC's residential customers in the Lower Mainland have seen a decline of approximately 17 percent in their overall natural gas bills.

Natural gas is a key process fuel for some of B.C.'s largest and most vital industries, including:

- **Pulp and Paper Manufacturing:** 8,500 B.C. employees
- **Wood Product Manufacturing:** 32,000 B.C. employees
- **Food Processing:** 29,500 B.C. employees
- **Chemical Manufacturing:** 6,100 B.C. employees

Source: BCStats.gov, 2016

## Natural Gas Helps B.C. Farms Stay Healthy

Fertilizer used to grow crops is composed almost entirely of natural gas components, meaning the price of natural gas has a tremendous effect on B.C.'s agricultural output, responsible for \$1.2 billion in economic output in 2014.

## Natural Gas: A Growing Resource in B.C.

New deposits of natural gas in shale and tight gas formations are adding decades of potential supply to B.C.'s already robust natural gas production outlook. As shale deposits have been found and developed, natural gas investment in the province grew from \$1.8 billion in 2000 to \$7.1 billion in 2010, a number expected to grow by another 50% by 2020.

A 2016 review of the Montney Shale Formation, located in Eastern BC and Western Alberta, estimated it holds as much as 1,000 trillion cubic feet (Tcf) of recoverable natural gas, tripling estimates from just a few years ago. (NEB, 2017)

## Gas for Power Generation

The availability of natural gas as an electric generation fuel continues to be important in our province. Flexible gas-fired generation can provide peaking capability during times of high and/or sudden demand – an attribute that will likely become more important over time as provincial energy demand grows.

## Natural Gas is . . .

### Abundant & Domestic

- Of the 3.5 billion cubic feet per day (Bcf/d) of gas currently produced in B.C., 16% is consumed within B.C., 41% is exported to the U.S. through two pipeline systems and 43% is delivered to other regions of Canada by pipeline. (Source: BC Ministry of Energy & Mines)
- Western Canada (mainly BC and Alberta) is the primary natural gas producing region in the country, contributing nearly all of the natural gas production in Canada. The small amount of other Canadian natural gas production is supplied by Nova Scotia, Ontario, the Northwest Territories, New Brunswick and Yukon.

- Natural gas production supports more than 130,000 jobs in Canada, according to the Conference Board of Canada.

### Cleaner Burning

- Natural gas is efficient: 92% of the natural gas produced is delivered to customers as usable energy. (In contrast, 32% of the total energy used to generate electricity reaches consumers.)
- Natural gas produces 50% fewer GHG emissions than coal and up to 30% fewer than oil, along with significantly fewer particulate and (NOX) emissions. (2011, EIA).

