

# Physical flow accounts: Intensities and demand-based measures, 2014

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Personal expenditure by households (45.7%) continued to be the primary driver of energy use in Canada in 2014, down slightly from 46.0% in 2013. Demand for international exports initiated 38.0% of energy use in 2014, up from 36.7% in 2013.

Demand-based measures allocate industrial inputs and residuals (wastes) to the end-user of goods and services, rather than to the producer. Personal expenditure by households is a category of demand that yields both direct and indirect energy use, water use and greenhouse gas (GHG) emissions. For energy, an example of direct energy use is the gasoline required by households to drive their car, while an example of indirect energy use is the energy required by refineries and other industries to produce the gasoline the household purchased.

## Greenhouse gas emissions

Correlated with energy use, GHG emissions in the country were largely attributable to direct and indirect emissions resulting from household expenditures, which declined from 43.1% in 2013 to 42.7% in 2014. The purchase and use of motor gasoline accounted for just over one-quarter of the emissions linked to this category of demand (26.4%), followed by natural gas (11.9%) and electricity (10.3%).

In 2014, 41.6% of GHG emissions were attributable to the production of goods and services for international export. More than one-quarter (27.2%) of the emissions associated with exports resulted from the production and delivery of crude oil and crude and diluted bitumen to foreign markets, followed by natural gas (5.4%) and wood pulp (4.6%).

**Table 1**  
**Physical flows by final demand category, 2014**

	Energy use <sup>1</sup>		Greenhouse gas emissions	
	terajoules	% of total	kilotonnes	% of total
Personal expenditure (households) <sup>2</sup>	5,216,046	45.7	324 042	42.7
Non-profit institutions serving households'				
consumption expenditure	98,841	0.9	4 845	0.6
Government net current expenditure	672,402	5.9	36 461	4.8
Gross fixed capital formation	1,091,393	9.6	77 589	10.2
International exports	4,329,532	38.0	315 919	41.6

1. Energy use is expressed on a net basis to avoid double-counting of electrical energy generated from fossil fuels.

2. The category personal expenditure includes direct household emissions and energy use in addition to the industrial amounts required to satisfy household demand for goods and services.

Source(s): CANSIM table [153-0129](#).

## Intensities

In 2014, the average industrial direct plus indirect energy use intensity was 5.43 gigajoules of energy use per \$1,000 (current dollars) of production. The average direct plus indirect GHG emissions intensity was 0.38 tonnes emitted per \$1,000 of production.

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 or wastes required for an extra dollar's worth of output of a given industry. Indirect effects measure the upstream changes 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 in the process).



### 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. Since 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 2014 from the physical flow accounts are now available for energy intensity and greenhouse gas emissions intensity by industry (153-0115). The 2014 data for energy use and GHG emissions by final demand category (153-0129) are also available.

Estimates of energy use (153-0113) and GHG emissions (153-0114) for 2014 and 2015 were revised following release of the 2014 supply and use tables (381-0033).

The data on intensities by industry provide a measure of the interdependence between an industry, the rest of the economy, and the use of inputs or production of wastes. They should only be considered on a single-year basis (rather than as time series) since they are based on gross output in current dollars.

Environment and Climate Change Canada is responsible for producing Canada's National Inventory Report on Greenhouse Gas Sources and Sinks. This inventory fulfills Canada's reporting obligations under the United Nations Framework Convention on Climate Change (UNFCCC), and is the official benchmark for GHG emissions in Canada. The reporting requirements of the UNFCCC differ from the methodological guidelines of the United Nations System of Environmental–Economic Accounting used to create the greenhouse gas account described here. For more information on these differences, see the physical flow accounts survey page (5115).

**Available in CANSIM: tables [153-0113 to 153-0115](#) and [153-0129](#).**

**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; [STATCAN.infostats-infostats.STATCAN@canada.ca](mailto:STATCAN.infostats-infostats.STATCAN@canada.ca)) or Media Relations (613-951-4636; [STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca](mailto:STATCAN.mediahotline-ligneinfomedias.STATCAN@canada.ca)).