

Energy statistics, December 2021

Released at 8:30 a.m. Eastern time in *The Daily*, Wednesday, March 9, 2022

Primary energy production closed 2021 at 1.9 million terajoules in December, a decrease of 1.0% year over year. Despite the slight decline, December 2021 was the highest production month since January 2021. Year over year, primary energy production had been on a steady rise in 2021, attributable to the significant impact of the COVID-19 pandemic on the energy sector in 2020. Declines in crude oil (-3.6%) and coal (-22.9%) production were largely offset by ongoing increases in natural gas production (+6.3%).

Secondary energy production rose 4.1% year over year in December, compared with a 4.3% increase in November.

Total energy exports edged down 0.3% year over year in December, following a robust increase in November (+7.3%). Although total energy exports were down compared with 2020, December's level (1.3 million terajoules) was on par with the high for the year set in January 2021. Declines in exports of natural gas (-3.7%) and primary electricity (-17.8%) were largely offset by a 5.6% rise in crude oil exports.

A number of extenuating circumstances may have contributed to December's slight declines in energy production and exports, including the emergence of the Omicron variant in late 2021, the ongoing impact of the 2021 drought in western Canada on hydro generation, and November's floods in British Columbia resulting in some pipeline infrastructure requiring repairs.

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Crude oil production drops

Production of crude oil and equivalent products decreased 3.6% in December to 23.5 million cubic metres. Although December is typically a strong production month, this was the first decline observed in nine months, as colder-than-usual temperatures affected production in western Canada.

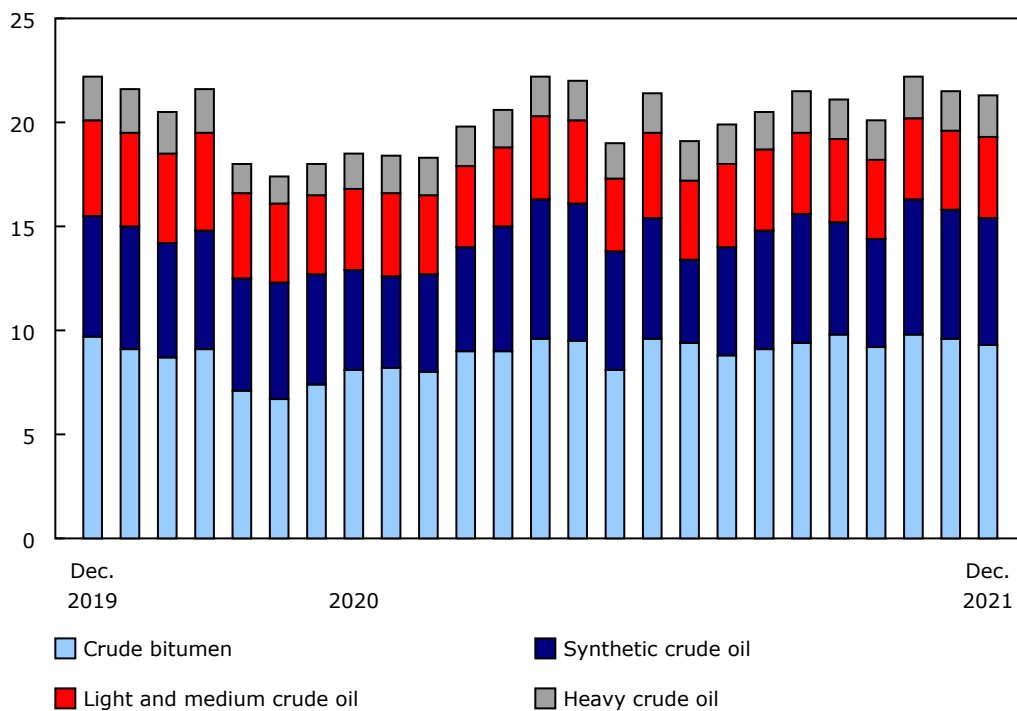
Oil sands extraction fell 5.6% to 15.4 million cubic metres. The decline was driven by lower production of synthetic crude, down 9.0% to 6.1 million cubic metres. Equipment failure and delayed repairs because of the cold weather were contributors to the production decline. In addition, operational issues at a crude bitumen mine caused overall production to drop 3.2% to 9.3 million cubic metres.

Oil extraction edged down 0.2% to 5.9 million cubic metres. Light and medium crude production decreased 2.0% to 3.9 million cubic metres, while heavy crude production rose 3.8% to 2.0 million cubic metres, the ninth consecutive year-over-year gain.



