1979–2004

Twenty-five Years of International Cooperation on the

Convention on Long-range Transboundary Air Pollution

Further information on the *Convention* may be obtained from the:

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LRTAP 25th Anniversary
Long-range Transboundary Air Pollution

United Nations Economic Commission for Europe

Introduction

For 25 years, many countries have worked together to address the environmental and health effects of air pollution under the landmark Convention on Long-range Transboundary Air Pollution — the first international agreement to recognize that regional solutions are needed to address the flow of air pollution across geographical borders.

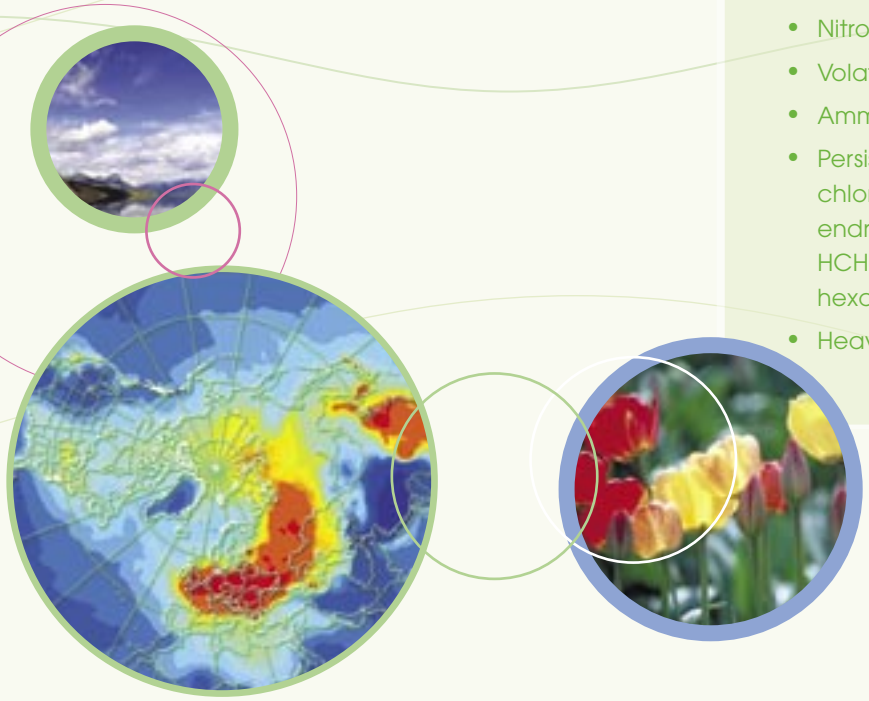
Adopted in 1979, the *Convention* established a broad framework for the United Nations Economic Commission for Europe (UNECE) region[1] to work cooperatively on the transport of pollutants through the atmosphere and over borders, oceans and continents.

The *Convention* includes a process for negotiating concrete measures to control pollutants through specific agreements called protocols. It also coordinates efforts on research, monitoring and the development of emission reduction strategies on regional air pollution.

This brochure, prepared by the Government of Canada in cooperation with other Parties to the *Convention*, highlights the achievements of the *Convention* and provides information on its current and future work.

Pollutants Covered under the *Convention*

- Sulphur dioxide
- Nitrogen oxides (NO_x)
- Volatile organic compounds (VOCs)
- Ammonia
- Persistent organic pollutants (POPs) (aldrin, chlordane, chlordecone, dieldrin, dioxins, endrin, hexabromobiphenyl, furans, mirex, PAH, HCH (or lindane), toxaphene, DDT, heptachlor, hexachlorobenzene, PCBs)
- Heavy metals (cadmium, lead and mercury)



[1] Europe, Central Asia and North America.

Twenty-five Years of Achievement:

A History of Success

The Convention on Long-range Transboundary Air Pollution is a unique example of a cooperative venture that brings together countries, regions and continents to implement effective action for cleaner air.

The link between sulphur emissions in continental Europe and the acidification of lakes in Scandinavia was first suspected by scientists during the 1960s. The link became more established in the 1970s, as evidence increasingly showed that pollutants could travel hundreds of kilometres from their point of emission to affect air quality and ecosystems far away.

In 1972, the United Nations Conference on the Human Environment in Stockholm took up the issue of international cooperation to combat acidification. This effort was strengthened by the results of several studies between 1972 and 1977 that confirmed the long-range transport of pollutants and pointed to the damage they do to health and the environment.

In November 1979, Ministers within the framework of the United Nations Economic Commission for Europe met in Geneva and adopted the *Convention on Long-range Transboundary Air Pollution*.

The *Convention* entered into force in 1983 and now has 49 Parties, including the European Community. It has been extended by eight specific protocols, of which seven are in force.

