



Import and Export Data: Methodology

Import and Export Data is an interactive tool that allows users to visualize, download, and share the Canada Energy Regulator's (CER) quarterly data import and export volumes and prices. The visualized data includes imports of natural gas including LNG, NGLs and electricity. The visualized data also includes exports of crude oil, refined petroleum products (RPPs), natural gas, natural gas liquids (NGLs) and electricity.

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ABOUT THE DATA

The CER authorizes and regulates energy trade through long-term licences, permits, and short-term orders. As part of the terms and conditions, holders of these regulatory instruments must submit, on a monthly basis, information regarding their import and export activity. The CER uses the information to fulfill its regulatory mandate. In addition, the CER compiles data, shares aggregated data with Statistics Canada and other government organizations, and makes statistical information available to industry and the general public. The CER publishes monthly import statistics for natural gas including LNG and electricity, and monthly export statistics for crude oil, RPPs, natural gas, NGLs and electricity. Quarterly data for the visualizations are obtained from these statistics.

CONFIDENTIALITY

The CER maintains the integrity, confidentiality and security of the data it is provided. Confidentiality rules align with those of Statistics Canada to ensure a standard treatment for all data¹ they also are in keeping with s20 of the *Access to Information Act* with regard to third-party information². For crude oil and natural gas liquids exports, the CER applies the following rules:

1. There must be a minimum of three (3) companies reporting and no single company has more than 75% of the total volume and the sum of the volume for two companies is not higher than 90% of the total volume.
2. If four companies (4) are reporting, no single company has more than 85% of the total volume and the sum of the volume for two companies is not higher than 94% of the total volume.

Electricity data is available publically with the origins, destinations, volumes, and prices aggregated monthly by permit number. An exception is that there are no prices provided for Manitoba Hydro contract-specific permits due to a legal requirement and the CER's confidentiality issuance.

Natural gas Export and Import Licences are long-term (over two years and up to 25 years) and the prices associated with Licences are not confidential. Natural gas Export and Import Orders are short-term (up to two years) and the prices associated with individual Orders are confidential and are only released in aggregate. The aggregated volumes and average prices of Orders represent the majority of the data for each export/import port that goes into the CER's natural gas monthly export/import data (published) and quarterly export/import data (visualized). Liquefied natural gas (LNG) and compressed natural gas (CNG) exports and imports are limited and infrequent enough to make them attributable to specific filers, and thereby average prices remain confidential. Following the NEB's MH-2-2002 Decision³, the NEB (now CER) does publish additional data to assist price transparency in the Maritimes natural gas market including data gathered from exporting parties at St. Stephen, NB.

Additional monthly data

In addition to the quarterly data in the visualization. Monthly data may be downloaded through the CER's website under [Energy Information – Statistics and Analysis](#). Monthly import volumes of NGLs and crude oil can be downloaded from the [Statistics Canada website](#).

¹ <https://www.statcan.gc.ca/eng/reference/privacy>

² <http://laws-lois.justice.gc.ca/eng/acts/A-1/page-5.html>

³ <https://apps.cer-rec.gc.ca/REGDOCS/File/Download/238299>



DATA SOURCES

CANADA ENERGY REGULATOR

Crude Oil

Total crude petroleum export volume by heavy or light crude oil

Netback price of domestic crude oil exports by type

Oil export volume by type, condensate, light sweet, light sour, heavy

Oil export volume by U.S. destination (PADDs)

Canadian crude oil export volume by mode of transportation

Refined Petroleum Products export volumes

Natural Gas Liquids (NGLs)

Propane and butane export volume by mode of transportation and province where export departs Canada

Propane and butane export volume by destination of U.S. PADD and Non-USA

Propane and butane export volume by province where export departs Canada

Average propane and butane prices by province where export departs Canada

Natural gas

Natural Gas Exports by Port (volumes, prices, purchaser type, region, term)

Natural Gas Imports by Port (volumes, prices, term)

CNG exports, imports (volumes)

Electricity

Electricity export quantity, value and unit value by source of (Canadian) province and destination of (U.S.) state

Electricity import quantity, value and unit value by source of (U.S.) state and destination of (Canadian) province

Canada Energy Regulator sourced data is developed from monthly information filings provided by market participants in accordance with regulatory instruments used to export or import energy such as Orders, Licences and Permits.

