COMPENDIUM OF CANADA'S ENGAGEMENT IN INTERNATIONAL ENVIRONMENTAL AGREEMENTS AND INSTRUMENTS

Agreement between the Government of Canada and the Government of the United States on Air Quality (AQA)

SUBJECT CATEGORY:
Air

TYPE OF AGREEMENT / INSTRUMENT:
Canada – United States

FORM:
Legally-binding treaty

STATUS:
- Signed by Canada March 13, 1991
- Ratified by Canada March 13, 1991
- In force in Canada March 13, 1991
- In force internationally March 13, 1991
- Amended to include an Ozone Annex on December 7, 2000.
- Ongoing

LEAD & PARTNER DEPARTMENTS:
Lead: Environment and Climate Change Canada
Partners: U.S. Environmental Protection Agency

FOR FURTHER INFORMATION:

Web Links:
- Canada - United States Air Quality Agreement
- Canada-U.S. Air Quality Agreement - Ozone Annex (2000)
- Canada-United States Transboundary Particulate Matter Science Assessment 2013 – Executive Summary
- Canada-U.S. Air Quality Agreement Progress Report 2018
- Transboundary Air – Environment and Climate Change Canada website

Contacts:
ECCC Inquiry Centre

COMPENDIUM EDITION:
June 2022

PLAIN LANGUAGE SUMMARY

Cross-border air pollution from the U.S. impacts Canadian air quality. Prevailing winds can carry air pollutants from the U.S. to Canada and these pollutants contribute significantly to the formation of acid rain and smog in certain regions of Canada. In 1991, Canada and the U.S. committed to reduce the impact of transboundary air pollution though the Canada-U.S. Air Quality Agreement. The Agreement was originally negotiated to address transboundary acid rain and amended in 2000 to include ground-level ozone, a component of smog.

ECCC and the U.S. EPA are responsible for implementing the obligations in the Agreement. The Agreement continues to provide important opportunities for collaboration between Canada and the U.S. on air pollution and related issues.

OBJECTIVE

The Agreement seeks to control and reduce transboundary air pollution between Canada and the U.S. and includes commitments on notification of potential new sources of transboundary pollution, consultation on existing sources of possible transboundary pollution, and biennial progress reports.

KEY ELEMENTS

The Agreement includes three annexes:

- **Annex I (Acid Rain Annex)**, contains specific objectives to reduce emissions of sulphur dioxide (SO_2) and nitrogen oxides (NO_x), the precursors to acid rain.
- **Annex II (Scientific and Technical Cooperation),** contains guidelines concerning scientific and technical activities, economic research, and the exchange of information related to air quality, acid deposition, and other areas of mutual interest.
- **Annex III (Ozone Annex)**, contains commitments to control and reduce emissions of NO_x and volatile organic compounds (VOCs), the precursors to ground-level ozone, a key component of smog.

Canada's specific obligations include:

Annex I (Acid Rain Annex):

SO_2 and NO_x:

- by 1994, reduction of annual SO_2 emissions in seven easternmost provinces to 2.3 million tonnes;
- by 2000, permanent national emissions cap of 3.2 million tonnes per year of SO_2;
- by 2000, reduction in annual stationary source NO_x emissions of 100,000 tonnes below the year 2000 forecast level of 970,000 tonnes;
- by 1995, develop further annual NO_x emission reduction requirements from stationary sources to be achieved by 2000 and/or 2005.

Mobile Sources:

- implement a more stringent NO_x control program.

Compliance Monitoring:

- by 1995, estimate emissions of NO_x and SO_2 from new electric utility units and existing electric utility units greater than 25 MWe (megawatts electrical) using methodologies like continuous emissions monitoring (CEMS) and investigate feasibility of using and implementing CEMS where appropriate.
- work towards utilizing comparably effective methods of emission estimation for SO_2 and NO_x emissions from all major industrial boilers and process sources, including smelters.

Prevention of Significant Deterioration (PSD)/Visibility:

- by 1995, develop and implement means for achieving levels of PSD/Visibility protection comparable to those in the United States with respect to sources that could cause significant transboundary air pollution.

Annex III (Ozone Annex):

With the purpose of achieving the Canada-wide Standard for Ozone in Canada and the National Ambient Air Quality Standard for Ozone in the U. S., Canada and the U.S. committed to reduce their emissions of NO_x and VOCs. The commitments apply to a defined region in both countries known as the Pollutant Emission Management Area (PEMA), which includes central and southern Ontario, Southern Quebec, 18 U.S. states and D.C. The states and provinces within the PEMA are the areas where emission reductions are most critical for reducing transboundary ozone.

Vehicles, Engines and Fuels:

- stringent NO_x and VOC emission reduction standards for vehicles (including cars, vans, light-duty trucks, and off-road vehicles), small engines, diesel engines, and fuels.

