

National Energy Board Direct Evidence:
The Regulation of Pipeline Tolls and Tariffs

British Columbia Utilities Commission: An Inquiry
into Gasoline and Diesel Prices in British Columbia

Project No. 1599007
June 27, 2019



Introduction

On 30 May 2019, the British Columbia Utilities Commission (BCUC) invited the National Energy Board (NEB) to intervene in the BCUC's inquiry into gasoline and diesel prices in British Columbia (B.C.). On 13 June 2019, Canada's Minister of Natural Resources requested that the NEB provide support to the BCUC's inquiry. This submission has been prepared by NEB staff, and constitutes the NEB's direct evidence to the BCUC's inquiry.

The NEB¹ is Canada's federal energy regulator, and its purpose is to promote safety and security, environmental protection, and efficient energy infrastructure and markets in the Canadian public interest. The NEB does this within the mandate set by Parliament in the regulation of pipelines, energy development, and trade.

The NEB regulates pipelines through their entire lifecycle. The NEB does not operate, or ship product on any pipeline. Most of the NEB's responsibilities are set out in the *National Energy Board Act* (NEB Act), *Canada Oil and Gas Operations Act*, and the *Canada Petroleum Resources Act*. The broad spectrum of activities that the NEB performs as a lifecycle regulator are reflected in four core responsibilities:

- i. Energy Adjudication;
- ii. Safety and Environmental Oversight;
- iii. Energy Information; and
- iv. Engagement.

As part of its Energy Information core responsibility, the NEB collects, monitors, analyzes, and publishes information on energy markets and supply, sources of energy, and the safety and security of pipelines and international power lines. The NEB plays an important role in conveying relevant and neutral energy information to Canadians.

The NEB operates on an arms-length basis from the Government of Canada, and does not create or debate federal energy policy (or provincial energy policy for that matter). The Parliament of Canada and elected officials have that mandate. The NEB only participates in the government's energy policy if it is asked to provide expert opinion on energy matters that are then used by the government in setting energy policy.

Accordingly, the NEB's Energy Information core responsibility also includes certain advisory functions; which the NEB may perform upon request. Pursuant to Part II of the NEB Act, the NEB may, at the request of the Minister of Natural Resources or any government department or ministry, whether federal, provincial, or territorial, provide advice about energy matters, sources of energy, and the safety and security of pipelines and international power lines. This submission to the BCUC falls under the NEB's advisory function.

¹Bill C-69, which repeals and replaces the *National Energy Board Act* (NEB Act) with the *Canadian Energy Regulator Act* (CER Act), received Royal Assent on 21 June 2019. The NEB will become the Canadian Energy Regulator (CER) when the CER Act comes into force. These changes will not impact the organization's participation in the BCUC's inquiry.

The remainder of the submission will explain the general principles guiding the NEB's regulation of pipeline tolls and tariffs. Notably, this does not predict future NEB decisions; future decisions will be made independently based on the facts in any given proceeding.

NEB Regulation of Pipeline Transportation Service and Capacity Allocation

The NEB Act establishes that the NEB may make orders with respect to all matters relating to traffic, tolls, or tariffs on international and interprovincial pipelines. The NEB regulates pipeline tolls and tariffs under its jurisdiction in accordance with the requirements of the NEB Act which specifies that tolls are just and reasonable and not unjustly discriminatory.

A pipeline company cannot charge a toll unless it is included in a tariff that has been filed with, or approved by, the NEB.² Tariffs may also contain the rules and requirements governing transportation service on pipelines.

Tariffs typically set out the technical specifications of the types of petroleum products that will be accepted onto the pipeline, as well as the rules by which shippers can nominate volumes to ship on the pipeline. In addition, tariffs often describe the procedures that pipelines will use to allocate available capacity to shippers, including in times of apportionment.³ Pipeline companies and shippers are required to follow the rules and regulations set out in tariffs. Ultimately, shippers decide what they ship, and these decisions are based on contractual and tariff terms, available capacity and market forces.

In regulating pipeline tariffs, the NEB applies the legislative requirements set out in the NEB Act. Two legislative requirements are of particular relevance to the allocation of capacity on oil pipelines. First, pursuant to subsection 71(1) of the NEB Act, oil pipeline companies must be common carriers that offer service to any party that wishes to ship on their pipelines. The NEB Act does not specify the criteria that the NEB must take into consideration in determining whether a pipeline complies with subsection 71(1). In the past, the NEB has often found that an oil pipeline complies with its common carrier requirements when it makes some capacity available to shippers for uncommitted (i.e., uncontracted) service. For those pipelines that are allowed to offer a portion of their capacity as committed (i.e., contracted) service, the NEB also requires that the contracting process occurs through a properly conducted open season.⁴ Second, pursuant to section 67 of the NEB Act, a company must not unjustly discriminate against any person or locality in tolls, service, or facilities. This means that all parties must have access to transportation without unjust discrimination, as long as they meet the requirements of the tariff. The NEB Act does not specify the criteria that the NEB must use in assessing whether tolls, service, or facilities are unjustly discriminatory. The NEB has flexibility in making this determination, and considers the specific circumstances of the pipeline.

² Pipeline companies regulated by the NEB are divided into two groups for financial regulatory purposes. Group 1 consists of 13 pipeline companies with extensive systems and several third-party shippers, including Enbridge Pipelines Inc., Trans Mountain Pipeline ULC, and TransCanada PipeLines Limited. Group 2 consists of all remaining pipeline companies. With the exception of Kinder Morgan Cochin ULC and Enbridge Pipelines (NW) Inc., all Group 1 companies require NEB approval of their tolls and tariffs.

³ Apportionment occurs when shippers demand more pipeline capacity than is available in any given month.

⁴ An open season is a process in which a pipeline company offers either existing or new pipeline capacity to the market and receives bids for that capacity from market participants.

Pipelines transporting crude oil and [refined petroleum products](#) out of western Canada are currently operating at, or very near, their full capacity. Many different shippers are competing for access to the limited available pipeline space, and therefore the allocation of pipeline capacity is an important issue for shippers and markets in general.

Supply of Gasoline and Diesel in British Columbia

In 2018, B.C. consumed approximately 232 thousand barrels per day (Mb/d) of refined petroleum products (RPPs), of which approximately 96 Mb/d was gasoline.^{5,6} B.C.'s RPP market is supplied by refineries within the province, as well as from Alberta and Washington State. Imports can also be sourced from other U.S. and global refineries.

Refined petroleum products can be transported into B.C. by the Trans Mountain pipeline, rail, barge, and truck. In 2018, the Trans Mountain pipeline supplied the B.C. market with around 28 Mb/d of RPPs.⁷ It also supplied the Parkland Refinery in Burnaby, the largest refinery in B.C., with around 50 Mb/d of crude oil,⁸ which it used to produce gasoline, diesel, and other refined products.⁹ The NEB understands that B.C.'s two refineries (Parkland in Burnaby and Husky Energy in Prince George) have a combined capacity of approximately 67 Mb/d.¹⁰

Transportation Service on the Trans Mountain Pipeline

The Trans Mountain pipeline, operated by Trans Mountain Pipeline ULC (Trans Mountain), transports a range of crude oils and RPPs from receipt points in Edmonton, Alberta, and Kamloops, B.C., to several different delivery locations. The pipeline can deliver to the Suncor Burrard Products Terminal and the Suncor Kamloops Marketing Terminals, the Westridge Marine Terminal, and the Parkland Refinery. The pipeline can also transport crude oil to the Puget Sound Pipeline, which serves four refineries in the State of Washington.¹¹

Capacity on the Trans Mountain pipeline varies depending on the proportion of heavy and light crude oil and RPPs that shippers choose to transport. When 20% of pipeline throughput is heavy crude oil, the capacity of the pipeline is approximately 300 Mb/d. Of the capacity, 54 Mb/d¹² has been contracted by shippers to the Westridge Marine Terminal, while the remaining capacity is available to uncommitted shippers. In recent years, all available capacity on the Trans Mountain pipeline has been utilized by

⁵ <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2510004401>

⁶ Domestic sales of diesel in B.C. must meet the confidentiality requirements of the Statistics Act.

⁷ <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>

⁸ <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>

⁹ <https://www.parkland.ca/en/our-businesses/supply>

¹⁰ <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmprdct/rprt/2018rfnrprprt/index-eng.html>

¹¹ <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>

¹² <http://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmprdct/rprt/2018wstrncndncrd/index-eng.html>

shippers each month.¹³ The average utilization rate on the pipeline was 98.5% in the first quarter of 2019.¹⁴

Trans Mountain's rules and regulations tariff¹⁵ sets out the rules by which shippers can access pipeline capacity. In order to use the pipeline, each shipper must submit a monthly nomination to Trans Mountain. This nomination specifies the type and volume of petroleum to be transported, as well as the receipt and delivery points. When the pipeline is under apportionment, as it is currently, each shipper must provide written verification that it has the capability to tender petroleum to satisfy its nomination, and the capability to remove such petroleum from the pipeline. Trans Mountain limits the volumes that can be verified for each shipper to the greater of 3% of the pipeline's available capacity or an historical average of past deliveries to the shipper's delivery destination.

Trans Mountain's tariff also specifies the procedures that Trans Mountain uses to allocate pipeline capacity among shippers. As discussed above, the NEB Act requires that oil pipelines must be common carriers and that a pipeline company must not unjustly discriminate against any person or locality in tolls, service, or facilities. Under the current tariff, no priority is given to shipments of heavy oil, light oil, or RPPs on the Trans Mountain pipeline.

