



Environment
Canada

Environnement
Canada

www.ec.gc.ca



Data Sources and Methods for the Greenhouse Gas Emissions from Large Facilities Indicator

April 2015

Canada 

Suggested citation for this document: Environment Canada (2015) Canadian Environmental Sustainability Indicators: Data Sources and Methods for the Greenhouse Gas Emissions from Large Facilities Indicator. Consulted *on day Month, year*. Available at: www.ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=3F4A5494-1.

ISBN: 978-1-100-25910-9
Cat. No.: En4-144/36-2015E-PDF

Unless otherwise specified, you may not reproduce materials in this publication, in whole or in part, for the purposes of commercial redistribution without prior written permission from Environment Canada's copyright administrator. To obtain permission to reproduce Government of Canada materials for commercial purposes, apply for Crown Copyright Clearance by contacting:

Environment Canada
Inquiry Centre
10 Wellington Street, 23rd Floor
Gatineau QC K1A 0H3
Telephone: 819-997-2800
Toll Free: 1-800-668-6767 (in Canada only)
Fax: 819-994-1412
TTY: 819-994-0736
Email: enviroinfo@ec.gc.ca

Photos: © Environment Canada

© Her Majesty the Queen in Right of Canada, represented by the Minister of the Environment, 2015

Aussi disponible en français

1. Introduction

The Greenhouse Gas Emissions from Large Facilities indicator (ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=31022B8E-1) is part of the Canadian Environmental Sustainability Indicators (CESI) program (ec.gc.ca/indicateurs-indicators/default.asp?lang=En&n=47F48106-1), which provides data and information to track Canada's performance on key environmental sustainability issues.

2. Description and rationale of the Greenhouse Gas Emissions from Large Facilities indicator

2.1 Description

In March 2004, the Government of Canada announced the introduction of the Facility Greenhouse Gas Emissions Reporting Program (GHGRP) for facilities (ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1). Unlike Canada's National Inventory Report (NIR) (ec.gc.ca/ges-ghg/default.asp?lang=En&n=83A34A7A-1), which compiles greenhouse gas (GHG) data at a national level and is developed from national and provincial statistics, the GHGRP applies only to the largest GHG emitters in Canada (industrial and other types of facilities). Through the GHGRP, all facilities that emit the equivalent of 50 000 tonnes (50 kilotonnes [kt]) or more of GHGs (in carbon dioxide equivalent [CO₂ eq] units) per year are required to submit a report to Environment 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 (CEPA 1999) (ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=26A03BFA-1).

GHG emissions data reported through the GHGRP are used, where appropriate, to confirm estimates in the NIR. The extent to which the emissions data are used in the NIR is dependent upon the level of detail and type of data available.

2.2 Rationale

The GHGRP ensures the mandatory reporting of GHG emissions by some of Canada's largest industrial emitters. Mandatory reporting of facility emissions provides a more precise picture of the sources and amounts of Canada's GHG emissions, thus contributing to the development, implementation and evaluation of climate change and energy policies and strategies in Canada.

2.3 Recent changes to the indicator

The global warming potentials (GWPs) used under the GHGRP were changed in 2013 to match the GWP values that are now used internationally and in the NIR.¹ Recalculations to the CO₂ equivalent quantities for all previous years' data (2004–2012) were done to ensure the data is consistent and comparable across all years.

¹ "Global warming potential for given time horizon" in table 2.14 of the errata to the contribution of Working Group I to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Available from: www.ipcc.ch/report/ar4/wg1/.

3. Data

3.1 Data source

The Greenhouse Gas Emissions from Large Facilities indicator is based on greenhouse gas (GHG) emissions data taken from Environment Canada's Facility Greenhouse Gas Emissions Reporting Program (GHGRP) (ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1).

3.2 Spatial coverage

The GHGRP provides local GHG emissions data from the largest industrial and other emitters in Canada (those emitting 50 kilotonnes [kt] of carbon dioxide equivalent [CO₂ eq] or more per year). Facilities with emissions falling below the reporting threshold of 50 kt per year can voluntarily report their GHG emissions.

3.3 Temporal coverage

The indicator reports 2013 facility GHGRP data. The interactive map reports facilities for the years 2004 to 2013.

3.4 Data completeness

The total facility-reported GHG emissions for 2013 represent just over one third (36%) of Canada's total GHG emissions as reported in the 2013 National Inventory Report (NIR).

3.5 Data timeliness

The GHGRP data are collected on an annual basis. Facilities are required to report their GHG emissions to Environment Canada by 1 June.

4. Methods

The quantity of greenhouse gases (GHGs) released by each facility is calculated by each reporting facility based on monitoring or direct measurement, mass balance, emission factors, engineering estimates and fuel and production data. Although estimation methods are not prescribed by Environment Canada, reporting facilities are advised to choose the quantification methodologies most appropriate for their particular industry or application. Facilities must use methods for estimating emissions that are consistent with the guidelines (www.ipcc-nggip.iges.or.jp/public/2006gl/index.html) developed by the Intergovernmental Panel on Climate Change (IPCC) and adopted by the United Nations Framework Convention on Climate Change (UNFCCC), for the preparation of national GHG inventories.

5. Caveats and limitations

A facility is only required to report to the Greenhouse Gas Emissions Reporting Program (GHGRP) if its emissions exceed the reporting threshold (50 000 tonnes in carbon dioxide equivalent [CO₂ eq]) for a given year.

Comparisons among years may be made with the understanding 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 of the facility-reported greenhouse gas (GHG) emissions data, refer to the Overview of Reported 2013 Emissions (ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-1).

6. References and further reading

6.1 References

Environment Canada (2015) Reported Facility Greenhouse Gas Data - Overview of Reported 2013 Emissions. Available from: ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-1.

6.2 Further reading

Environment Canada (2015) Facility Greenhouse Gas Emissions Reporting Program. Available from: ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1.

Environment Canada (2014) Technical Guidance on Reporting Greenhouse Gas Emissions. Available from: ec.gc.ca/ges-ghg/default.asp?lang=En&n=47B640C5-1.

Environment Canada (2013) Greenhouse Gas Emissions Quantification Guidance. Available from: ec.gc.ca/ges-ghg/default.asp?lang=En&n=DDE56C0F-1.

www.ec.gc.ca

Additional information can be obtained at:

Environment Canada

Inquiry Centre

10 Wellington Street, 23rd Floor

Gatineau, QC K1A 0H3

Telephone: 1-800-668-6767 (in Canada only) or 819-997-2800

Fax: 819-994-1412

TTY: 819-994-0736

Email: enviroinfo@ec.gc.ca