Chart 1
Production of crude oil, by type of product

millions of cubic metres



Source(s): Table 25-10-0063-01.

The [crude oil and bitumen price index](#) dropped 8.7% in December, following a 3.1% decrease in November. Further market uncertainty emerged with the news of the Omicron variant and the possibility of renewed restrictions. Although down from the high observed in October, the price of crude oil and bitumen was 57.1% higher than that in December 2020. The US Energy Information Administration estimated that demand for energy products in Canada rose slightly, by 0.4% from November.

Despite lower production, exports rose 5.6% to 19.5 million cubic metres in December. Driven by additional pipeline capacity, exports to the United States by pipeline increased 9.5% to 17.9 million cubic metres. Exports to the United States by other means and exports to other countries both fell, down 6.1% and 58.8%, respectively.

Imports dropped 4.8% to 3.9 million cubic metres. Demand from Canadian refineries was lower, down 7.8% to 2.5 million cubic metres. Meanwhile, imports from countries other than the United States increased 1.4% in December.

Production of refined petroleum products increases

Production of finished petroleum products rose 4.9% to 9.7 million cubic metres. Higher production of motor gasoline, up 10.5% to 3.1 million cubic metres, and jet fuel, up 68.4% to 424.5 thousand cubic metres, contributed to the overall increase. Conversely, production of distillate fuel oil fell 1.5% to 3.6 million cubic metres.

Despite the emergence of the Omicron variant in November, and some provinces cautioning residents not to travel, the 2021 holiday travel season was less restrictive than the 2020 one and, as such, demand for refined petroleum products rose 12.0% in December. Demand for motor gasoline was up 10.6%, while demand for jet fuel surged 102.1%. According to [aircraft movement statistics](#), total movements at Canada's major airports were up 16.5% from December 2020.

[Prices of refined petroleum products](#) dropped 4.9% in December. Motor gasoline prices were down 5.4%, while jet fuel prices were down 5.8%, compared with November. This was the second decline in a row, following high prices in October.

Exports of finished petroleum products rose 2.1% to 1.7 million cubic metres in December. This was the second consecutive increase, driven by distillate fuel oil exports, which were up 4.0% to 1.0 million cubic metres. Jet fuel and motor gasoline exports were also up, by 40.8% and 9.3%, respectively. Meanwhile, exports of other refined petroleum products declined 5.6% in December. Imports rose 45.3% to 669.4 thousand cubic metres, as imports of some of the major fuel types, including jet fuel, motor gasoline and distillate fuel oil, increased from 2020.

Growth in production and consumption of natural gas continues

Following November's 8.0% increase, marketable natural gas production rose another 6.3% to 624.8 million gigajoules in December, marking the sixth consecutive monthly year-over-year increase and the highest level since December 2018. Alberta (+1.8%) and British Columbia (+17.5%) were the main contributors to the overall increase in production.

Demand for natural gas continued to trend upward in December. After a 3.0% gain in November, total deliveries of natural gas to Canadian consumers rose 6.0% year over year in December. The increase was primarily driven by higher demand from the industrial sector in Alberta (+10.2%). In contrast, deliveries to the industrial sector in British Columbia decreased by 4.0% as the impact of the November floods (and temporary closure of some pipelines) continued into December.

Total deliveries to the residential (+3.9%) and commercial and institutional (+2.0%) sectors rebounded in December because of higher seasonal demand for heating. According to [Environment and Climate Change Canada data](#) on heating degree days, December 2021 was significantly colder on average compared with the average temperatures of December 2020, especially in central and western Canada.

