



## 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 2016](#)
- [Transboundary Air](#) – Environment and Climate Change Canada website

##### **Contacts:**

[ECCC Inquiry Centre](#)

#### **COMPENDIUM EDITION:**

January 2020

#### **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 through 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 ( $\text{SO}_2$ ) and nitrogen oxides ( $\text{NO}_x$ ), 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  $\text{NO}_x$  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<sub>2</sub> and NO<sub>x</sub>:

- by 1994, reduction of annual SO<sub>2</sub> 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<sub>2</sub>;
- by 2000, reduction in annual stationary source NO<sub>x</sub> emissions of 100,000 tonnes below the year 2000 forecast level of 970,000 tonnes;
- by 1995, develop further annual NO<sub>x</sub> emission reduction requirements from stationary sources to be achieved by 2000 and/or 2005.

#### Mobile Sources:

- implement a more stringent NO<sub>x</sub> control program.

#### Compliance Monitoring:

- by 1995, estimate emissions of NO<sub>x</sub> and SO<sub>2</sub> 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<sub>2</sub> and NO<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> 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<sub>x</sub> Emissions:

- by 2007, annual caps of 39 kilotonnes (kt) of NO<sub>x</sub> emissions from fossil-fuel power plants in central and southern Ontario and 5 kt of NO<sub>x</sub> in southern Quebec.

#### NO<sub>x</sub> and VOC Emission Reduction Strategies:

- measures to reduce NO<sub>x</sub> 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<sub>x</sub> and VOCs.

#### Reporting:

- beginning in 2004, annual and ozone season emissions of NO<sub>x</sub> and VOCs for the PEMA;
- beginning in 2002, ambient ozone, NO<sub>x</sub> 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.

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 are currently engaged in exploratory discussions on updating the AQA, given that both countries met their respective emission reductions commitments under the Agreement some years ago.

### 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 12 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<sub>2</sub> emissions decreased by 65 percent between 1990 and 2016, and Canada's total NO<sub>x</sub> emissions decreased by 38 percent between 2000 and 2016.

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.