



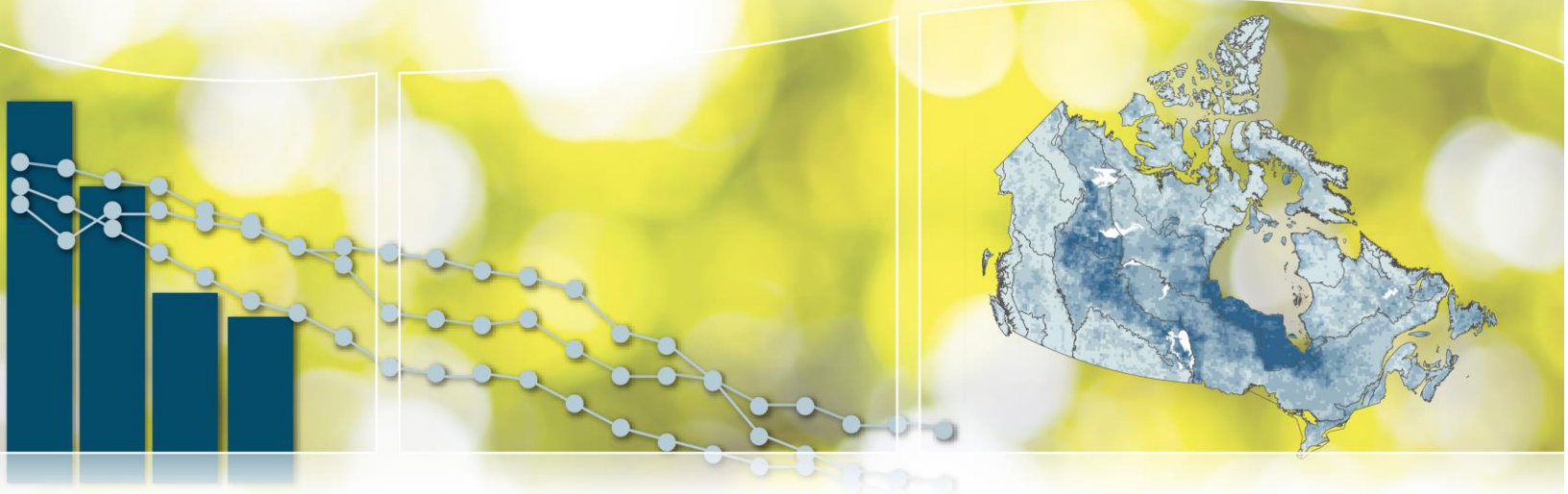
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Canadian Environmental Sustainability Indicators