Stationary Sources of NO_x Emissions:

- by 2007, annual caps of 39 kilotonnes (kt) of NO_x emissions from fossil-fuel power plants in central and southern Ontario and 5 kt of NO_x in southern Quebec.

NO_x and VOC Emission Reduction Strategies:

- measures to reduce NO_x emissions from key industrial sectors, and VOC emissions from solvents, paints, and consumer products to attain the Canada-wide Standard for Ozone.

Ontario and Quebec Specific Measures:

- measures to reduce emissions of NO_x and VOCs.

Reporting:

- beginning in 2004, annual and ozone season emissions of NO_x and VOCs for the PEMA;
- beginning in 2002, ambient ozone, NO_x and VOC concentrations, and 10-year trends within 500 km of the Canada-US border.

Revisiting:

- in 2004, assess progress in implementing the annex with a view to negotiating further reductions;
- at the request of either party discuss the possibility of amending the annex to designate additional PEMAs or to revise annex commitments.

In addition, Annex II sets out scientific and technical cooperation for Canada and the U.S.:

- conduct air pollutant monitoring activities;
- harmonize methods for emissions inventories, trends, and projections;
- cooperate and exchange information on scientific and technical activities and economic research;
- provide public access to the databases containing the emissions and monitoring data reported or shared under the Agreement;
- consult and share respective information on data, tools, and methodologies and develop joint analyses including those designed to track health and environmental responses to controls; facility-specific emissions data and related information required for modeling and regulatory policy development; and evaluation of transboundary transport.

EXPECTED RESULTS

This Agreement aims to reduce the transboundary movement of air pollutants, particularly those that contribute to acid rain and smog, between Canada and the U.S. Canada is required to control its emissions that contribute to transboundary air pollution and to implement specific emissions limitations or reductions of air pollutants through programs and measures.

CANADA'S INVOLVEMENT

The Agreement is important to Canada because it provides a formal and flexible mechanism to address transboundary air pollution, which has an impact on Canada's air quality, human health, and the environment. It also paved the way for bilateral cooperation on a variety of scientific activities related to air quality.

The Agreement established a bilateral Air Quality Committee to administer the overall implementation of the Agreement supported by two subcommittees, which are co-chaired by both countries.

RESULTS / PROGRESS

Activities

As the Canadian lead, Environment and Climate Change Canada must: facilitate emissions limitations/reductions; conduct emissions reporting and air quality monitoring activities; exchange information on monitoring, emissions, emission control technologies, atmospheric processes, and effects; assess and report on progress in implementing the Agreement.

The Air Quality Management System (AQMS) is the cornerstone of Canada's approach to addressing outdoor air pollution. Working with provinces and territories, Canada has established ambient air quality standards for fine particulate matter, ozone, nitrogen dioxide and sulphur dioxide. These standards are the driver for air quality management across the country. In addition, Canada has put in place regulatory and non-regulatory instruments to reduce air pollutant emissions from major industrial sources, transportation, and consumer and commercial products.

The Canadian population's exposure to ambient air pollution has decreased since 2007. Prior to the most recent reporting period, 77% of Canadians were living in areas where outdoor pollution levels for fine particulate matter, ozone, sulphur dioxide, and nitrogen dioxide were below the Canadian Ambient Air Quality Standards. Over 2016 to 2018, this percentage dropped to 68%, which has been attributed to smoke from large wildfires in Canada and the U.S. that negatively affected air quality in parts of Canada in 2018.

A Transboundary Particulate Matter Science Assessment was completed in 2013 to support the consideration of possibly adding a particulate matter annex to the Agreement.

Officials from the two countries had several exploratory discussions on updating the AQA, given that both countries met their respective emission reductions commitments under the Agreement some years ago.

In 2021, officials from the two countries agreed to undertake a review and assessment of the AQA, which may result in updating the Agreement. A review and assessment is called for under the Agreement every five years, and has not been carried out since 2012. The review and assessment is expected to be completed by the end of 2022.

Reports

The Agreement requires Canada and U.S. to produce and make public progress reports every two years and to conduct a comprehensive review and assessment of the Agreement every five years. To date, the countries have jointly produced 14 progress reports and 4 comprehensive assessments. These reports can be found on Environment and Climate Change Canada's Canada - United States Air Quality Agreement website.

The bilateral Air Quality Committee meets annually to review the progress in implementing the Agreement and discuss issues of mutual interest.

Results

Both countries continue to cooperate to reduce the transboundary movement of air pollutants and have been very successful in generating significant reductions in air pollutants that contribute to acid rain and smog, with important health and environmental benefits on both sides of the border. Canada's total SO_2 emissions decreased by 77 percent between 1990 and 2019, and Canada's total NO_x emissions decreased by 29 percent over the same period.

Both countries recognize that continued cooperative effort is necessary to address the ongoing health and environmental effects associated with acid rain and smog. Both countries continue to collaborate to assess progress under the Agreement and review any outstanding transboundary air pollution issues.