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

May 2013

ISBN : En4-144/36-2013E-PDF
Cat. No.: 978-1-100-22035-2

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1 Introduction

The Greenhouse Gas (GHG) Emissions from Large Facilities indicator is part of the Canadian Environmental Sustainability Indicators (CESI) program (<http://greenlanedev2.ncr.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) (<http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1>). Unlike Canada's National Inventory Report (NIR) (<http://www.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).

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 will provide 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.

3 Data

3.1 Data source

The GHG Emissions from Large Facilities indicator is based on GHG emissions data taken from Environment Canada's Facility GHGRP (<http://www.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 kt of CO₂ eq or more per year).

3.3 Temporal coverage

The indicator reports 2011 facility GHGRP data.

3.4 Data completeness

The total facility-reported GHG emissions for 2011 represent just over one third (36%) of Canada's total GHG emissions and over half (57%) of Canada's industrial GHG emissions¹ as reported in the 2011 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 June 1.

4 Methods

The mass of 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 developed by the Intergovernmental Panel on Climate Change (IPCC), adopted by the United Nations Framework Convention on Climate Change (UNFCCC), and used in the preparation of the National Inventory Report (NIR).

5 Caveats and limitations

A facility is only required to report to the GHGRP if its emissions exceed the reporting threshold 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.

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 large-facility GHG emissions data, refer to the Overview of the Reported 2011 Greenhouse Gas Emissions (<http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-1>).

6 References and further reading

6.1 References

Environment Canada (2013) Overview of the Reported 2011 Greenhouse Gas Emissions. Available from: <http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-1>

6.2 Further reading

Environment Canada (2013) Facility Greenhouse Gas Emissions Reporting Program. Retrieved on 7 January, 2013. Available from: <http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1>

¹ Canada's industrial GHG emissions referred to here include the following GHG categories from the *National Inventory Report 1990-2011: Greenhouse Gas Sources and Sinks in Canada: Stationary Combustion Sources* (except Residential), Other Transportation, Fugitive Sources, Industrial Processes and Waste.

Environment Canada (2012) Technical Guidance on Reporting Greenhouse Gas Emissions. Retrieved on 7 January, 2013. Available from: <http://www.ec.gc.ca/Publications/default.asp?lang=En&xml=0BB4FABF-829B-41D8-B9F0-BC689637D068>

Environment Canada (2011) Greenhouse Gas Emissions Quantification Guidance. Retrieved on 7 January, 2013. Available from: <http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=DDE56C0F-1>

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