Parties and Signatories to the *Convention*

Armenia
Austria
Azerbaijan
Belarus
Belgium
Bosnia and Herzegovina
Bulgaria
Canada
Croatia
Cyprus
Czech Republic
Denmark
Estonia
Finland
France
Georgia
Germany
Greece
Holy See (Signatory only)
Hungary
Iceland
Ireland
Italy
Kazakhstan
Kyrgyzstan
Latvia
Liechtenstein
Lithuania
Luxembourg
Malta
Monaco
Netherlands
Norway
Poland
Portugal
Republic of Moldova
Romania
Russian Federation
San Marino (Signatory only)
Serbia and Montenegro
Slovakia
Slovenia
Spain
Sweden
Switzerland
The former Yugoslav Republic of Macedonia
Turkey
Ukraine
United Kingdom
United States of America
European Community

The Protocols

While the *Convention on Long-range Transboundary Air Pollution* sets a broad framework for action to stop air pollution, meeting its goals and objectives has been through setting concrete measures under a series of protocols that identify the need for Parties to carry out research and development, to exchange scientific and technical information, and to take part in monitoring programmes.

To promote such activities, the *Convention* has established scientific and technical programmes to improve understanding of the transport and effects of pollutants, and to provide the scientific foundation for decision making.

Each protocol addresses a specific pollutant, groups of pollutants or areas of concern, and together they cover nearly all of the major air pollutants. The protocols provide for reduction of emissions of sulphur dioxide, nitrogen oxides (NOx), volatile organic compounds (VOCs), heavy metals, persistent organic pollutants (POPs) and ammonia.

Since 1998, the compliance of individual Parties with their obligations under the protocols has been subject to regular review by an Implementation Committee established by the *Convention*'s Executive Body. This work has further strengthened the *Convention*'s work, by encouraging Parties to meet their commitments in a timely and effective way.

The Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone: Adopted in 1999, the Gothenburg Protocol sets emission ceilings to be achieved by 2010 for four pollutants: sulphur (as sulphur dioxide), NOx, VOCs and ammonia. The Protocol sets limits on specific emission sources, such as combustion plants, electricity production, dry cleaning, cars, paints or aerosols, and some specific ammonia sources. This protocol is expected to be in force by early 2005.

The Aarhus Protocol on Persistent Organic Pollutants (POPs): Adopted in 1998, the Protocol on Persistent Organic Pollutants (POPs) entered into force in October 2003. It bans the production and use of some substances outright, while scheduling others for elimination or severe restriction at a later stage.

The Aarhus Protocol on Heavy Metals: Adopted in 1998, the Protocol on Heavy Metals entered into force in December 2003. It focuses on cadmium, lead and mercury — heavy metals particularly harmful to human health and the environment.

The Oslo Protocol on Further Reduction of Sulphur Emissions: Adopted in 1994 and entering into force four years later, the Oslo Protocol aims at gradually attaining critical loads for acidification and setting long-term targets for reductions in sulphur emissions. It also emphasizes energy savings.

The Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes: In order to address a group of major air pollutants responsible for the formation of ground-level ozone, the Protocol entered into force in 1997.

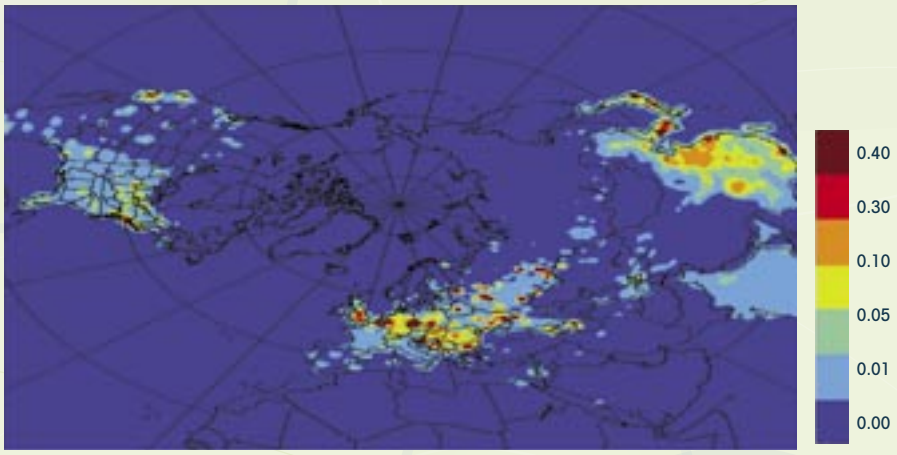
The Sofia Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes: Entering into force in 1991, the Protocol concerning the Control of Emissions of Nitrogen Oxides or their Transboundary Fluxes was adopted in Sofia in 1988. It requires Parties to ensure emissions of nitrogen oxides or their transboundary fluxes at the end of 1994 are not higher than those in 1987, and it requires establishment of critical loads and related emission reduction objectives with a timetable for action.

The Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent: Adopted in 1985, the Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes, by at least 30 per cent, entered into force in 1987. As a result of this Protocol, substantial cuts in sulphur emissions have been recorded in Europe.