The NEB requires Trans Mountain to file its tolls and tariffs, and any associated amendments, with the NEB for approval. While Trans Mountain develops the tariff rules and the NEB determines the appropriateness of those rules, neither party is involved in determining the specific makeup of the petroleum products that shippers seek to ship through the Trans Mountain pipeline each month. Shippers' nomination decisions ultimately determine the types and volumes of petroleum products that are transported.

The existing tariff rules related to Trans Mountain pipeline capacity allocation have been developed through a number of regulatory proceedings held by the NEB. In past regulatory proceedings, the NEB has considered particular rules and regulations in Trans Mountain's Petroleum Tariff and found those rules and regulations to comply with the company's common carrier requirements, as well as the requirement that it not unjustly discriminate against any person or locality.

Typically, changes to a tariff would be proposed in an application submitted by one or more persons (such as the pipeline company or its shippers) to the NEB. The NEB would then hold a transparent regulatory process, which could include a public hearing, to assess the merits of such changes. Tariff changes related to reallocating capacity on the Trans Mountain pipeline can have material impacts on shippers. As a result, proposed tariff changes have often resulted in contentious regulatory proceedings, given the capacity constraints on the system and the complexity of the allocation procedures.

¹³ Due to operational complexity, it is not possible for any pipeline to operate at 100% of capacity on a sustained basis.

¹⁴ <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>

¹⁵ <https://apps.neb-one.gc.ca/REGDOCS/File/Download/3612563>

Market Snapshot: Gasoline Pricing and the role of Trans Mountain pipeline in British Columbia's gasoline supply *(as accessed on 14 June, 2019)*

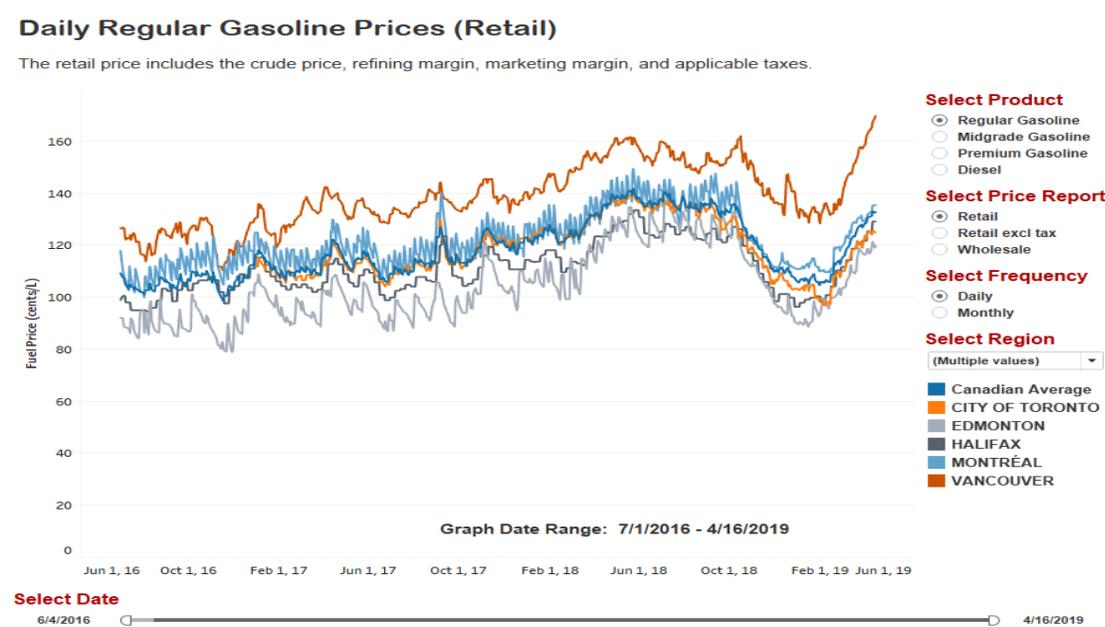
Gasoline pricing

Gasoline's retail price at the pump consists of the following major components. Changes in any of those components can affect gasoline prices in different regions:¹

- **Crude Oil Price:** The input cost of crude oil. Crude oil prices account for some of the price changes seen by consumers at the pump. According to [Natural Resource Canada](http://www2.nrcan.gc.ca/eneene/sources/pripri/prices_bycity_e.cfm) (Link: http://www2.nrcan.gc.ca/eneene/sources/pripri/prices_bycity_e.cfm), in April 2019, the crude oil portion of regular gasoline in Vancouver averaged 51.0 c/litre, approximately 10% below the Canadian average crude oil price.
- **Refining Margin:** The cost of processing the crude oil into gasoline. This can be calculated as the difference between the price of crude oil, and the wholesale price at which the refiner sells transportation fuels. This also includes the cost to transport crude oil to refineries. In April 2019, the refining margin portion of regular gasoline in Vancouver averaged 52.1 c/litre, roughly double the Canadian average refining margin.
- **Marketing Margin:** The costs associated with selling the gasoline to consumers at the local station. This can be calculated as the difference between the wholesale price, and the retail price of gasoline, without taxes. This also includes the cost to transport gasoline from refineries to gas stations. In April 2019, the marketing margin portion of regular gasoline in Vancouver averaged 10.5 c/litre, approximately 54% higher than the Canadian average marketing margin.
- **Taxes:** [The taxes paid to provincial, federal, and sometimes municipal governments.](https://www.nrcan.gc.ca/our-natural-resources/domestic-and-international-markets/transportation-fuel-prices/fuel-consumption-taxes-canada/18885) (Link: <https://www.nrcan.gc.ca/our-natural-resources/domestic-and-international-markets/transportation-fuel-prices/fuel-consumption-taxes-canada/18885>) These can be flat charges per litre, or percentages of price. In April 2019, the total tax portion of regular gasoline in Vancouver averaged 53.9 c/litre, approximately 21% higher than the Canadian average tax.

¹ In addition to these factors, [the switch from winter blend gasoline to summer blend](http://www.nrcan.gc.ca/nrg/ntgrtd/mrkt/snpsht/2018/05-04cndngslnprcs-eng.html) (Link: <http://www.nrcan.gc.ca/nrg/ntgrtd/mrkt/snpsht/2018/05-04cndngslnprcs-eng.html>) in April changes the composition of gasoline at the pump and effects the price. Refiners generally switch to summer gasoline by April 15 and generally switch back to winter gasoline blends around September 15.

Figure 1: Daily Canadian Regular Gasoline Prices



Daily Regular Gasoline Prices dashboard is interactive online only. (Link: <http://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2019/05-03gslnprcng-eng.html>)

Source: [Kent Group Ltd.](https://charting.kentgroupltd.com/) (Link: <https://charting.kentgroupltd.com/>)

The role of Trans Mountain pipeline in British Columbia's gasoline supply

British Columbia consumed 96 thousand barrels a day of gasoline in 2018. This gasoline came from a variety of sources, including refineries in the province, transfers from Alberta, and imports via barge from the United States.

The Trans Mountain pipeline plays two roles when it comes to supplying the British Columbia gasoline market. First, the pipeline directly supplies the British Columbia market with around 28 thousand barrels a day² of shipments of refined petroleum products³. Second, the Trans Mountain pipeline supplies the Parkland Refinery in Burnaby, the largest refinery in British Columbia, with around 50 thousand barrels per day of crude oil⁴ which it uses to produce gasoline and other refined products. Overall, the Trans Mountain pipeline plays an important role in supplying the British Columbia gasoline market.

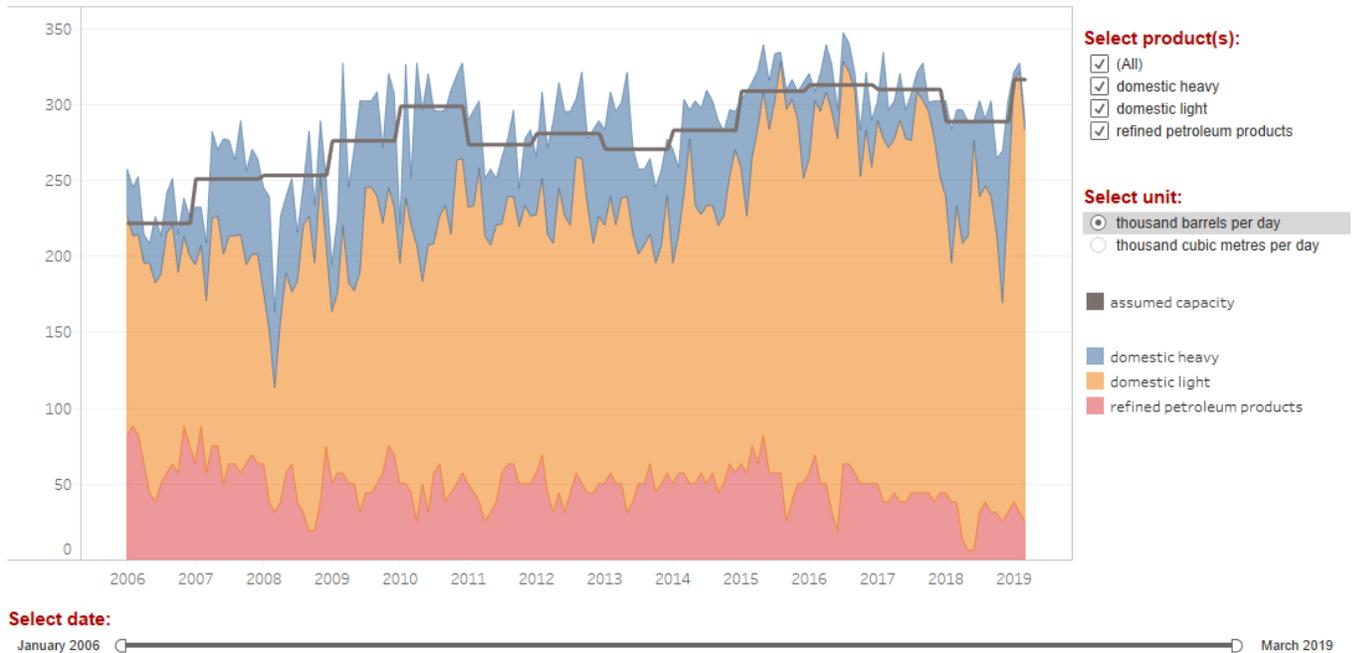
The existing Trans Mountain pipeline carries heavy and light crude oil as well as refined petroleum products in a single line from Edmonton to the Burnaby area, shipping roughly 70% light crude oil, 20% heavy crude oil, and 10% refined petroleum products. The pipeline has been operating at or near capacity since 2006.

