

# Canadian System of Environmental–Economic Accounts: Intensities and demand-based measures for energy and greenhouse gas emissions, 2019

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## **Demand for energy use is largely attributable to household expenditures**

In 2019, personal expenditures by households continued to be the primary driver for energy use in Canada, responsible for 44.2% of total energy use, unchanged from 2018. Demand for international exports initiated 39.6% of energy use in 2019, a slight decrease from 39.8% in 2018.

Demand-based measures allocate industrial inputs and residuals (wastes) to the end user of goods and services rather than to the producer. Personal expenditures by households include both direct and indirect energy use and greenhouse gas (GHG) emissions. An example of direct energy use is the gasoline households require to drive their car, while an example of indirect energy use is the energy refineries and other industries require to produce the gasoline purchased by households.

## **International exports remain the largest driver of greenhouse gas emissions**

In 2019, Canada's GHG emissions were largely attributable to direct and indirect emissions resulting from the production of goods and services for international exports (44.2%) and household expenditures (40.3%). As of 2012, exports surpassed household expenditures as the main driver of GHG emissions in the country.

In 2019, the average national direct plus indirect intensity for energy use for the Canadian economy as a whole was 4.81 gigajoules of energy per \$1,000 in current dollars of output. The corresponding average direct plus indirect intensity for GHG emissions was 0.35 tonnes of carbon dioxide equivalents per \$1,000 of output.

Intensities provide a measure of the economy-wide effect on energy consumption or GHG emissions brought about by a change in the demand for an industry's output. These include both direct and indirect effects. Direct effects measure the inputs required (e.g., energy used) or wastes produced (e.g., GHGs emitted) for an extra dollar's worth of output of a given industry. Indirect effects measure the upstream activity required to produce the additional output (each product produced will, in turn, require the production of various goods and services from other industries, yielding indirect effects).



### Note to readers

Statistics Canada's physical flow accounts record the annual flows of natural resources, products and residuals between the Canadian economy and the environment. Data are presented to reflect the activities of industries, households and governments. Because they follow the classification system used in Statistics Canada's supply and use tables, it is possible to link these data to gross production and final demand to produce the data presented here. These data are currently available at the national level only.

Data for 2019 from the physical flow accounts are now available for direct plus indirect energy and greenhouse gas (GHG) emissions intensity, by industry (table 38-10-0098-01) and physical flows by final demand category for energy use, GHG emissions and water use (table 38-10-0010-01).

The data on intensities provide a measure of the energy used and the GHGs emitted throughout the entire Canadian supply chain to produce \$1,000 in current dollars of output from each industry. They reflect the interdependence between industries in the Canadian economy.

Data on intensities should only be considered on a single-year basis as they are based on gross output in current dollars. It would be necessary to adjust for inflation to use these data in a time series context.

Environment and Climate Change Canada is responsible for producing the official [National inventory report: Greenhouse gas sources and sinks](#) in Canada. This inventory, which fulfills Canada's reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC), is consistent with guidelines published by the Intergovernmental Panel on Climate Change and is the official benchmark for GHG emissions in Canada. National inventories under the UNFCCC and the GHG accounts under the United Nations System of Environmental–Economic Accounting are based on different methodological frameworks, and this results in different GHG estimates. The sector definitions of the two products differ and should therefore not be directly compared. For more information on these differences, see the [physical flow accounts metadata page \(5115\)](#) and the [greenhouse gas webpage](#) of the [Canadian Centre for Energy Information](#).

**Available tables:** [38-10-0010-01](#) and [38-10-0098-01](#).

**Definitions, data sources and methods:** survey number [5115](#).

For more information, or to enquire about the concepts, methods or data quality of this release, contact us (toll-free 1-800-263-1136; 514-283-8300; [infostats@statcan.gc.ca](mailto:infostats@statcan.gc.ca)) or Media Relations ([statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca](mailto:statcan.mediahotline-ligneinfomedias.statcan@statcan.gc.ca)).