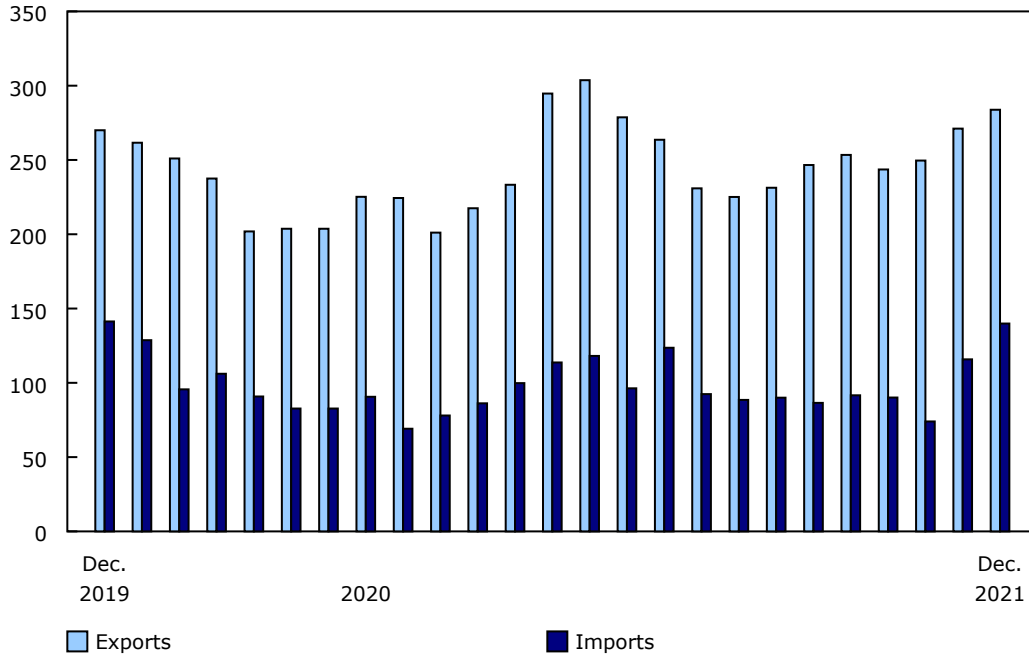
Inventories of natural gas held in Canadian facilities decreased 11.7% compared with 2020, closing at 847.2 million gigajoules. This decline was mainly attributable to seasonal demand for heating purposes.

After 12 months on an upward trend, exports of natural gas by pipeline to the United States fell 3.7% to 283.8 million gigajoules in December, partly because of a 0.4% export decline in British Columbia. Imports of natural gas were up 23.1% to 139.9 million gigajoules in December. Most of the natural gas imported (92.3%) was destined for Ontario.

The [natural gas price index](#) was down 5.7% month over month in December, after a 4.5% decline in November. On a year-over-year basis, however, natural gas prices were up 19.1%.

Chart 2
Exports and imports of natural gas

millions of gigajoules



Source(s): Table 25-10-0055-01.

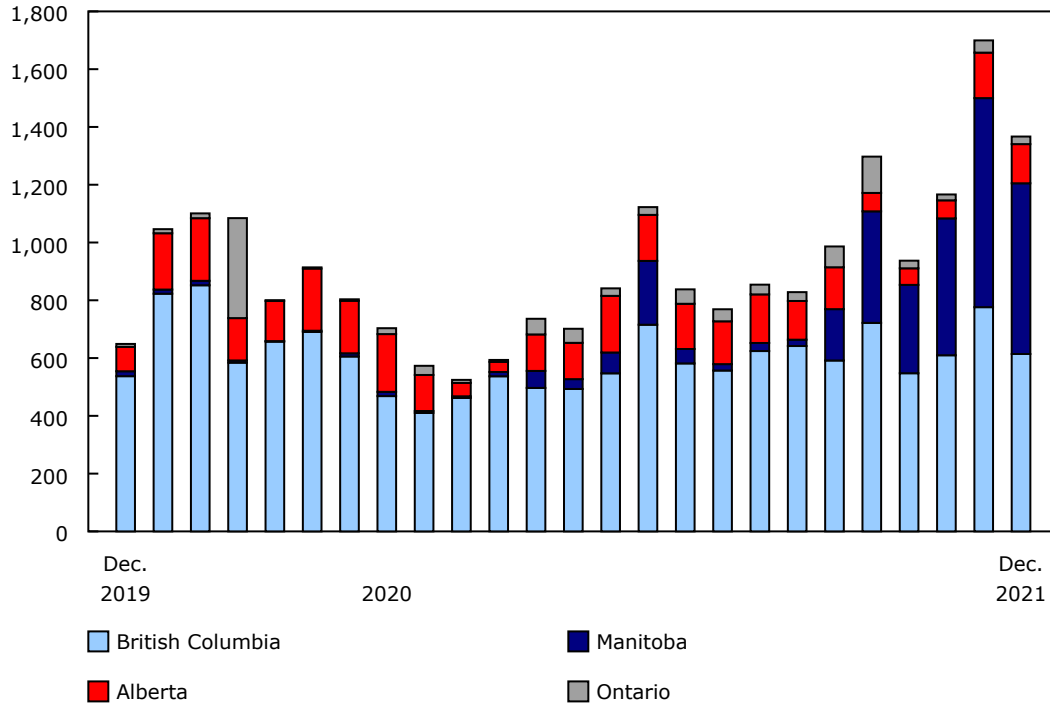
Electricity generation down, while imports continue to rise

Electricity generation continued on a downward trend in December, falling 1.2% year over year to 60.5 million megawatt-hours (MWh), the lowest December level since 2016. The decline was largely attributable to the 2021 drought in Manitoba, which resulted in low water levels in reservoirs and had a negative impact on hydroelectricity generation. Generation of electricity from nuclear energy was down 0.2%, as refurbishments and maintenance work continued at some units. Meanwhile, electricity generation from combustible fuels, including biomass, rose 6.9% year over year to 12.2 million MWh.