² 2018 average

³ Refined petroleum products are products produced from refining crude oil. They include gasoline, diesel, and jet fuel.

⁴ 2018 average

Figure 2: Trans Mountain Pipeline throughput and capacity⁵



Trans Mountain Pipeline Throughput and Capacity dashboard is interactive online only. (Link: <http://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2019/05-03gslnprcng-eng.html>)

Source: NEB Pipeline Profiles: Trans Mountain. (Link: <http://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>)

Trans Mountain currently provides transportation service to a number of different shippers. The rules of this transportation service are governed by a [tariff](http://www.neb-one.gc.ca/bts/whwr/rspnsblt/trffctlltrff-eng.html) (Link: <http://www.neb-one.gc.ca/bts/whwr/rspnsblt/trffctlltrff-eng.html>) that is regulated by the NEB. [Trans Mountain's tariff](https://apps.neb-one.gc.ca/REGDOCS/File/DownloadFile/3612563) (Link: <https://apps.neb-one.gc.ca/REGDOCS/File/DownloadFile/3612563>) sets out the details of what can be shipped on the pipeline, as well as the rules by which shippers can nominate volumes to ship on the pipeline, and how the pipeline allocates available pipeline capacity to shippers.

The tariff cannot allow for unjust discrimination in favour of (or against) any one shipper or group of shippers. Specifically, the [NEB Act](https://laws-lois.justice.gc.ca/eng/acts/N-7/) (Link: <https://laws-lois.justice.gc.ca/eng/acts/N-7/>) requires that there be no [unjust discrimination](https://laws-lois.justice.gc.ca/eng/acts/N-7/page-20.html?txthl=discrimination+unjust#s-67) (Link: <https://laws-lois.justice.gc.ca/eng/acts/N-7/page-20.html?txthl=discrimination+unjust#s-67>) against any person or locality in tolls, service, or facilities. In practice, for the Trans Mountain pipeline, this means no priority is given to shipments of heavy crude oil, light crude oil, or refined petroleum products.

⁵ The physical capacity of a pipeline is based on many factors such as the products being carried, direction of flow, pipeline pumping capacity, and maintenance work or other pressure restrictions. The actual physical capacity of the pipeline may, at times, be higher than the assumed operational capacity.

Ultimately, shippers decide what they ship, and these decisions are based on contractual and tariff terms, available capacity and market forces.

Pipeline Profiles: Trans Mountain

(As accessed 14 June 2019)

Pipeline system and key points

Updated September 2018

The Trans Mountain Pipeline transports crude oil and refined petroleum products from Edmonton, Alberta to refineries and terminals in British Columbia and Washington State. Crude oil is also shipped to offshore markets in Asia and the U.S. west coast via the Westridge Marine Terminal in Burnaby, British Columbia.

Trans Mountain started operations in 1953 and is unique among the major pipelines out of the Western Canadian Sedimentary Basin in that it ships the full spectrum of oils (from refined petroleum products to heavy crude oil) in a single line.



The Trans Mountain Pipeline has oil receipt points at Edmonton, Alberta and Kamloops, B.C. At the Sumas delivery point, the Trans Mountain Pipeline connects with the Puget Sound Pipeline, owned by Trans Mountain Pipeline (Puget Sound) LLC, which delivers oil to four refineries on the west coast of Washington State.

At the Burnaby Terminal, connecting pipelines enable deliveries of crude oil and refined petroleum products to Parkland's Burnaby Refinery and to Suncor's Burrard refined products marketing terminal.

The Westridge Marine Terminal is located approximately three kilometres from the Burnaby Terminal. It facilitates marine exports from the Trans Mountain Pipeline to coastal refineries, such as those on the U.S. West Coast or in Asia.

Official Board documents related to the construction, operation and maintenance of the Trans Mountain Pipeline can be found here: Trans Mountain pipeline regulatory documents [Folder [454627](#)]. (Link: <https://apps.neb-one.gc.ca/REGDOCS/Item/View/454627>)

You can see the Trans Mountain Pipeline and all NEB-regulated pipelines on the Board's [Interactive Pipeline Map](#). (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/sft/dshbrd/mp/index-eng.html>). The map shows more detailed location information, the products carried by each pipeline, the operating status and more.

Condition Compliance

Updated September 2018

Every pipeline company in Canada must meet federal, provincial or territorial, and local requirements. This includes Acts, Regulations, rules, bylaws, and zoning restrictions. Pipelines are also bound by technical, safety, and environmental standards along with company rules, protocols and management systems. In addition to these requirements, the Board may add [conditions](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/cmplnc/cndtns/index-eng.html>) to regulatory instruments that each company must meet. Condition compliance is monitored by the Board and [enforcement](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/cmplnc/index-eng.html>) action is taken when required. For a detailed list of conditions that Trans Mountain must meet, and their status, please see the [condition compliance table](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/cmplnc/cndtns/cndtncmplnclst/index-eng.html>) and search for "Trans Mountain Pipeline Inc."

Safety Performance

Updated September 2018

The Board holds the companies it regulates accountable to protect the [safety](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/sft/index-eng.html>) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/nvrnmnt/index-eng.html>). As part of this accountability, companies must report events such as incidents and unauthorized activities to the Board. For a summary of pipeline incidents and unauthorized activities on the Trans Mountain Pipeline since 2008, visit the [Safety performance dashboard](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/sft/dshbrd/dshbrd-eng.html>) and select "Trans Mountain Pipeline Inc."

Emergency Management

Updated September 2018

The NEB checks to make sure companies are keeping pipelines safe by doing [inspections](#) (Link: <https://apps.neb-one.gc.ca/cmplnc/Home/Index?lang=eng>), in-depth safety [audits](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/cmplnc/rprts/dt/index-eng.html>), and other activities. Yet, even with these precautions, an emergency could still happen. Sound [emergency management](#) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/mrgnc/index-eng.html>) practices improve public safety and environmental protection outcomes, and provide for more effective emergency response.

The NEB holds its regulated companies responsible for anticipating, preventing, mitigating, and managing incidents of any size or duration. Each company must have an emergency management

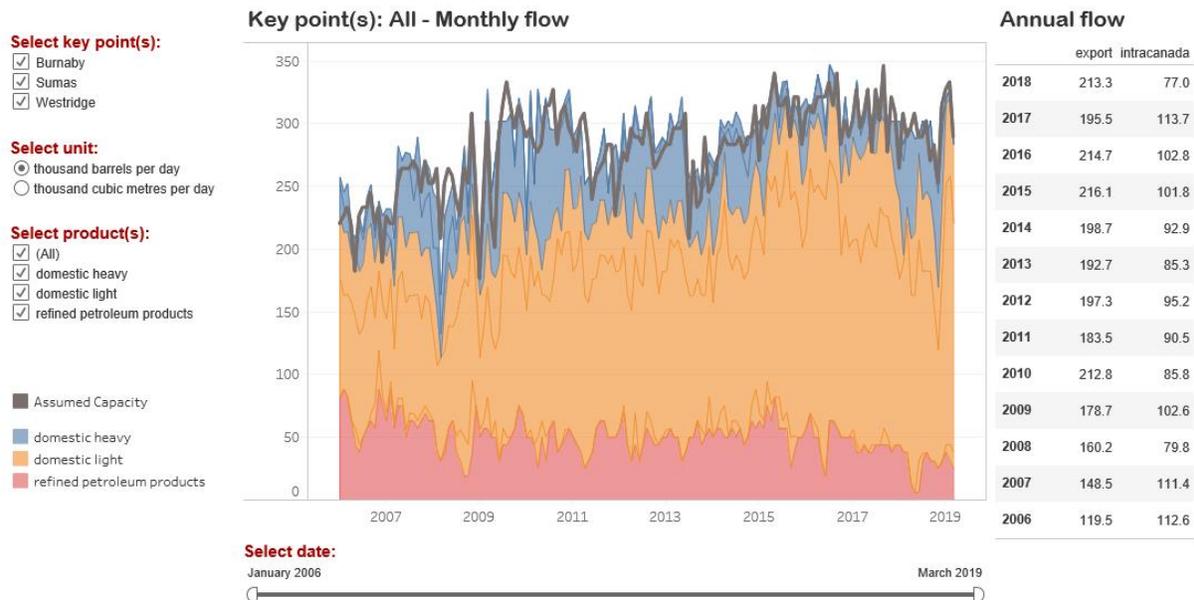
program that includes detailed emergency procedures manuals to guide its response in an emergency situation. We oversee the emergency management program of a regulated company’s projects until they cease to operate.

