Air pollution and the Convention on Long-range Transboundary Air Pollution

Starting in the late 18th century, the industrial revolution caused an ever-growing need for energy and resources. As a result, pollution of the atmosphere, going alongside with threats to environment and health, became a highly visible, undeniable problem waiting to be solved.

As one answer to this situation, the Convention on Long-Range Transboundary Air Pollution (also: Convention on Air Pollution, CLRTAP) was opened for signature in November 1979 and came into effect about 3 years later in March 1983.

By now, the Convention - identifying the Executive Secretary of the United Nations Economic Commission for Europe (UNECE) as its secretariat - has 51 parties and addresses some of the major environmental problems of the UNECE region through scientific collaboration and policy negotiation and, during the years, has been extended by eight protocols that identify specific measures to be taken by Parties to reduce their emissions of air pollutants.

Aim of the Convention is that parties shall endeavour to limit and, as far as possible, gradually reduce and prevent air pollution including long-range transboundary air pollution. Parties develop policies and strategies to combat the discharge of air pollutants through exchanges of information, consultation, research, and monitoring.

Annually, the Parties meet at sessions of the Executive Body to review ongoing work and plan future activities including a work plan for the coming year. The three main subsidiary bodies - the Working Group on Effects, the Steering Body to EMEP and the Working Group on Strategies and Review - as well as the Convention's Implementation Committee, report to the Executive Body each year.

Currently, the Convention's priority activities include review and possible revision of its most recent protocols, implementation of the Convention and its protocols across the entire UNECE region (with special focus on Eastern Europe, the Caucasus and Central Asia and South-East Europe) and sharing its knowledge and information with other regions of the world.

Germany and the convention protocols

As mentioned above, the Convention on Long-Range Transboundary Air Pollution has, by now, been extended by eight protocols on the reduction of several pollutants such as Sulphur, Nitrogen Oxides or Volatile Organic Compounds. Germany, as a member of the CLRTAP, has signed each additional protocol.

The Geneva Convention…	**opened / put into force**
Geneva Convention on Long-Range Transboundary Air Pollution, CLRTAP	1979 / 1983
…and its Protocols	
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)	1984 / 1988
Helsinki Protocol on the Reduction of Sulphur Emissions or their Transboundary Fluxes by at least 30 per cent	1985 / 1987
Sofia Protocol concerning the Control of Nitrogen Oxides or their Transboundary Fluxes	1988 / 1991
Geneva Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes	1991 / 1997
Oslo Protocol on Further Reduction of Sulphur Emissions	1994 / 1999
Aarhus Protocol on Heavy Metals	1998 / 2003
Aarhus Protocol on Persistent Organic Pollutants (POPs)	1998 / 2003
Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone	1999 / 2005

Today, the last three protocols are the most relevant. All three of them have been updated to foster further reductions of air pollution towards the new milestones in 2020 and 2030.

Reduction obligations and reporting

Reporting of emission data to the executive body of the Convention on Long-Range Transboundary Air Pollution (CLRTAP) is

required in order to fulfil obligations of the protocols under the convention. Parties are required to submit annual national emissions of SO2, NOx, NMVOC, CO and NH3, particulate matter, various heavy metals and persistent organic pollutants (POPs) using the “Guidelines for Estimating and Reporting Emission Data” under the Convention. This process is underlined by activities to review the submitted information by independent experts.

The report at hand contains information on Germany's inventories for all years from 1990 to the latest reporting year including descriptions of methods, data sources, QA/QC activities carried out and a trend analysis. The inventory accounts for anthropogenic emissions of SO2, NOx, NH3, NMVOC, CO, TSP (Total Suspended Particulate matter), PM10 (particles of size <10µm), PM2.5 (<2.5µm), BC (Black Carbon), Pb, Cd, Hg, As, Cr, Cu, Ni, Se and Zn, PAH and dioxins. Emission estimates are mainly based on official German statistics, e.g. energy statistics, agricultural statistics and environmental reports from industry. The emission factors used are both nationally developed factors as well as internationally recommended ones. For details please refer to the sector-specific sections.

Germany uses the EMEP/EEA Air Pollutant Emission Inventory Guidebook for reporting to the Convention on Long-Range Transboundary Air Pollution (CLRTAP) and to the Economic Commission for Europe (UNECE). The methodologies used are to some extend also in accordance with the 2006 IPCC Guidelines for National Greenhouse Gas Inventories (IPCC Guidelines) and, in general, in line with Good Practice Guidance and Uncertainty Management in National Greenhouse Gas Inventories IPCC-NGGIP (IPCC Good Practice Guidance).

Besides its CLRTAP obligation and as an EU member state, Germany also has to report the full data set and this inventory report under the updated National Emissions Ceilings Directive (EU/2016/2284). Both submissions are fully aligned in format, timing and content. There are no differences when comparing the submissions presented under the LRTAP convention, the EU's NEC directive and the UNFCCC other than the minor and expected incompatibilities in the reporting of emissions from mobile sources (aviation and marine shipping).

National territory emissions

All of Germany’s emissions occur inside the EMEP grid domain. This excludes international aviation and maritime navigation as shown in methodical issues and laid out by the CLRTAP guidelines. There is only one offshore island (Helgoland) were all emission relevant activities are included in the national statistics used for the emission estimation. Thus, all numbers for national totals given are considered to be “real totals”.