By generation type, hydroelectricity remained the single largest contributor to Canada's electricity mix, accounting for 61.4% of electricity production in December. Overall, renewable electricity generation accounted for close to 70% of total electricity produced in December, while combustible fuels accounted for 20.1%.

Chart 3
Imports of electricity from the United States, by province

millions of megawatt-hours



Source(s): Table 25-10-0016-01.

After a slight 0.1% increase in November, electricity consumption in Canada rose 1.8% in December 2021, compared with a year earlier, to 57.1 million MWh. The increase was partially attributable to colder-than-usual temperatures in certain parts of Canada and the subsequent higher demand for heating. Quebec (+3.9%), British Columbia (+4.1%) and Manitoba (+6.4%) were the main contributors to the increase.

The higher demand for electricity also put upward pressure on prices in December. After decreasing by 1.0% in November, the [Electric Power Selling Price Index](#) for industrial and commercial users rose 0.3% month over month in December.

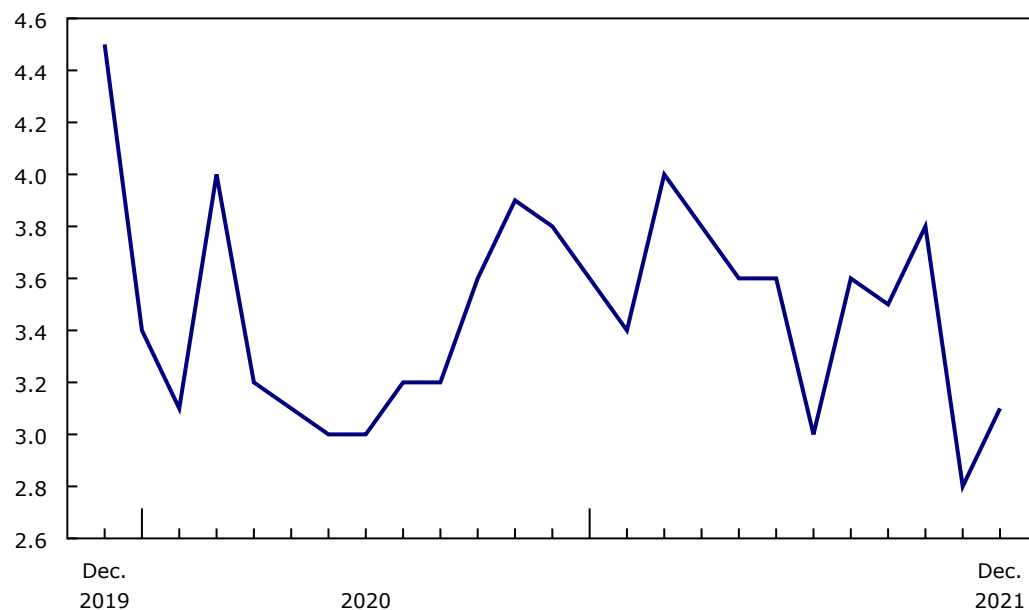
Electricity exports to the United States fell 17.8% year over year to 4.9 million MWh in December, primarily because of lower exports originating from Quebec (-21.8%) and Manitoba (-93.0%). In contrast, imports of electricity from the United States were up 97.5% to 1.4 million MWh, the second-highest level in five months. The increase was mainly attributable to higher demand for imported electricity in Manitoba, as the province reported significant declines in domestic generation in December, because of natural causes.

Coal production and exports decline year over year

Total coal production fell by 19.0% in December to 3.1 million tonnes, following a 28.1% drop in November. This was the first consecutive monthly year-over-year decline in coal production in 2021. Lower international demand contributed to a 32.9% decrease in coal exports to 1.5 million tonnes. Likewise, coke production dropped 14.4% to 158 205 tonnes in December, continuing its steady decline since February 2021.

Chart 4 Coal production

millions of tonnes



Source(s): Table [25-10-0046-01](#).

Energy: year in review 2021

The year 2021 saw a notable recovery in economic activity and demand for energy products, although the pandemic continued to impact society and the economy with the emergence of the Delta and Omicron variants.