The Board [requires companies to publish](https://www.neb-one.gc.ca/sftnvrnmnt/mrgnc/mrgncmngmntprgrmrqmnts/index-eng.html) (Link: <https://www.neb-one.gc.ca/sftnvrnmnt/mrgnc/mrgncmngmntprgrmrqmnts/index-eng.html>) information on their emergency management program and their emergency procedures manuals on their websites so Canadians can access emergency management information. To view Trans Mountain’s [Emergency Response Plan](https://www.transmountain.com/emergency-response-plans), go to its [Emergency Response Plans website](https://www.transmountain.com/emergency-response-plans) (Link: <https://www.transmountain.com/emergency-response-plans>).

Throughput and capacity¹

Updated quarterly – Data online might be different than when this document was originally filed

Trans Mountain Pipeline ULC - Trans Mountain Pipeline



[Trans Mountain traffic dashboard is interactive online only](https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>)

Open data can be freely used and shared by anyone for any purpose. The data for these graphs are available. (Link: <https://open.canada.ca/data/en/dataset/dc343c43-a592-4a27-8ee7-c77df56afb34>)

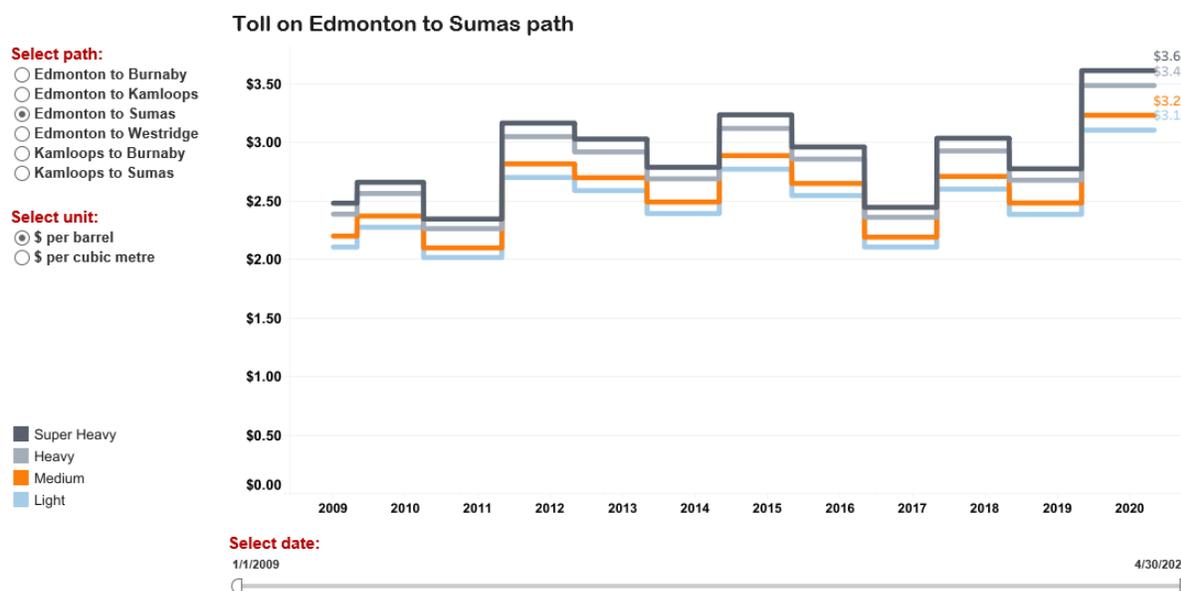
¹ The physical capacity of a pipeline is based on many factors such as the products being carried, direction of flow, pipeline pumping capacity, and maintenance work or other pressure restrictions. The actual physical capacity of the pipeline may, at times, be higher than the assumed operational capacity stated here.

Tolls

Updated January 2018 – Data online might be different than when this document was originally filed

A toll is the price charged by a pipeline company for transportation and other services. Tolls allow pipeline companies to safely operate and maintain pipelines. Tolls also provide funds for companies to recover capital (the money used to build the pipeline), pay debts, and provide a return to investors. The interactive graph below shows the tolls for key paths on the pipeline.

Trans Mountain Pipeline tolls on selected paths



Trans Mountain toll dashboard is interactive online only (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>)

Trans Mountain currently operates under a three-year Incentive Toll Settlement (2016-2018 ITS). Tolls have fluctuated as over or under-recoveries of revenues are transferred to future years. Tolls are based on the quality of crude oil, the volumes and the specific pipeline path. Since January 2015, consideration of a shipper's previous delivery volumes has helped determine fair and equitable allocation of Trans Mountain system capacity.

Abandonment funding

Updated May 2018

The Board requires all pipelines to set aside funds to safely cease operation of a pipeline at the end of its useful life. In 2016, Trans Mountain estimated it would cost \$368 million to do this. These funds will be collected over 40 years and are being set aside in a trust. Official Board documents related to abandonment funding can be found here, sorted by year and by company: [abandonment funding documents \[Folder: 3300366\]](https://apps.neb-one.gc.ca/REGDOCS/Item/View/3300366) (Link: <https://apps.neb-one.gc.ca/REGDOCS/Item/View/3300366>)

Financial resource requirements

Updated February 2018

The *National Energy Board Act* requires major oil pipeline companies to set aside \$1 billion to pay for the costs of any incident that occurs, such as a spill. See sections [48.11 to 48.17 of the Act](#) (Link: <https://laws-lois.justice.gc.ca/eng/acts/N-7/page-9.html#h-35>) for more information. Trans Mountain Pipeline ULC demonstrated that it has financial resources in excess of \$1 billion dollars. Official Board documents related to the Trans Mountain's financial resources can be found here: [Trans Mountain financial resources documents](#). (Link: <https://apps.neb-one.gc.ca/REGDOCS/Item/View/2949657>)

Pipeline financial information

Updated February 2018

Pipeline companies report important financial information to the Board quarterly or annually. A strong financial position enables companies to maintain their pipeline systems, attract capital to build new infrastructure, and meet the market's evolving needs. The data in this table comes from [Trans Mountain's incentive toll settlement filings](#) (Link: <https://apps.neb-one.gc.ca/REGDOCS/Item/View/552980>) with the Board.

Table 1: Trans Mountain Pipeline financial data

	2011	2012	2013	2014	2015	2016	2017
Revenue requirement (millions)	\$270	\$295	\$275	\$292	\$293	\$270	\$287*
Rate base [average plant in service] (millions)	\$1 019	\$1 002	\$992	\$990	\$995	\$991	\$989*
Deemed equity ratio	45%	45%	45%	45%	45%	45%	45%
Return on equity (achieved)	10.5%	9.82%	9.5%	8.06%	8.5%	9.5%	9.5%*

*Estimated

Corporate financial information

Updated February 2018

The Trans Mountain Pipeline is owned by Trans Mountain Pipeline L.P., an indirect wholly owned subsidiary of Kinder Morgan Canada Limited Partnership (KMCLP). KMCLP is jointly owned by Kinder Morgan Inc. and Kinder Morgan Canada Limited. In 2017, Kinder Morgan Canada held an Initial Public Offering (IPO). Following the IPO, Kinder Morgan Inc. retained a 70% ownership of Kinder Morgan Canada. The Trans Mountain Pipeline represents less than 2% of Kinder Morgan Inc.'s earnings.

Kinder Morgan Cochin ULC, another indirect wholly owned subsidiary of Kinder Morgan Canada Limited, was recently issued a rating of BBB (high) by DBRS and BBB by S&P following closing of \$5.5 billion in secured credit facilities to fund, in part, the Trans Mountain Expansion Project. The credit facilities are guaranteed by Kinder Morgan Canada Limited, Kinder Morgan Canada Limited Partnership and other entities comprising KML's businesses.

Kinder Morgan Inc.'s financial ratios continue to be stable and credit ratings are investment grade. Credit ratings and financial ratios provide an idea of the financial strength of a company, including its ability to attract capital to build new infrastructure and meet financial obligations. The credit ratings

below are expert opinions of how likely the debt issuer is to live up to its obligations. The financial ratios provided below were calculated by DBRS.

Table 2: Kinder Morgan Inc. Financial Ratios and credit ratings

	2012	2013	2014	2015	2016	2017
Interest and fixed-charges coverage ratio	2.35	2.87	3.04	2.45	2.36	n/a
Cash Flow-to-Total Debt Ratio	9.1%	12.2%	10.8%	11.2%	12.2%	n/a
DBRS credit rating	BB	BB	BB	BBB(low)	BBB(low)	BBB(low)

Financial regulatory audits

Updated February 2018

The Board audits pipeline companies to confirm compliance with the *National Energy Board Act*, regulations, Board orders and Board decisions. Financial regulatory audits focus on toll and tariff matters such as detecting cross-subsidies. Trans Mountain's last audit was completed in February 2008. Official Board documents related to Trans Mountain's financial regulatory audits can be found [here](https://apps.neb-one.gc.ca/REGDOCS/Item/View/571482) (Link: <https://apps.neb-one.gc.ca/REGDOCS/Item/View/571482>).

Where does Canada's gasoline come from? *(As accessed 14 June 2019)*

Executive Summary

Canada has vast gasoline production and transportation infrastructure that ensures flexible and reliable supply for Canadians. Canada's gasoline supply chain begins with oil extraction and processing. Most of Canada's domestic oil production happens in the [Western Canada Sedimentary Basin](https://www.neb-one.gc.ca/nrg/tl/glssr-eng.html#W) (Link: <https://www.neb-one.gc.ca/nrg/tl/glssr-eng.html#W>) (WCSB). Refineries located in, or near, the WCSB refine local domestic oil. In eastern Canada, refineries process less domestic crude and more imports. This is due to higher transportation costs, limited pipeline access to western Canadian domestic oil, and the inability of refineries to process WCSB heavy crude oil.