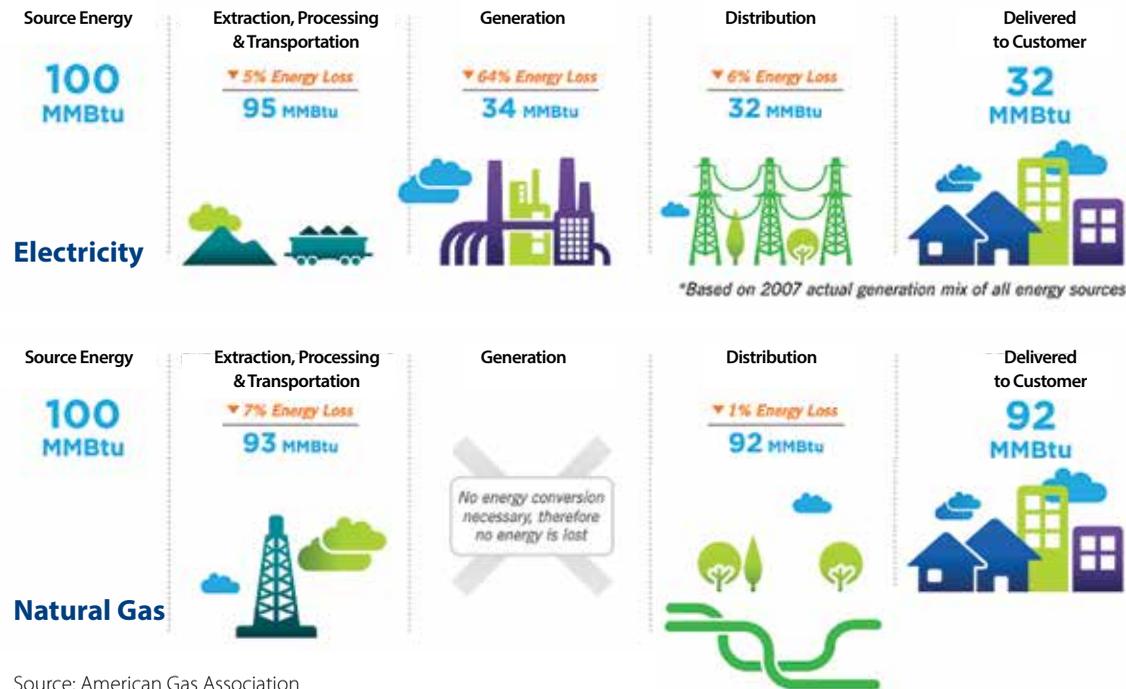
### Safe & Reliable

- Natural gas utilities and pipeline companies have strict protocols for testing and replacing, designed to ensure system integrity.

- According to the U.S. National Transportation Safety Board, pipelines are the safest form of energy transportation.
- FortisBC was nominated for the Canadian Gas Association's 2014 Public Safety Award for a public outreach and information campaign to create awareness around instances where underground natural gas infrastructure may intersect with municipal utilities.
- FortisBC participated in 11 emergency exercises in 2014, including a joint emergency exercise with Teck's Trail Operations that included local RCMP, fire department and municipal officials. Another exercise focused on safety at their Tilbury LNG facility and included employees from various roles within the company.

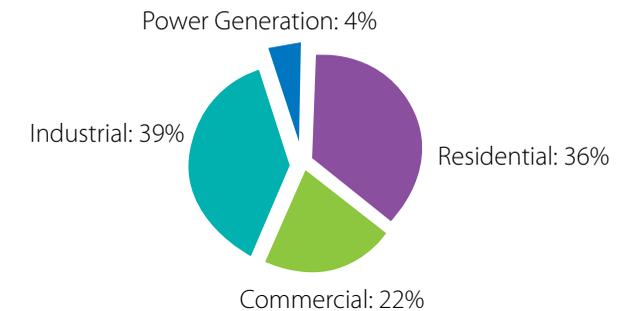
### Versatile

- Natural gas touches nearly every segment of Canadian life, as an important source of energy nationwide for heat, hot water and cooking in homes and businesses.
- Natural gas also has uses as a process and boiler fuel in the industrial sector, as a feedstock for the manufacture of fertilizers and petrochemical products, for power generation and has a growing role as a transportation fuel.



Source: American Gas Association

## 2016 B.C. Natgas Use by Sector



Source: Statistics Canada Table 129-0007 (converted from cubic metres)

# Opportunities

B.C.'s abundant natural gas supply outlook offers an incredible opportunity. Besides continuing to deliver energy value to homes and businesses, this resource is already fueling a renaissance in manufacturing, helping to create new jobs, and can provide a cleaner, less expensive fuel option for vehicles.

## Natural Gas Vehicles (NGVs)

- Compared to diesel-powered vehicles, NGVs can reduce greenhouse gas emissions by 17%. This number could be as high as 83% if renewable natural gas is introduced into the supply.
- As of 2015, FortisBC has awarded more than \$28 million to regional vehicle operators to help with the cost of converting fleets to natural gas. The program has put more than 400 NGVs on BC roads, with a GHG savings equivalent to removing 8,000 passenger vehicles from daily use.
- Automobile manufacturers offer a number of NGVs in Canada. New models of cars, trucks, forklifts and more will be rolled out in the coming years.
- Natural gas producers and utilities are working together to build refueling stations throughout the country.



**Waste haulers fill up with compressed natural gas at a slow fill station in FortisBC's service territory**

- The metro Vancouver region is currently home to more than 15 publicly available compressed natural gas (CNG) fueling stations.

## Combined Heat and Power (CHP)

A proven technology that can be more efficient and cleaner than the majority of current power generation technologies, CHP puts the excess heat created during gas-fired power generation to use, boosting efficiency while producing clean, affordable energy for businesses and factories. For example, installations at two Spectra compressor stations now use the waste heat (exhaust) from the gas turbines to produce electricity (about 5 MW each), which is sold to BC Hydro.

## Direct Use

When natural gas is utilized directly in residential or commercial applications, over 90% of its energy is applied to its intended use. For example, natural gas furnaces are up to 98% efficient, last longer than electric heat pumps and deliver heat up to 25 degrees warmer, for comfort more quickly. Many utilities offer incentives for installing new energy-efficient equipment and appliances.

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Natural gas in B.C. is produced and delivered safely, reliably and economically in accordance with some of the strictest requirements in the world. Greater recognition of the benefits of natural gas in federal and provincial regulation, legislation, building energy codes, appliance standards and energy policy initiatives will open new doors to increased energy efficiency and energy security for our province and its citizens.



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