Primary energy production rose 4.7% year over year, largely because of higher crude oil production, up 6.1% to 10.8 million terajoules, and natural gas production, up 4.0% to 7.8 million terajoules. Coal and renewable fuels also contributed to the gain, up 8.7% and 1.6%, respectively. The increase in primary energy production was slightly offset by lower electricity generation, down 2.0% to 1.8 million terajoules.

Secondary energy production also rose, by 2.6% year over year, driven by refined petroleum products (+2.8% to 4.4 million terajoules) and secondary electricity generation (+2.3% to 0.4 million terajoules). Meanwhile, coke production fell 10.0% in 2021.

Following a turbulent 2020, prices for some energy products surged in 2021 as global economies reopened, and travel and demand returned. The [crude oil and bitumen price index](#) increased more than two-thirds (+69.9%) in 2021. The limits to the global supply of crude oil imposed by the Organization of the Petroleum Exporting Countries Plus (OPEC+) continued to have an upward pressure on prices. Meanwhile, the monthly average [price index for refined petroleum products](#) also saw a large increase, of 47.0%, as motor gasoline prices soared during the year. Producers of natural gas also took advantage of higher prices (+15.8%), exporting the excess supply.

In 2021, total energy exports were up 5.5% year over year. The gain was driven by an 11.9% increase in exports of natural gas to 3.1 million terajoules. Meanwhile, crude oil exports, which represented the majority of energy exports, rose 3.3% to 8.6 million terajoules. The expansion of the Enbridge Line 3 pipeline, completed in 2021, enabled producers to increase their export capacity to the United States. Exports of refined petroleum products and coal also increased 5.3% and 2.6%, respectively, compared with 2020.

Meanwhile, decreases in exports of primary electricity (-10.1%) and renewable fuels (-2.4%) slightly offset the net increase in exports. Drought conditions and the resulting low water levels in reservoirs in Manitoba contributed to the decline in electricity exports.

Energy imports increased 4.3% year over year, mostly on higher demand for natural gas, up 7.4% to 1.2 million terajoules, and refined petroleum products, up 6.9% to 0.4 million terajoules. Crude oil imports increased 0.6% to 1.6 million terajoules, while coal imports were down 0.9% to 0.2 million terajoules.

Note to readers

The consolidated energy statistics table (25-10-0079-01) presents monthly data on primary and secondary energy by fuel type in terajoules (crude oil, natural gas, electricity, coal, etc.) and supply and demand characteristics (production, exports, imports, etc.) for Canada. The table uses data from a variety of survey and administrative sources. Estimates are available starting with the January 2020 reference month. For more information, please consult the [Consolidated Energy Statistics Table: User Guide](#).

The survey programs that support the energy statistics release include the following:

- Crude oil and natural gas (survey number [2198](#), tables 25-10-0036-01, 25-10-0055-01 and 25-10-0063-01). Data from September to November 2021 have been revised.
- Energy transportation and storage (survey number [5300](#), tables 25-10-0075-01 and 25-10-0077-01).
- Natural gas transmission, storage and distribution (survey numbers [2149](#), [5210](#) and [5215](#), tables 25-10-0057-01, 25-10-0058-01 and 25-10-0059-01).
- Refined petroleum products (survey number [2150](#), table 25-10-0081-01).
- Renewable fuel plant statistics (survey number [5294](#), table 25-10-0082-01). National estimates of renewable fuel plant statistics are presented by supply and disposition characteristics (production, shipments, inventories, etc.).
- Electric power statistics (survey number [2151](#), tables 25-10-0015-01 and 25-10-0016-01). Data for November 2021 have been revised.
- Coal and coke statistics (survey numbers [2147](#) and [2003](#), tables 25-10-0045-01 and 25-10-0046-01).

Data are subject to revisions. Energy data are revised on an ongoing basis for each month of the current year to reflect new information provided by respondents and updates to administrative data. Historical revisions are also performed periodically.

Definitions, data sources and methods for each survey program are available under their respective survey number.

The Energy Statistics Program uses respondent and administrative data.

Data in this release are not seasonally adjusted.

For more information about liquid renewable fuels, consult [Liquid renewable fuels in Canada, 2020](#).

Available tables: [25-10-0015-01](#), [25-10-0016-01](#), [25-10-0036-01](#), [25-10-0045-01](#), [25-10-0046-01](#), [25-10-0055-01](#), [25-10-0063-01](#), [25-10-0079-01](#), [25-10-0081-01](#) and [25-10-0082-01](#).

Definitions, data sources and methods: survey numbers [2003](#), [2147](#), [2149](#), [2150](#), [2151](#), [2198](#), [5210](#), [5215](#), [5294](#) and [5300](#).

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