



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

Vienna Convention for the Protection of the Ozone Layer

SUBJECT CATEGORY:

Air

TYPE OF AGREEMENT / INSTRUMENT:

Multilateral

FORM:

Legally-binding treaty

STATUS:

- Signed by Canada March 22, 1985
- Ratified by Canada June 4, 1986
- In force in Canada December 22, 1988
- In force internationally September 22, 1988

LEAD & PARTNER DEPARTMENTS:

Lead: Environment and Climate Change Canada

FOR FURTHER INFORMATION:**Web Links:**

- [Vienna Convention Secretariat website](#)
- [Text of the Vienna Convention](#)
- Environment and Climate Change Canada - [Canadian Ozone and Ultraviolet Measurement Program](#)
- [WMO/UNEP Ozone Assessments](#)
- [World Ozone and Ultraviolet Radiation Data Centre](#)
- [Canadian Brewer Spectrophotometer Network](#)
- [Canadian Ozonesonde Network](#)

Contacts:

[ECCC Inquiry Centre](#)

COMPENDIUM EDITION:

February 2022

PLAIN LANGUAGE SUMMARY

The Vienna Convention is the first international agreement dedicated to the protection of the ozone layer. The Convention commits all countries to take measures to protect human health and the environment resulting from modifications to the ozone layer.

In 1987, the Montreal Protocol on Substances that Deplete the Ozone Layer was negotiated as a protocol to the Vienna Convention. Since then, the Montreal Protocol has become the main policy agreement through which countries cooperate to protect the ozone layer by phasing out ozone-depleting substances (ODS). The Vienna Convention is mainly focussed on encouraging scientific efforts and cooperation to monitor and assess the state of the ozone layer.

OBJECTIVE

The objectives of the Convention are for Parties to promote cooperation by means of systematic observations, research and information exchange on the effects of human activities on the ozone layer and to adopt legislative or administrative measures against activities likely to have adverse effects on the ozone layer.

KEY ELEMENTS

The Vienna Convention is a framework treaty for controls development that also facilitates cooperation on research related to the ozone layer and the effects of ozone depletion.

The Vienna Convention requires Parties to undertake, as appropriate, research and scientific assessments of the physical and chemical assessments of the ozone layer, and the impacts on human health and other biological processes of ozone depletion and changes in ultra-violet solar radiation (UV-B).

EXPECTED RESULTS

Ensure the state of the ozone layer and the effects or ozone depletion are continually assessed, monitored and communicated.

Ensure the protection of the ozone layer through the adoption of legislative or administrative measures.

CANADA'S INVOLVEMENT

This agreement is important to Canada because the ozone layer protects the earth from harmful ultra-violet solar radiation (UV), which can cause skin cancer, cataracts, immune system deficiencies and detrimental effects on the environment and wildlife. UV radiation is the leading cause of skin cancer and accounts for about 1000 deaths per year in Canada. Canada's northern environment is particularly at risk from ozone depletion, as depletion occurs more intensely at the earth's poles.

Pursuant to the Vienna Convention, Parties agreed to the Montreal Protocol on Substances that Deplete the Ozone Layer, which obliges Parties to phase out their production and consumption of all ozone-depleting substances.

With respect to the Vienna Convention's provisions on scientific cooperation, Parties are required to undertake and share the results of their research, scientific assessments and monitoring. In addition, two scientific assessment panels were established, under the World Meteorological Organization (WMO) and the United Nations Environment Programme (UNEP): one to periodically assess the state ozone layer, and the other to assess the environmental effects of ozone depletion.

RESULTS / PROGRESS

Activities

At the international level, many countries have programs and networks in place to monitor the ozone layer. Based on information from these programs and networks, UNEP/WMO prepares a comprehensive report every four years on the state of the ozone layer. In addition, UNEP publishes a report every four years on the environmental effects of ozone depletion.

Canada has historically played a leadership role in operating a comprehensive ozone-monitoring program, which provides the international community with key information on the state of the ozone layer particularly over the Arctic, and in hosting the World Ozone and UV Radiation Data Centre. Canada maintains a network of Brewer Ozone Spectrophotometers, which measure the total thickness of the ozone layer (known as "total column ozone") and spectral UV irradiation several times per hour. In addition, balloons carrying ozonesondes are launched, usually once per week, into the stratosphere, in order to measure the altitude of the ozone layer above the surface of the earth.

In 1992, Canada developed the UV Index as a health protection tool for Canadians to measure the strength of the ultraviolet radiation to which they are exposed. The UV Index has been standardized by the World Health

Organization (WHO) and is now used by 100 countries around the world.

As a Party to the Vienna Convention, Canada is committed to supporting developing countries to carry out systematic observations of the ozone layer. In support of this capacity building effort, Canada donates reconditioned Brewer spectrophotometers to WMO. In addition, Canada provides complementary support through the Brewer Trust Fund, a multi-year contribution agreement with WMO. This fund is dedicated to capacity building through training, maintenance, calibration and upgrade of Brewer instruments in developing countries to support their ozone monitoring efforts.

Note: Activities related to the phase-out of ozone-depleting substances are described in the section on the Montreal Protocol on Substances that Deplete the Ozone Layer.

Reports

Scientific Assessment of Ozone Depletion: 2018

ECCC scientists actively participated in preparation of this report.

Results

A key result of the Vienna Convention has been the Montreal Protocol, which is playing a major role in restoring the ozone layer. Assuming continued full compliance with the phase-out of ozone-depleting substances under the Montreal Protocol, the ozone layer is expected to recover over most of the globe. This recovery is expected to occur before mid-century in mid-latitudes and the Arctic, and somewhat later for the Antarctic ozone hole. At present, the thickness of the ozone layer is about 2% below the 1980 benchmark levels on the global scale and about 3% below over northern mid-latitudes including most of Canada. The ozone layer over the Antarctic and Arctic continue to experience much higher rate of ozone depletion in the Spring.

In addition, the ozone layer is being continually monitored and assessed at the global level. There are dozens of organizations or projects around the globe, which monitor the ozone layer on a regular basis. The Earth System Research Laboratory, a division of the US government's NOAA organization, carries out research into the chemistry and dynamics of the stratosphere, with particular emphasis on processes that affect our ozone layer.

In addition, there is a Network for the Detection of Atmospheric Composition Change, which includes more than 70 remote-sensing research stations and a United Nations programme, which examines issues relating to both ozone levels and climate change.