STATISTICS CANADA

Natural Gas Liquids (NGLs)

Monthly import volumes of propane and propane mixes and of butane and butane mixes into Canada by province or region (Atlantic Canada and Quebec)

CANSIM Table 134-0004 Supply and disposition of refined petroleum products, monthly (cubic metres)

Crude Oil Imports

CANSIM Tables [126-0001](#) and [126-0003](#) Supply and disposition of crude oil and equivalent, monthly (cubic metres)

Refined Petroleum Products Imports (not included in visualizations)

CANSIM Table [134-0004](#) Supply and disposition of refined petroleum products, monthly (cubic metres)

DEFINITIONS

BITUMEN

A type of petroleum with a density of over 1000 kg/m³ and an API gravity below 10°. Bitumen derived from oil sands deposits in Alberta, has an API gravity of around 8°. Canadian bitumen can be diluted with lighter hydrocarbons to produce diluted bitumen, which has an API gravity of less than 22.3°, or further “upgraded” to synthetic crude with an API gravity of 31 to 33°.

BUTANE

Is a hydrocarbon with the molecular formula C₄H₁₀. Butane is a gas at room temperature and pressure, but condenses into a liquid when pressurized, such as when stored in bottle or cylinder.

CAPACITY CHARGE

An additional billed amount that covers the difference between the amount of energy an importer or exporter expects to have available and the amount of energy that the importer or exporter actually takes.

COMPRESSED NATURAL GAS (CNG)

(Source: US EIA-Glossary)

Natural gas compressed to a pressure at or above 200-248 bar (i.e., 2900-3600 pounds per square inch) and stored in high-pressure containers. It is used as a fuel for natural gas-powered vehicles.

CONDENSATE

(Source: CER Glossary)

A liquid like a very light oil, but is extracted from natural gas production. Condensate can be produced at gas wells and at natural gas processing plants (where it is also known as pentanes plus).

CRUDE OIL AND/OR REFINED PETROLEUM PRODUCTS EXPORT ORDER

The Canada Energy Regulator authorizes oil exports by issuing short-term orders for periods less than one year for light crude oil and less than two years for heavy crude oil. These exports occur under short-term orders due to characteristics of the oil market. The CER does not regulate oil imports.

ELECTRICITY PERMIT

Electricity Permits are issued to export electricity under a public written comment process. The amount exported cannot exceed the limits approved by the CER. If the Governor in Council, after recommendation by the CER, designates a particular application for licensing, the CER may hold a public hearing, however, public hearings are no longer mandatory. The CER does not regulate electricity imports.

HEAVY CRUDE OIL

A type of petroleum with a density (more than 870 kg/m³ or API gravity higher than 31.1°). By some definitions, this category can be divided into Medium crude oil (870 to 920 kg/m³ and an API gravity between 22.3 and 31.1°), heavy crude oil (920 to 1000 kg/m³ and an API gravity between 10 and 22.3°).

LIGHT CRUDE OIL

A type of liquid petroleum with a low density (less than 870 kg/m³ or API gravity higher than 31.1°) that flows readily at room temperature.

LIQUEFIED NATURAL GAS (LNG)

(Source: CER Glossary)

Liquefied natural gas is natural gas cooled below -162 degrees Celsius (-260 degrees Fahrenheit) so that it condenses into a liquid. This reduces the volume of gas by more than 600 times, allowing for efficient transport via LNG tanker or trucks.