There are 14 gasoline-producing refineries in Canada (17 refineries in total): 6 in western Canada, 4 in Ontario, 2 in Quebec, and 2 in the Atlantic Provinces. Although production varies by refinery, gasoline comprises the largest portion of refinery output [at 36%, on average](https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/08-02prdtcsmdfrml-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/08-02prdtcsmdfrml-eng.html>). Refineries also produce a number of other refined petroleum products (RPPs) including diesel and jet fuel.

Gasoline and other RPPs are transported from refineries to storage terminals near cities and towns. Gasoline markets are highly localized, and production in each region tends to stay local. A web of pipelines, railways, shipping routes, and highways is used to distribute gasoline from refineries to terminals between Vancouver Island and Thunder Bay. Similar webs of infrastructure distribute gasoline from refineries in Ontario to terminals between Sarnia and Ottawa; from refineries in Quebec to terminals between Ottawa and the Atlantic coast; and from refineries in New Brunswick and Newfoundland to terminals around the Atlantic Provinces.

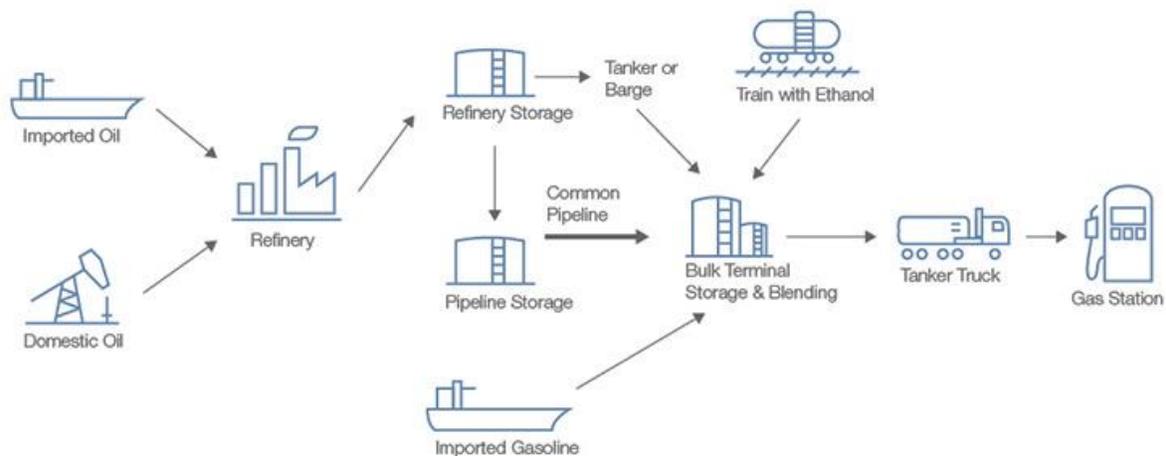
Terminals serve as receipt and distribution points for domestic and imported gasoline, and decide wholesale pricing for local markets. Due to the relatively small volumes demanded by individual and dispersed facilities, transportation of gasoline from terminals is done almost exclusively by truck.

After gasoline is purchased at local gas stations and bulk storage plants, it powers personal and freight transport vehicles, and other industrial machinery. In 2018, domestic sales of motor gasoline totaled 46 billion litres, and represented 42% of total [domestic RPP sales](http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1340004) (Link: <http://www5.statcan.gc.ca/cansim/a05?lang=eng&id=1340004>).

Gasoline Supply Chain Overview

In 2018, Canadians consumed [46 billion litres](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2510004401) (Link: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2510004401>) of gasoline. The first step in meeting this demand is the extraction of crude oil from domestic and international production areas. Oil is transported to a refinery where it is produced into a number of chemically distinct products, including gasoline. From refineries, gasoline is transported to terminals near population centres. There, it is stored and blended with brand-specific performance and efficiency-enhancing additives, as well as ethanol according to government regulations. From terminals, gasoline is transported by truck to thousands of gas stations across the country.

Figure 1. Gasoline Supply Chain Overview



Source: Energy Information Administration

The vast majority of this process occurs in Canada and by Canadian companies; however, in 2018, imports of oil represented 46% of Canada's [refinery inputs](https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2510006301) (Link: <https://www150.statcan.gc.ca/t1/tbl1/en/cv.action?pid=2510006301>), and [imports of refined gasoline](https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2510004401) (Link: <https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=2510004401>) amounted to 7.9 billion litres.

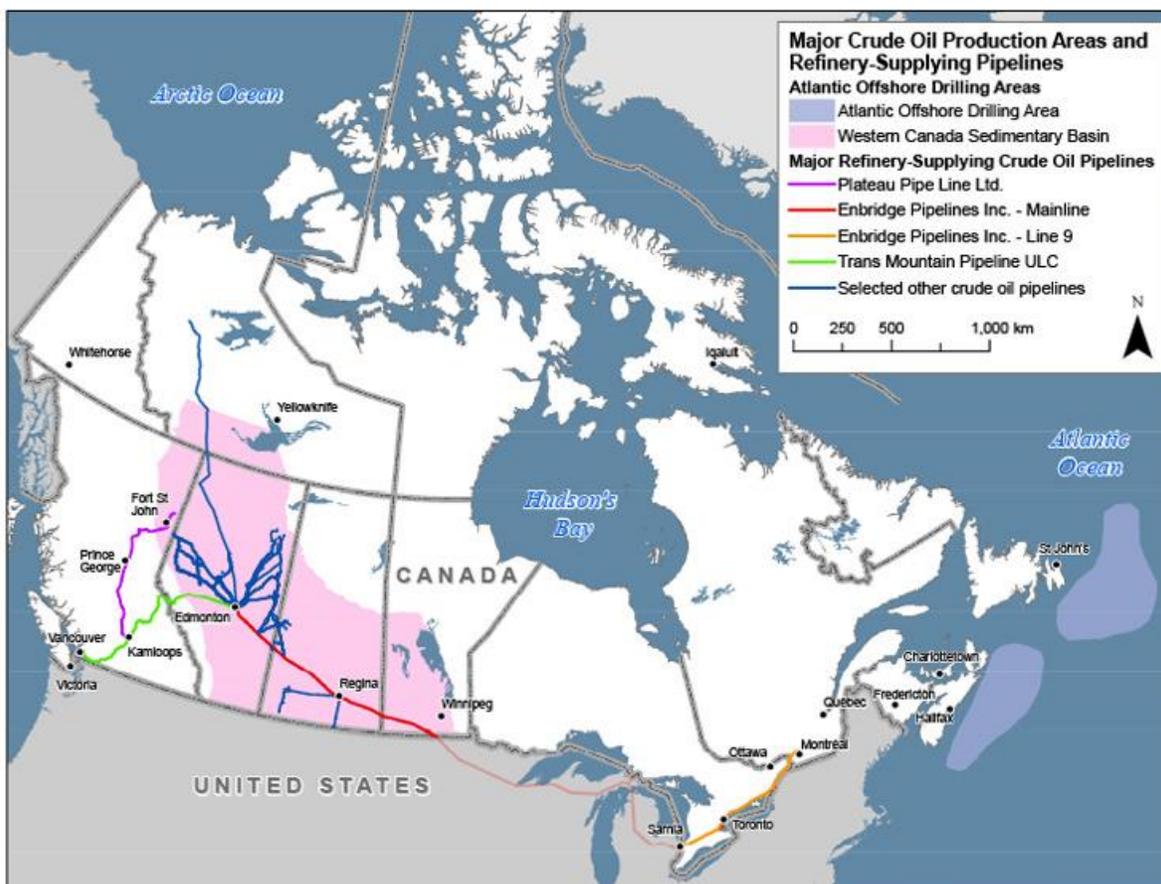
In many cases, a single company will control multiple aspects of its supply chain, managing oil production and refining operations, as well as owning, operating, or contracting with distribution terminals and retail stations. This is called *vertical integration*. Many of Canada's major refiners – including Imperial Oil, Shell Canada, Suncor Energy, and Husky – are vertically integrated. Some refiners such as Irving Oil, Federated Co-op and Valero do not have crude oil production, but operate distribution terminals and retail stations.

Domestic Oil Production and Imports

- All gasoline comes from crude oil. In Canada, most domestic oil production happens in the [WCSB](https://www.neb-one.gc.ca/nrg/tl/glsr-eng.html#w) (Link: <https://www.neb-one.gc.ca/nrg/tl/glsr-eng.html#w>), which covers almost all of Alberta, as well as parts of Saskatchewan, Manitoba, British Columbia, Yukon, and Northwest Territories. Outside of the WCSB, production off the coast of Newfoundland and Labrador contributes to [approximately 5%](https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/stt/stmtdprdctn-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/stt/stmtdprdctn-eng.html>) of Canada's domestic production. Crude oil imports occur primarily in Ontario, Quebec, and the Atlantic Provinces, and comprised 46% of Canada's total refinery inputs in 2018.

Logistical and economic factors determine where refineries source their crude oil, and the complexity of each refinery dictates which types of oil it can process. [Refineries in western Canada](https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html>) process exclusively domestic oil due to their proximity to inexpensive WCSB production. These refineries process more oil sands synthetic crude and bitumen than refineries elsewhere in Canada. The westbound [Trans Mountain](https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>) and southbound Plateau pipelines supply crude from the WCSB to refineries in Burnaby and Prince George, respectively.