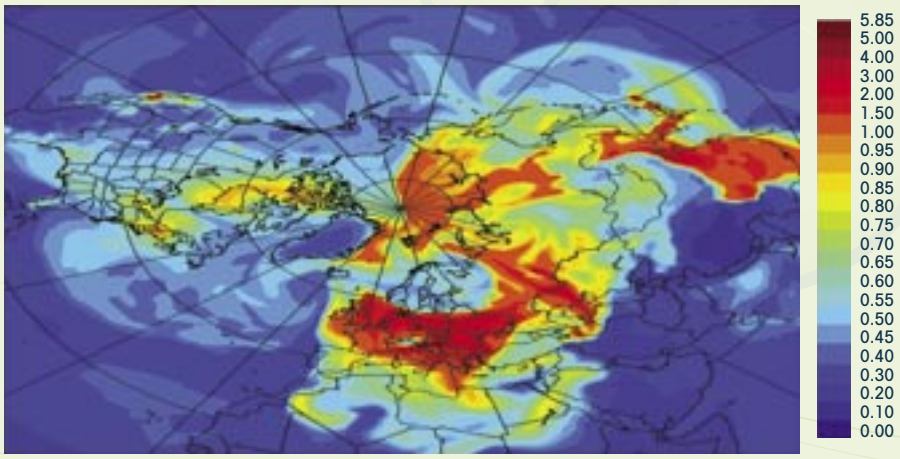
The Geneva Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP): The Protocol on Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) was adopted in 1984 and entered into force in 1988. It provides for international cost-sharing of the EMEP centres.

Science and Monitoring

Distribution of Total Gaseous Mercury (TGM) in Different Seasons



(a) Anthropogenic emissions 1990 (mg Hg/m^2/yr)



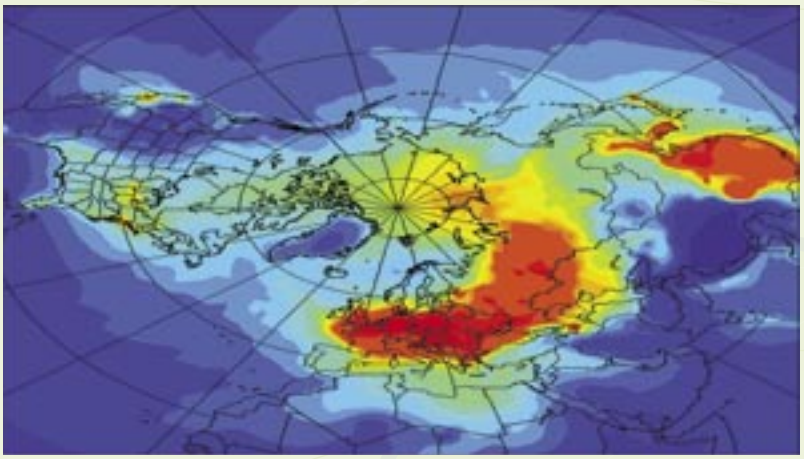
(b) Mercury episode January 16, 1997 (ng/m^3)

Strong science is a major reason for the success of the *Convention*. Experts from Europe and North America work together in a wide variety of ways, and results of their research and monitoring not only help design actions under the *Convention*, but often lead the way to domestic and sub-regional initiatives.

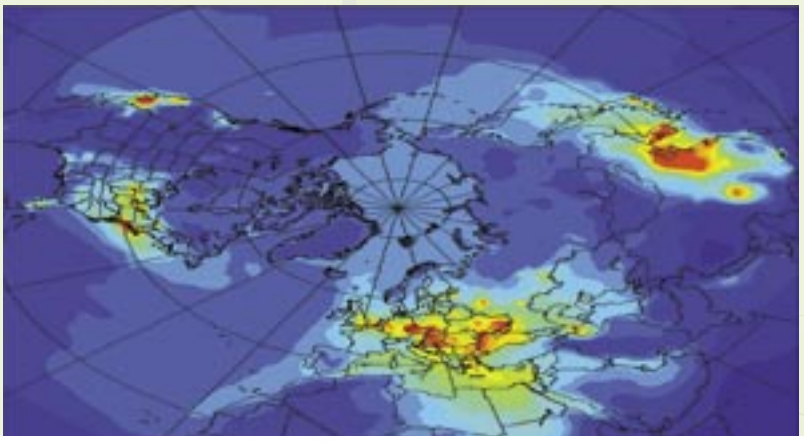
For its foundation science, the *Convention* relies on its Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP), and its Working Group on Effects. Each of these bodies has task forces and programme centres that provide information and results on particular topics.

EMEP provides sound scientific support in the areas of emission inventories and projections, atmospheric monitoring and modelling, and integrated assessment modelling. Results from the monitoring network, together with emission data and atmospheric transport modelling, have shown how air pollution moves through the atmosphere, and have made it possible to quantify the source–receptor relationships between countries and regions. This science is used by policy-makers to design actions across regions such as Europe and North America, as well as to address emissions in their own areas.

The **Working Group on Effects** has under it six International Cooperative Programmes (ICPs), and a Joint World Health Organization (WHO) – Executive Body Task Force



(c) Surface air TGM January 1997 (ng/m^3)



Science and monitoring help increase our understanding of the way pollutants move around the planet. Starting with the man-made emissions of mercury (a heavy metal) in 1990, these maps show the average concentrations of airborne mercury in the northern hemisphere for typical winter and summer months. The "mercury episode" was a day with particularly high levels of mercury in the air.