Greenhouse gas emissions from large facilities



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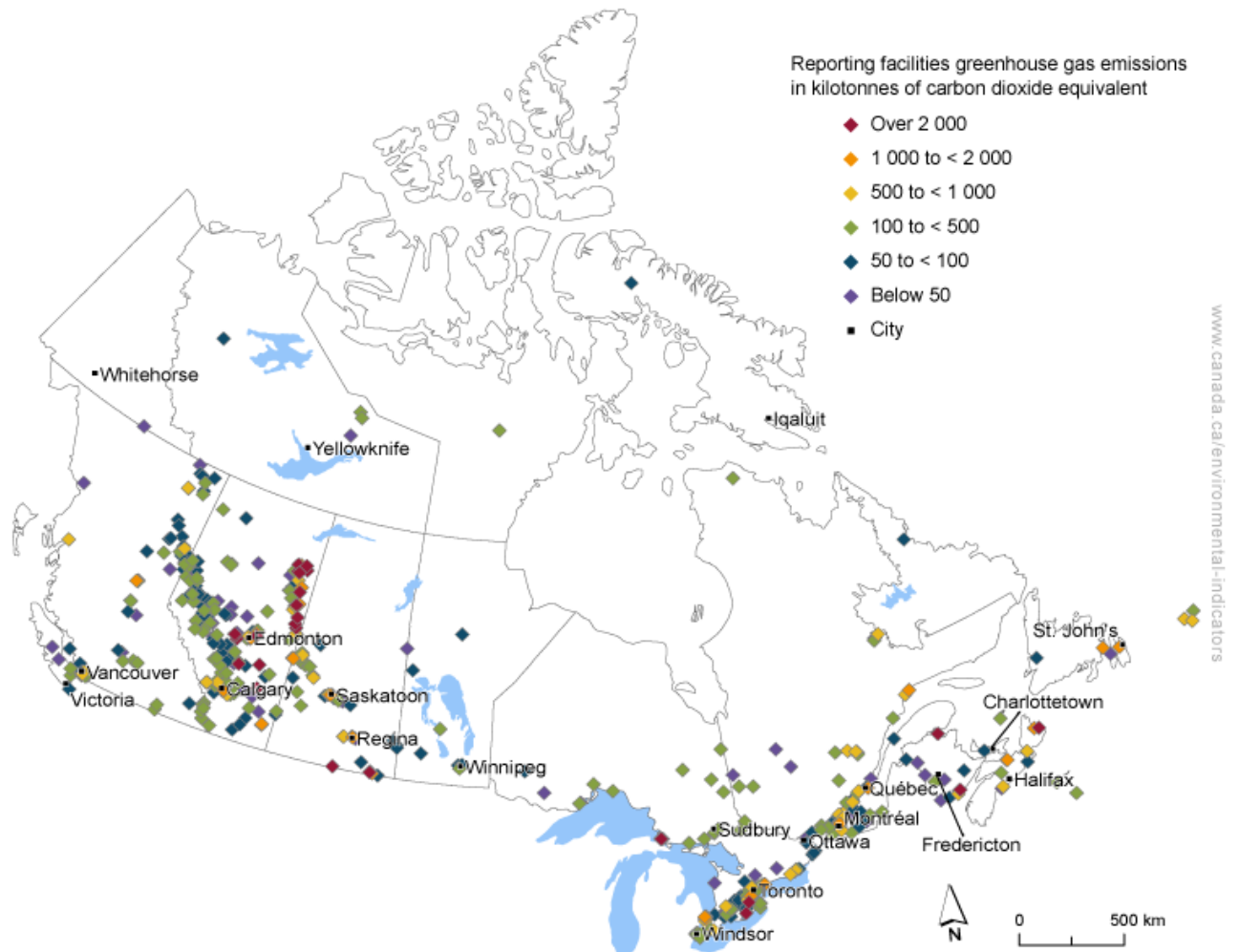
Greenhouse gas emissions from large facilities indicator

The release of greenhouse gases (GHGs) and their increasing concentration in the atmosphere is leading to a changing climate. This change has an impact on the environment, human health and the economy. This indicator tracks GHG emissions and provides consistent information on emissions from the largest emitting facilities in Canada.

Key results

- In 2016, 263 megatonnes (Mt) of GHGs in carbon dioxide equivalent (CO₂ eq) were emitted by 596 facilities reporting to the GHG Reporting Program.
- Emissions from the reporting facilities account for over one third (37%) of Canada's total GHG emissions.

Figure 1. Greenhouse gas emissions from facilities, Canada, 2016



Navigate data using the [interactive map](#)

Source: Environment and Climate Change Canada (2018) [Greenhouse Gas Reporting Program - Overview of 2016 Reported Emissions](#).

In 2016, there were more facilities reporting to the GHG Reporting Program compared to the previous year (596 compared to 563). In addition, 21 facilities reported for the first time and more facilities with emissions below 50 kilotonnes (kt) reported voluntarily. Despite this increase, total facility-reported emissions in 2016 remained largely unchanged from the 2015 total of 264 Mt CO₂ eq.

In 2016, mining, quarrying, and oil and gas extraction accounted for 33% of facility-reported emissions; utilities, 32%; and manufacturing, 29%.

Compared to 2005, total emissions from all reporting facilities have decreased overall by 5%. Over the same period, the number of facilities reporting to the GHG Reporting Program has increased from 337 in 2005 to 596 in 2016.¹ In 2005, mining, quarrying and oil and gas extraction accounted for 17%; utilities, 44%; and manufacturing, 33%.

Since 2005, emissions from facilities in the utilities and manufacturing sectors have declined overall, while emissions from the mining, quarrying, and oil and gas extraction sector have steadily increased.

