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Air Pollutant Emission Inventory Report

1990–2013

Executive
Summary



Canada

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Environment Canada
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10 Wellington Street, 23rd Floor
Gatineau QC K1A 0H3
Telephone: 819-997-2800
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Fax: 819-994-1412
TTY: 819-994-0736
Email: enviroinfo@ec.gc.ca

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Executive Summary

The 1979 Convention on Long-range Transboundary Air Pollution (CLRTAP) endeavours to limit and, as far as possible, gradually reduce and prevent air pollution. Since 1979, the Convention has been extended by eight protocols, seven of which identify measures to be taken by Parties to achieve the Convention's objectives; the eighth protocol concerns financing. Canada has ratified five of the measures-specific protocols, for the reduction of emissions of sulphur, nitrogen oxides, cadmium, lead, mercury, dioxins and furans, and other persistent organic pollutants (POPs). Parties to the CLRTAP protocols are required to report emissions of these atmospheric pollutants annually to the United Nations Economic Commission for Europe by February 15.

Canada and the United States also work jointly to address shared concerns regarding transboundary air pollution. Under the Canada–U.S. Air Quality Agreement, Canada monitors and reports emissions of sulphur, nitrogen oxides and volatile organic compounds (VOCs) other than methane. In addition, Canada collects and publishes data on emissions of ammonia, carbon monoxide and three categories of particulate matter.

Canada's Air Pollutant Emission Inventory (APEI) has been prepared and published by Environment Canada since 1973. The APEI is a comprehensive inventory of emissions of 17 air pollutants at the national, provincial and territorial levels. This inventory fulfills Canada's international reporting obligations, supports the development of air quality management strategies, policies and regulations, informs Canadians about pollutants that affect their health and the environment, and provides data for air quality forecasting models.

This edition of the APEI reports the most recent estimates of air pollutant emissions for 1990–2013 as of February 2015. The inventory indicates that 12 of the 17 reported air pollutants show reductions compared to historical levels. Specifically:

- Emissions of sulphur (as sulphur oxides) were 1 200 thousand tonnes in 2013, 62% below the emission ceiling of 3 300 thousand tonnes established under the Helsinki Protocol.
- Emissions of nitrogen oxides were 2 100 thousand tonnes in 2013, 26% below the emission ceiling of 2 800 thousand tonnes established under the Sofia Protocol.
- In 2013, emissions of cadmium, lead and mercury were 81% (for both cadmium and lead) and 77% (for mercury) below the ceilings established under the Aarhus Protocol on Heavy Metals.
- The Aarhus Protocol also includes emission reduction commitments for POPs. In 2013, emissions of all POPs were largely below their ceilings, including the four species of polycyclic aromatic hydrocarbons (PAHs) (58% below their ceiling), hexachlorobenzene (HCB) (90% below its ceiling), and dioxins and furans (84% below their ceiling).

Emissions of non-methane VOCs and of carbon monoxide decreased by 51% and 63%, respectively, since 1990, even though Canada has no specific emission reduction targets for these substances.

Exceptions to the general downward trends described above are observed in emissions of ammonia (22% above 1990 levels in 2013), and particulate matter (52% above 1990 levels in 2013).

Downward trends in emissions of air pollutants reflect the ongoing implementation of a wide range of regulations that restrict or eliminate pollutants in order to improve and maintain air quality in Canada. Regulations specific to air pollutants under the *Canadian Environmental Protection Act, 1999* (CEPA 1999) include, but are not limited to, the following:

- *Volatile Organic Compound (VOC) Concentration Limits for Automotive Refinishing Products Regulations* (amended 2010)
- *Volatile Organic Compound (VOC) Concentration Limits for Architectural Coatings Regulations* (amended 2009)
- *Heavy-duty Vehicle and Engine Greenhouse Gas Emission Regulations* (2013)
- *Marine Spark-Ignition Engine, Vessel and Off-Road Recreational Vehicle Emission Regulations* (amended 2011)
- *Off-Road Compression-Ignition Engine Emission Regulations* (amended 2012)
- *Off-Road Small Spark-Ignition Engine Emission Regulations* (amended 2012)
- *On-Road Vehicle and Engine Emission Regulations* (amended 2014)
- *Passenger Automobile and Light Truck Greenhouse Gas Emission Regulations* (amended 2014)
- *Benzene in Gasoline Regulations* (amended 2011)
- *Contaminated Fuel Regulations* (1991)
- *Gasoline and Gasoline Blend Dispensing Flow Rate Regulations* (2000)
- *Gasoline Regulations* (amended 2010)
- *Renewable Fuels Regulations* (amended 2013)
- *Sulphur in Diesel Fuel Regulations* (amended 2012)
- *Sulphur in Gasoline Regulations* (amended 2009)
- *Products Containing Mercury Regulations* (2014)
- *Secondary Lead Smelter Release Regulations* (1991)
- *Export of Substances on the Export Control List Regulations* (2013)
- *Pulp and Paper Mill Effluent Chlorinated Dioxins and Furans Regulations* (1992)

All regulations administered under CEPA 1999 are available in the registry: www.ec.gc.ca/lcpe-cepa/eng/regulations/?n=54FE5535-1.