Figure 2. Major Crude Oil Production Areas and Refinery-Supplying Pipelines



Source: National Energy Board

[Refineries](https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html#fg14) (Link: <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html#fg14>) in Ontario process a more diverse crude slate, supplementing domestic WCSB crude with United States (U.S.) imports, primarily from North Dakota and Texas. These refineries process much more conventional light and medium crude than in western Canada, and less oil sands synthetic crude and bitumen. Domestic crude is transported from the WCSB to refineries near Sarnia and Nanticoke via the [Enbridge Mainline](https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/nbrdgmnl-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/nbrdgmnl-eng.html>) and [Line 9](https://www.enbridge.com/ECRAI.aspx) (Link: <https://www.enbridge.com/ECRAI.aspx>) pipelines.

Along Line 9 from Ontario to Quebec, transportation from the WCSB becomes more expensive, and imports of crude oil by marine vessel are more attractive for refiners. Despite having slightly less refining capacity than Ontario, Quebec imported around three times more oil than Ontario in 2018. These imports, mostly from the U.S. and Algeria, supplement domestic supply to Quebec refineries via Line 9. [Quebec's refineries](https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html#fg16) (Link: <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html#fg16>) process almost entirely light, medium, and synthetic crude.

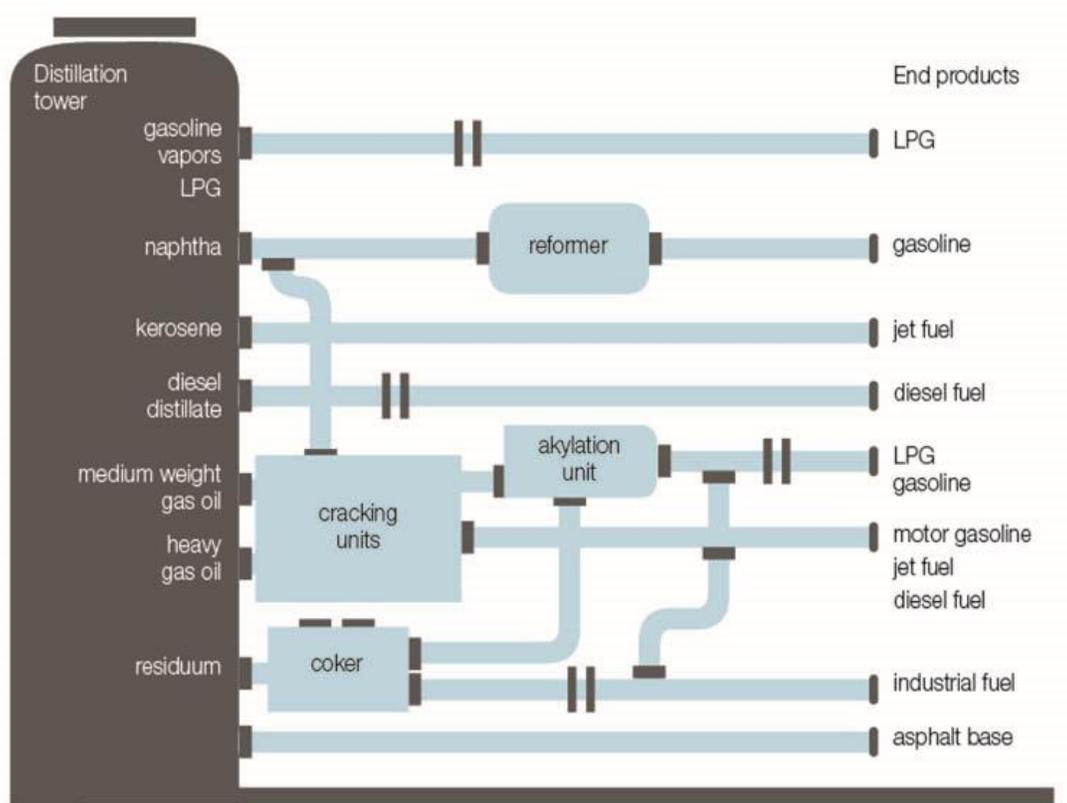
Oil pipeline infrastructure currently extends as far as Quebec, leaving the Atlantic Provinces largely without cost-effective access to domestic western Canadian crude¹. As a result, [Canada's easternmost refineries](https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html#fg17) (Link: <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/rfnrsbrgn-eng.html#fg17>) process mostly imported crude from the U.S., the Middle East, Africa, and Europe, as well as relatively small volumes of domestic offshore production.

Refining

[Complex refining processes](https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/whtsrfnr-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/sttstc/crdlndptrlmpdct/rprt/2018rfnryrprt/whtsrfnr-eng.html>) break down the crude oil by separating light and heavy hydrocarbons. This results in a number of chemically distinct RPPs such as gasoline, diesel, jet fuel, and other fuels. Gasoline accounts for the largest portion of [RPP production at Canadian refineries](https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/08-02prdcsmdfml-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/08-02prdcsmdfml-eng.html>) at 36%, followed by diesel and middle distillates (such as light fuel oil) at 33%. Despite comprising only slightly more than a third of total refinery production, gasoline has the greatest impact on the daily lives of most Canadians.

¹ New Brunswick sources some of their supply from the WCSB by rail.

Figure 3. Simplified Illustration of a Petroleum Refinery



Source: Energy Information Administration

Canada has 17 refineries (Link: <https://www.northern.gc.ca/nrg/sttstc/crdlndptrlmprodct/rprt/2018rfnryrprt/cndsrfnrs-eng.html>) in operation, with 14 refineries producing gasoline². Generally, refineries are located on major waterways, near major cities, or near crude oil production. For example, all Alberta refineries are located in the heart of the WCSB, where they source their crude oil. Similarly, all Ontario refineries are located in the south of the province on major waterways or near major cities where demand for their refined products is highest. Refineries in Quebec and the Atlantic Provinces are located on major waterways that allow them to source their oil by marine vessel from overseas.

In general, refineries and their domestic markets tend to be highly localized³. Refineries in western Canada supply gasoline to western Canadian markets, from Vancouver Island to northwestern Ontario, as well as to Canada's northern territories. Ontario refineries supply Ontario as far east as Ottawa. The Ontario market also receives RPPs from refineries in Quebec, although the main markets for Quebec refineries are east along the St Lawrence River, including Montreal and Quebec City. Refineries in New

² The Moose Jaw (Saskatchewan), Lloydminster (Alberta), and Sturgeon (Alberta) refineries do not produce gasoline.

³ Although some refineries also serve export markets, the portion that stays in Canada is generally consumed locally.

Brunswick and Newfoundland and Labrador supply the Maritime Provinces, and occasionally Nunavut.

Figure 4. Canadian Refineries and Capacity



Map produced by the NEB, July 2018. The map is a graphical representation intended for general informational purposes only

Source: Canadian Association of Petroleum Producers (CAPP)

Transportation, Storage, and Retail

Gasoline is transported from the refinery to primary storage tanks, which are located at or near the refinery. From there, gasoline is transported to distribution terminals near major markets. Terminals are strategically located near gasoline demand centers across Canada. They function like batteries that can be drawn on by local retail stations and bulk storage plants, which in turn supply industry and the public. Many major markets for gasoline, including Vancouver, Calgary, Saskatoon, Winnipeg, southern Ontario, and Montreal, connect directly to refineries by pipeline. Along Canada's coasts, as well as in the Great Lakes and St. Lawrence regions, many terminals can be supplied by barge. Inland, rail shipments supply major terminals.

At terminals, retailers blend their gasoline with proprietary blends of performance and efficiency-enhancing additives, as well as with [ethanol](https://www.nrcan.gc.ca/energy/efficiency/energy-efficiency-transportation-and-alternative-fuels/alternative-fuels/biofuels/ethanol/3493) (Link: <https://www.nrcan.gc.ca/energy/efficiency/energy-efficiency-transportation-and-alternative-fuels/alternative-fuels/biofuels/ethanol/3493>), according to federal and provincial renewable fuel requirements. As regional distribution centres, terminals are used as reference points for [pricing at gasoline retail stations](https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/09-02whgslnprcsdfr-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2017/09-02whgslnprcsdfr-eng.html>). Many terminal operators, including [Petro-Canada](https://www.petro-canada.ca/en/business/rack-prices) (Link: <https://www.petro-canada.ca/en/business/rack-prices>), [Shell Canada](https://www.shell.ca/en-ca/business-customers/app-rack-pricing.html) (Link: <https://www.shell.ca/en-ca/business-customers/app-rack-pricing.html>), and [Valero](https://www.energievalero.ca/en-ca/CommercialSales/Loadingrackprice) (Link: <https://www.energievalero.ca/en-ca/CommercialSales/Loadingrackprice>), post their wholesale, or “rack”, prices publicly. Rack prices factor in costs incurred throughout the supply chain, including the price of crude oil, refining margins, and costs of transportation to the terminal, including tolls on gasoline-carrying pipelines. Aside from a relatively small marketing margin applied by the retailer, the entire cost of production (including profit margins) is included in the rack price. Government taxes applied at the pump comprise most of the difference between rack prices and [pump prices](https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2018/05-04cndngslnprcs-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/mrkt/snpsht/2018/05-04cndngslnprcs-eng.html>).