About the indicator

What the indicator measures

The indicator reports the total emissions of large GHG emitters in Canada for the year 2016.

In March 2004, the Government of Canada announced the introduction of the Greenhouse Gas Reporting Program to annually collect emission information for facilities across Canada. Unlike Canada's National Inventory Report, which compiles GHG data at the national and provincial/territorial levels and covers all GHG sources and sinks in Canada, the GHG Reporting Program applies only to specific emission sources that exist at large GHG-emitting facilities (industrial and other types of facilities).

To date, the GHG Reporting Program has required all facilities that emit the equivalent of 50 000 tonnes (50 kilotonnes) or more of GHGs (in carbon dioxide equivalent units) per year to submit a report to Environment and Climate Change Canada. Mandatory reporting of GHG emissions by these facilities was established by the Minister of the Environment under the authority of sections 46 to 53 of the Canadian Environmental Protection Act, 1999.

Why this indicator is important

The release of GHGs and their increasing concentrations in the atmosphere are having significant impacts on the environment, human health and the economy. The indicator informs the public and decision makers on the release of GHG emissions from the largest emitting facilities in Canada. Consult [Greenhouse gas emissions: drivers and impacts](#) for information on the human health, environmental and economic impacts of greenhouse gas emissions.

The GHG Reporting Program ensures that the GHG emissions from Canada's largest emitters are measured and reported. This mandatory reporting contributes to the development, implementation and evaluation of climate change and energy policies and strategies in Canada.

Greenhouse gas emissions data reported through the GHG Reporting Program are used, where appropriate, to confirm the reasonableness of estimates of GHG emissions in Canada in the National Inventory Report.

Related indicators

The [Greenhouse gas emissions](#) indicators report trends on Canada's GHG emissions.

¹ Includes some facilities that emit less but report voluntarily to the GHG Reporting Program.

Data sources and methods

Data sources

The data used in the indicator are from Environment and Climate Change Canada's [Greenhouse Gas Reporting Program](#).

More information

The Greenhouse gas emissions from large facilities indicator uses data from the 2016 facility GHG Reporting Program. The data are collected on an annual basis. Facilities are required to report their GHG emissions to Environment and Climate Change Canada by June 1 of each year.

To date, the GHG Reporting Program has provided local GHG emissions data from large emitters in Canada (those producing 50 kilotonnes or more of carbon dioxide equivalent emissions per year). Facilities with emissions below 50 kilotonnes per year can voluntarily report their GHG emissions.

The Canadian Environmental Sustainability Indicators [interactive map](#) provides facility GHG data for the years 2007 to 2016.

Methods

The quantity of GHGs released by each facility is calculated by the reporting facility. The calculations are based on monitoring or direct measurement, mass balance, emission factors, engineering estimates or fuel and activity data.

More information

So far, Environment and Climate Change Canada does not impose specific methods. Reporting facilities have been advised to choose the quantification methodologies most appropriate to their particular industry or application. However, facilities must use methods for estimating emissions that are consistent with the [guidelines](#) developed by the Intergovernmental Panel on Climate Change and adopted by the United Nations Framework Convention on Climate Change, for the preparation of national GHG inventories. See the [Technical guidance on reporting greenhouse gas emissions](#) for more information.

Caveats and limitations

A facility is required to report to the Greenhouse Gas Reporting Program only if its emissions exceed the reporting threshold of 50 000 tonnes in carbon dioxide equivalent for a given year.

Comparisons among years may be made, bearing in mind that some facilities might not have been required to report in years for which they did not exceed the reporting threshold. Attention to consistency and comparability in the dataset is needed when comparing emissions from year to year.

Different facilities in a given type of industry may also use different methods for estimating emissions.

For a complete discussion of the caveats and limitations with respect to facility-reported greenhouse gas emissions data, refer to the [Overview of 2016 Reported Emissions](#).

Resources

References

Environment and Climate Change Canada (2016) [Technical guidance on reporting greenhouse gas emissions](#). Retrieved on January 28, 2018.

Environment and Climate Change Canada (2018) [Facility Greenhouse Gas Reporting Program - Overview of 2016 Reported Emissions](#). Retrieved on January 31, 2018.

Additional information can be obtained at:

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