MH-2-2002 DECISION

National Energy Board (now CER) regulatory decision in 2002 respecting short-term Export Order procedures. The decision included a conclusion that efficient markets are characterized by broadly dispersed market information that is easily available to all market participants and that the CER's monitoring program will act to increase the amount and quality of information available to Maritime market participants.

NATURAL GAS EXPORT LICENCE, NATURAL GAS EXPORT ORDER, NATURAL GAS IMPORT ORDER

The Canada Energy Regulator authorizes natural gas exports or imports by issuing either long-term licences or short-term orders. Long-term licences no longer require a mandatory public hearing, and may be issued for up to 25 years subject to Governor-in-Council approval. Short-term orders are for a maximum period of two years can be issued without a public hearing and do not require Governor-in-Council approval.

NATURAL GAS LIQUIDS (NGLS)

Hydrocarbons recovered from natural gas or condensate as liquids when they are under slightly higher pressures and slightly lower temperatures. These liquids include, but are not limited to, ethane, propane, butanes and pentanes plus.

NETBACK PRICE

The value producers receive for crude oil and natural gas, usually determined by the market price less transportation costs.

PETROLEUM ADMINISTRATION FOR DEFENSE DISTRICT (PADD)

(Source US EIA-Glossary)

A geographic aggregation of the 50 States and the District of Columbia into five Districts. The PADDs include the States listed below:

- PADD 1 (East Coast): Connecticut, Maine, Massachusetts, New Hampshire, Rhode

Island, Vermont, Delaware, District of Columbia, Maryland, New Jersey, New York, Pennsylvania, Florida, Georgia, North Carolina, South Carolina, Virginia, and West Virginia.

- PADD 2 (Midwest): Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, and Wisconsin.
- PADD 3 (Gulf Coast): Alabama, Arkansas, Louisiana, Mississippi, New Mexico, and Texas.
- PADD 4 (Rocky Mountain): Colorado, Idaho, Montana, Utah, and Wyoming.
- PADD 5 (West Coast): Alaska, Arizona, California, Hawaii, Nevada, Oregon, and Washington

PORT

Location where a pipeline crosses Canada's international border. This is the point deemed to be where an import or export of energy takes place. Ports are in uninhabited locations but typically take their name from a nearby population center (village, town, city). Since there will be a nearby population center on each side of the border, the same port will have a different name in each respective country.

PROPANE

Is a hydrocarbon with the molecular formula C_3H_8 . Propane is a gas at room temperature and pressure, but condenses into a liquid when pressurized, such as when stored in a propane tank.

PROPANE, BUTANES AND ETHANE EXPORT ORDER

Canada Energy Regulator approval is required for the export of propane, butanes and ethane, usually in the form of a short-term export order.



REFINED PETROLEUM PRODUCT (RPP)

A wide range of products refined from crude oil, such as gasoline, diesel, heating oil, and jet fuel, among others.

SWEET CRUDE OIL

A type of liquid petroleum containing less than 0.42% sulfur. Light sweet crude oil is more highly valued as it contains a disproportionately large fraction that is directly processed into gasoline, high-quality diesel, naphtha and kerosene.

SOUR CRUDE OIL

A type of liquid petroleum containing 0.5% or more of the impurity sulfur. Environmental regulations limit the sulfur content in refined fuels such as diesel and gasoline. Sour crude oil is lower quality than sweet crude oil since it requires additional processing in the refinery to remove the sulfur.

For a list of other relevant definitions, please consult the CER's Energy Information Glossary at: <http://www.cer-rec.gc.ca/nrg/tl/glssr-eng.html>

ACCESS TO DATA

The data sets used in the visualizations and the visualization source code may also be downloaded from the Government of Canada's Open Data site. These data are updated quarterly.

The Canada Energy Regulator (CER) works to keep energy moving safely across the country. We review energy development projects and share energy information, all while enforcing some of the strictest safety and environmental standards in the world. To find out how the CER is working for you visit us [online](#) or connect on [social media](#).

