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

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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, which provides data and information to track Canada's performance on key environmental sustainability issues.

GHG emissions indicators are used to track the progress of Canada's efforts to lower emissions and reach environmental performance objectives. Sector and geographic breakdowns are used to inform policy development and emissions reduction plans.

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 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 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.

2.3 Changes since last report

The facility GHG emissions indicator has not undergone any changes from the last reporting year (i.e. no change in the reporting requirements).

3 Data

3.1 Data source

The greenhouse gas emissions from large facilities indicator is based on GHG emissions data taken from Environment Canada's Reported Facility Greenhouse Gas Data (<http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-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 CO₂ eq or more per year).

3.3 Temporal coverage

The data for 2010 were used for this indicator. GHGRP reported data for 2010 are current as of December 2011.

3.4 Data completeness

The total facility-reported GHG emissions for 2010 represent just over one third (38%) of Canada's total GHG emissions and over half (59%) of Canada's industrial GHG emissions¹ as reported in the 2010 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, and the data are current up to 2010.

4 Methods

GHG emissions data are calculated by each reporting facility using methods and data sources such as 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 adopted by the United Nations Framework Convention on Climate Change (UNFCCC) and developed by the Intergovernmental Panel on Climate Change (IPCC) and used in the preparation of the NIR.

5 Caveats and limitations

The number of facilities that are required to report to the GHGRP can change from year to year as facilities surpass or fall under the reporting threshold. Comparing different years of data can be carried out, but this requires comparing facilities that have consistently reported emissions in each year. Different facilities in a given type of industry may also use different methods for estimating emissions.

For a complete discussion on the caveats and limitations of the large facility GHG emissions data, refer to the *Overview of the Reported 2010 Greenhouse Gas Emissions* (<http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=8044859A-1>).

¹ Canada's industrial GHG emissions referred to here include the following GHG categories from the *National Inventory Report 1990–2010: Greenhouse Gas Sources and Sinks in Canada: Stationary Combustion Sources* (except Residential), Other Transportation, Fugitive Sources, Industrial Processes and Waste.

6 References and further reading

6.1 References

Environment Canada (2010) Overview of the Reported 2010 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 (2012) Facility Greenhouse Gas Emissions Reporting Program. Retrieved on 4 April 2012. Retrieved on 4 April 2012. Available from: <http://www.ec.gc.ca/ges-ghg/default.asp?lang=En&n=040E378D-1>

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