As of 2017, there are 78 terminals registered with [Environment and Climate Change Canada](https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en)⁴(Link: <https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en>). All terminals in Canada have truck-offloading capacity, and some also have capacity to offload onto ships, railcars, or even pipelines. Logistically, tanker trucks are the most practical and economical way of getting gasoline to retail stations, because they allow for flexibility in both the volume and destination of each shipment. In the Atlantic Provinces, many terminals also have marine offloading capabilities, which allow them to supply smaller towns along the coast.

The Kent Group’s [National Retail Petroleum Site Census](https://www.kentgroupltd.com/wp-content/uploads/2018/06/Executive-Summary-2017-National-Retail-Petroleum-Site-Census.pdf) (Link: <https://www.kentgroupltd.com/wp-content/uploads/2018/06/Executive-Summary-2017-National-Retail-Petroleum-Site-Census.pdf>) reports 11 948 retail gasoline stations in Canada as of 2017. Many of these are controlled by major oil companies and integrated refiner-marketers, and sell their respective brands of gasoline. Many other independently controlled retail stations [contract to sell the same well-known brands](https://www.canadianfuels.ca/Blog/August-2017-/Why-consumers-have-more-choice-than-ever-when-they-buy-gasoline/) (Link: <https://www.canadianfuels.ca/Blog/August-2017-/Why-consumers-have-more-choice-than-ever-when-they-buy-gasoline/>). To illustrate this, the Kent Group reports that 39% of gas stations across Canada carry Suncor, Esso, or Shell brands of gasoline, while 11% of all stations are price-controlled by these companies. Overall, Canada’s seven integrated refiner-marketers determined prices at 23% of gas stations.

Gasoline Imports

Just as Canadian refineries process both domestic and imported oil, gasoline terminals import gasoline in addition to domestic supply. Although Canada is a net exporter of gasoline, some imports are required to meet local demand due to differences in regional production. Quebec generally imports the most gasoline, much of which is subsequently shipped to Ontario. The Atlantic Provinces and British

⁴ The Canadian Environmental Protection Act (CEPA) classifies terminals as “Petroleum Product Wholesaler-Distributors”, and requires that they report to the [National Pollutant Release Inventory](https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report.html) (NPRI) (Link: <https://www.canada.ca/en/environment-climate-change/services/national-pollutant-release-inventory/report.html>). The information collected here is used in evaluating sources of pollution in Canada.

Columbia are the next largest importers of gasoline. The Yukon occasionally imports gasoline from Alaska. The European Union (E.U.) and the U.S. are both large sources of these imports. In 2017, the [E.U.](https://ec.europa.eu/eurostat/web/energy/data/database) (Link: <https://ec.europa.eu/eurostat/web/energy/data/database>) exported 5.0 billion litres to Canada, and the U.S. [Energy Information Administration](https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mgfexca1&f=a) (Link: <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=pet&s=mgfexca1&f=a>) reported 1.2 billion litres of finished motor gasoline exports to Canada.

Transportation in Western and Northern Canada

Three major pipelines connect Edmonton, the hub of western Canadian gasoline production, to major metropolitan areas in British Columbia and the Prairie Provinces. The southbound [Alberta Products Pipeline](http://tnpi.ca/our-pipelines/) (Link: <http://tnpi.ca/our-pipelines/>) carries gasoline destined for terminals in Calgary. The [Trans Mountain](https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/trnsmntn-eng.html>) pipeline runs west, supplying terminals in Kamloops and Burnaby, British Columbia. Eastbound, the [Enbridge Mainline](https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/nbrdgmnl-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/pplnprtl/pplnprfls/crdl/nbrdgmnl-eng.html>) carries gasoline to terminals in Regina, Saskatchewan, and as far as Gretna, Manitoba. Drawing from the Enbridge Mainline, the Saskatchewan Pipeline transports gasoline from Milden, Saskatchewan, to terminals in Saskatoon, and the Winnipeg Products Pipeline from Gretna to Winnipeg, Manitoba.

Edmonton refineries are also connected by rail and truck to smaller terminals in Alberta. The only registered terminal in Canada's northern territories is located in Hay River, Northwest Territories, and connects to Edmonton by rail.

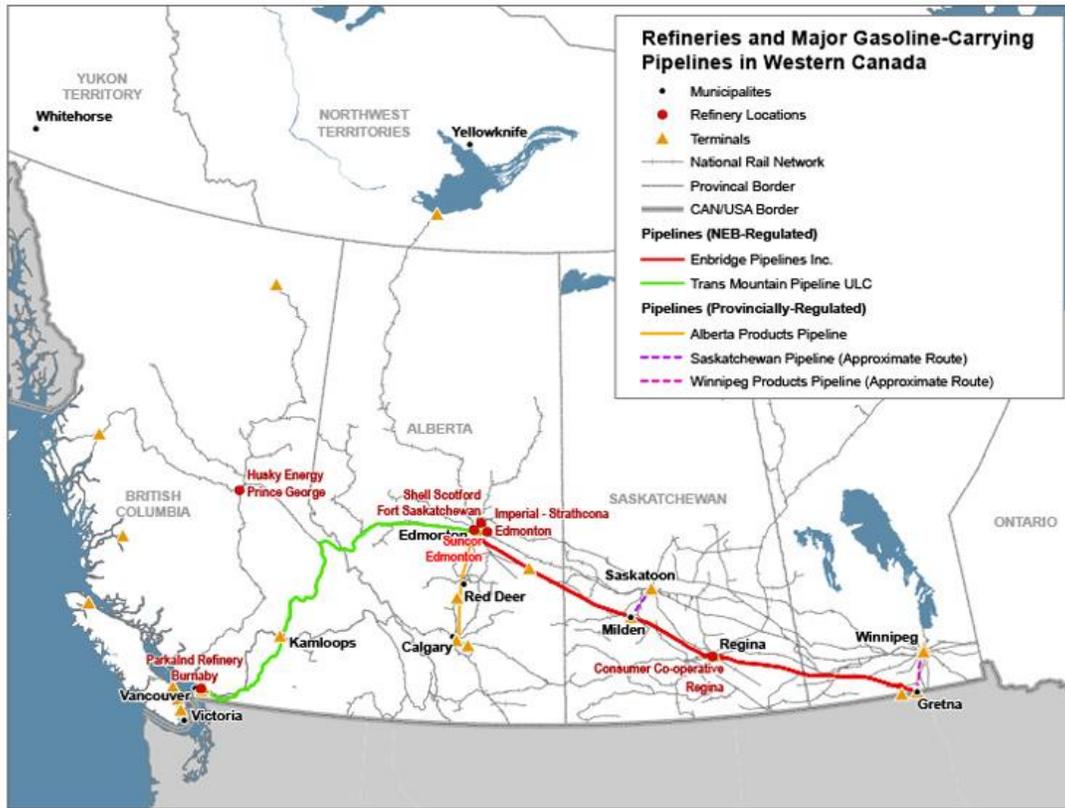
Most of the gasoline produced in British Columbia's two refineries is transported by rail, ship, or truck. The Burnaby refinery transports some gasoline by pipeline to Parkland Fuels' adjacent terminal. Some gasoline is also transported by ship to terminals along the West Coast, and by rail and truck to terminals on the mainland. Husky Energy's Prince George refinery supplies terminals across northern British Columbia and the Yukon via rail and truck.

Regina's Co-op Refinery supplies small terminals across Saskatchewan, as well as in Alberta and Manitoba via rail and truck. The refinery also ships gasoline on the Enbridge Mainline to Manitoba.

Some retail facilities in Nunavut receive supply by ship from the Atlantic Provinces, as well as from the U.S. and overseas. The Yukon occasionally imports gasoline from Alaska. Aside from this, western and northern Canada as a whole is largely self-sufficient in its supply of gasoline.

As of 2017, there are 29 terminals in western Canada and one in northern Canada registered with [Environment and Climate Change Canada](https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en) (Link: <https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en>).

Figure 5. Refineries, and Major Gasoline-Carrying Pipelines in Western Canada



Map produced by the NEB, August 2018. The map is a graphical representation intended for general informational purposes only

Source: National Energy Board

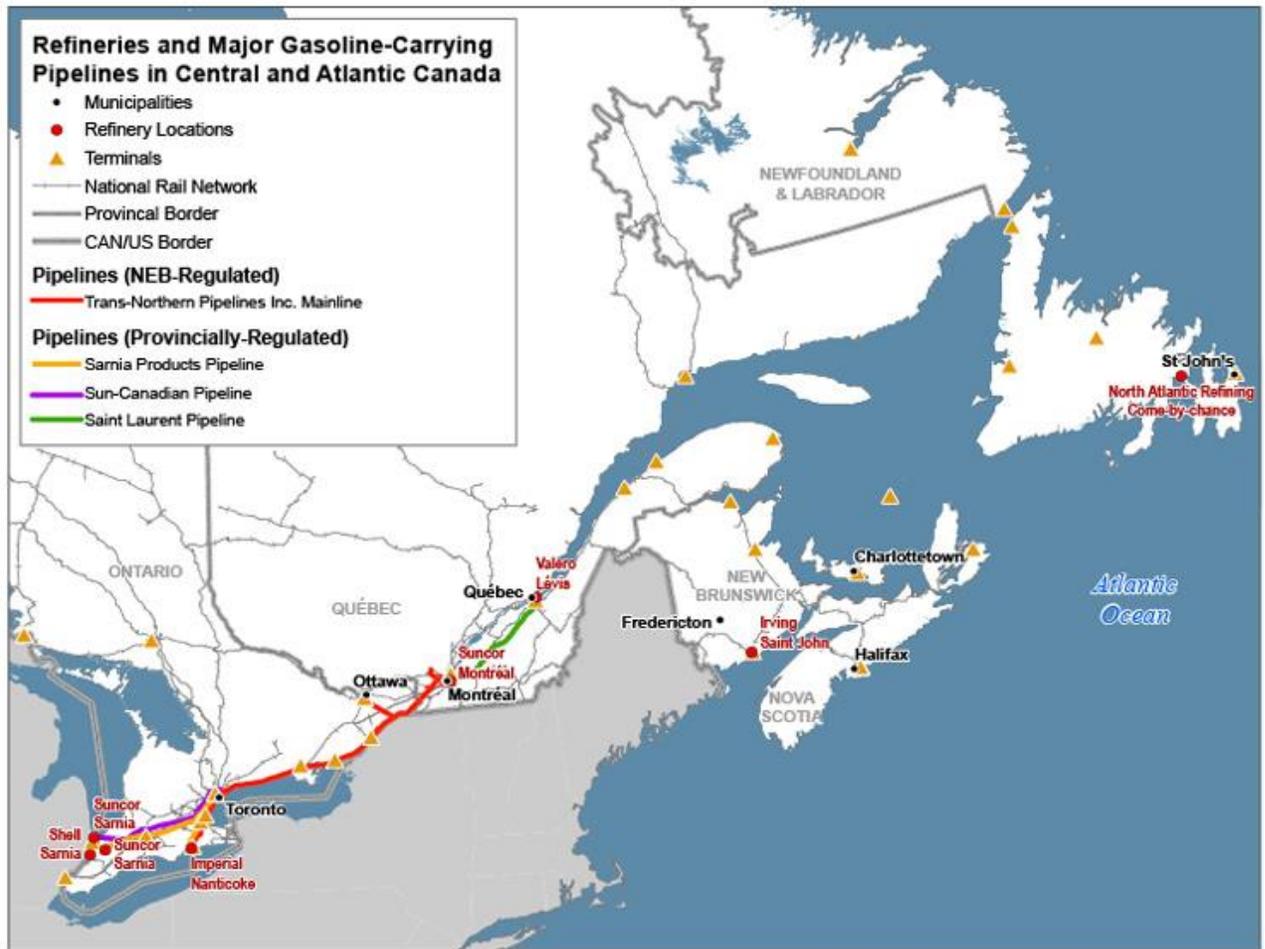
Transportation in Central and Atlantic Canada

The Sarnia Products Pipeline and [Sun Canadian Pipelines](http://sun-canadian.com/) (Link: <http://sun-canadian.com/>) connect refineries in Sarnia to terminals in London, Hamilton, and Toronto. The bi-directional [Trans-Northern Pipeline](https://www.neb-one.gc.ca/nrg/ntgrtd/trnsprttn/2016/grp1cmpns/Indlqds/trns-nrthrn-pplns-nc-trns-nrthrn-ppln-eng.html) (Link: <https://www.neb-one.gc.ca/nrg/ntgrtd/trnsprttn/2016/grp1cmpns/Indlqds/trns-nrthrn-pplns-nc-trns-nrthrn-ppln-eng.html>) flows north from the Nanticoke refinery, supplying Oakville, Mississauga, and Toronto; and south from Montreal to Toronto and Ottawa. Quebec's easternmost Jean-Gaulin refinery connects to a terminal in Montreal East via the [St Laurent Pipeline](https://www.energievalero.ca/en-ca/Operations/PipelineSaint-Laurent) (Link: <https://www.energievalero.ca/en-ca/Operations/PipelineSaint-Laurent>), as well as by rail.

Most storage terminals in Ontario are supplied by pipeline; significant volumes are also moved by ship and rail, and some small shipments by truck. Marine terminals at the Jean-Gaulin refinery and in Montreal supply most terminals around Quebec. Nearly all terminals in the Atlantic Provinces are supplied by ship from the Saint John and Come by Chance refineries, with small volumes transported by rail and truck. Atlantic refineries also occasionally supply gasoline by ship to terminals in Nunavut.

As of 2017, there were 21 terminals in Ontario, 11 in Quebec, and 16 terminals in Atlantic Canada registered with [Environment and Climate Change Canada](https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en) (Link: <https://pollution-waste.canada.ca/national-release-inventory/archives/index.cfm?lang=en>).

Figure 6. Refineries and Major Gasoline-Carrying Pipelines in Central and Atlantic Canada



Source: National Energy Board

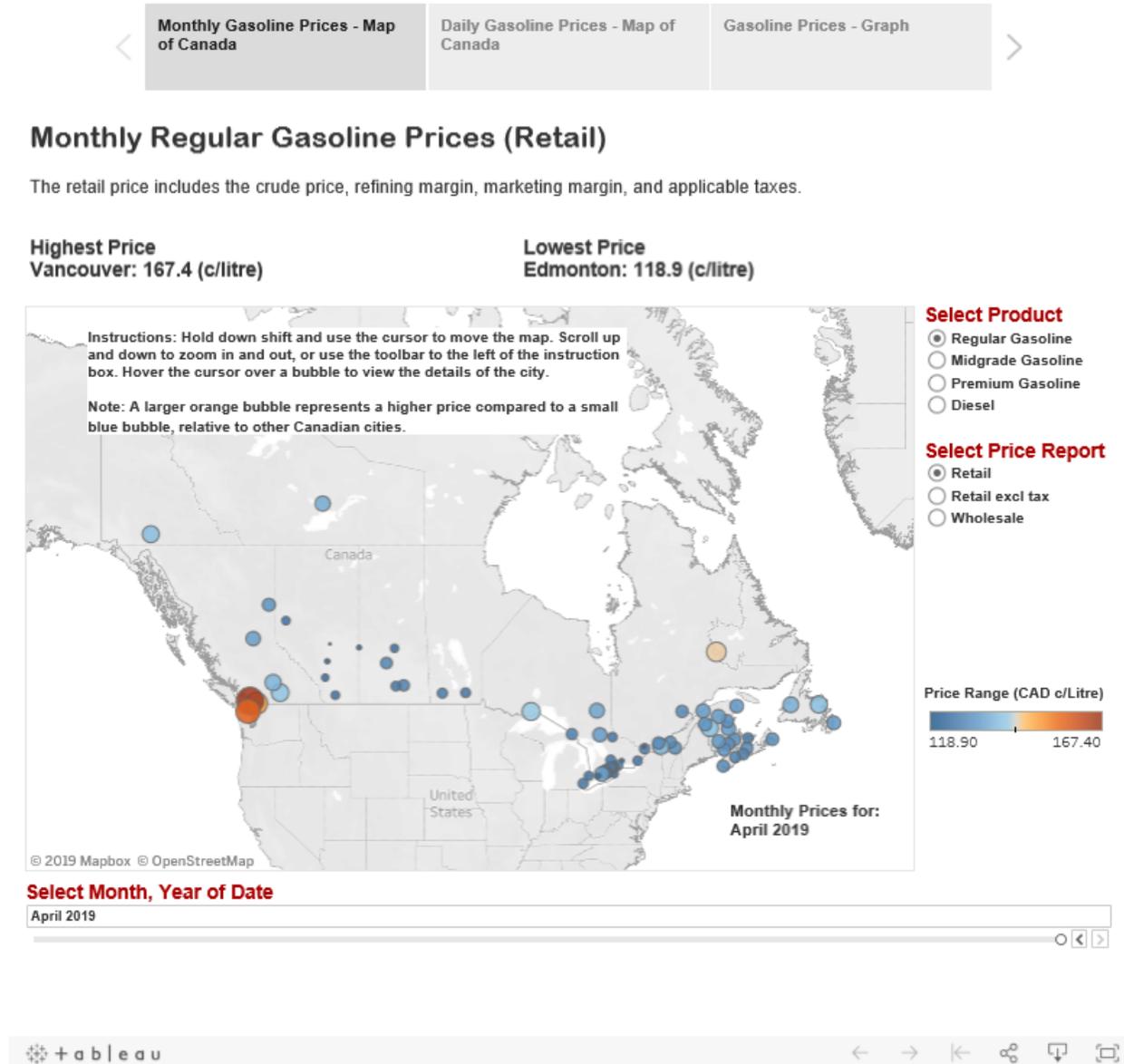
Gasoline Pricing

The retail price paid at the pump consists of the following major components:

- **Crude Oil Price:** The commodity input cost of crude oil. Crude oil prices account for some of the volatility and price fluctuations seen by consumers at the pump.
- **Refining Margin:** The cost of processing the crude oil into gasoline. This can be calculated as the difference between the price of crude oil, and the wholesale price at which the refiner sells transportation fuels. This also includes the cost to transport crude oil to refineries.
- **Marketing Margin:** The costs associated with selling the gasoline to consumers at the local station. This can be calculated as the difference between the wholesale price, and the retail price of gasoline, without taxes. This also includes the cost to transport gasoline from the refineries to the gas stations.

- **Taxes:** [The taxes paid to provincial, federal, and sometimes municipal governments. These can be a flat per litre charge, or a percentage of the per litre price](https://www.nrcan.gc.ca/our-natural-resources/domestic-and-international-markets/transportation-fuel-prices/fuel-consumption-taxes-canada/18885) (Link: <https://www.nrcan.gc.ca/our-natural-resources/domestic-and-international-markets/transportation-fuel-prices/fuel-consumption-taxes-canada/18885>)

Figure 7. Canadian retail gasoline prices



Monthly Regular Gasoline Prices dashboard is interactive online only. (Link: <https://www.nrcan.gc.ca/nrg/sttstc/crdlndptrlmprdct/rprt/2019gslnrprt/index-eng.html>).