

Convention on Long-range Transboundary Air Pollution

emep

*Co-operative programme for monitoring
and evaluation of the long-range
transmission of air pollutants in Europe*

EMEP Assessment
Part I
European Perspective

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Preface

The EMEP-programme under the Convention of Long-Range Transboundary Air Pollution has now been in operation for 25 years. A large amount of data is collected from measurements all over Europe. In addition, modelling of air pollution emissions, transports, transformation and deposition between countries is carried out and the information is used as basic documentation for the negotiations on emission reductions within the Convention.

The data have now been subject to an extensive assessment, in order to document the decrease in pollution levels from the end of the 1970s and until today and it's the reasons for the decreases in different parts of Europe. The assessment includes trends in emissions, atmospheric concentrations and deposition as a result of pollution control in Europe between 1980 and 2000. It also includes comparisons between emissions and measured and model-calculated data. The aim was to answer mainly three major questions:

What is the result of the emission reductions?

Extensive measures have been undertaken in order to reduce air pollution emissions during the period 1980 – 2000. This has resulted in reduced concentrations of pollutants in air and in reduced deposition over most parts of Europe. The first objective has been to study the magnitude in trends in relation to the emission decreases in Europe as a whole and in different nations.

What are the reasons behind the trends and are the trends in line with current understanding?

Air pollution emissions have decreased during the two decades due to active control measures, but decreases have also occurred due to other changes during the period. Parts of Europe have undergone economical and political restructuring, which in turn have had a significant influence on emissions. In addition, there has been a tendency of a slightly changing climate over the period, towards milder winters at least in parts of the area. This change has most certainly influenced the frequency of extreme air concentrations, but may also have influenced transport situations, precipitation patterns, etc. The aim of the assessment has been to separate the importance of factors behind observed trends and to find out whether the changes observed are in line with the current understanding.

What is the present status of environmental quality and what is the need for further actions?

Another important question is whether present levels of pollution have reached acceptable levels or if critical loads and levels for vegetation and health damages are still exceeded. The question has been answered in co-operation between the EMEP assessment and the parallel assessment made by the Working Group on Effects. The result of the assessment will form a basis for further negotiations within the Convention on Long-range Trans-boundary Air Pollution and a revision of the Gothenburg protocol in 2004 - 2005. The conclusions of this status assessment will form the basis for defining the further need for reductions.

The EMEP Assessment report consists of two parts. Part I of the assessment deals with the European perspective and is carried out for sulphur, nitrogen oxides, ammonia, base cations, ozone heavy metals, persistent organic components and particles. Part II contains the national assessments. The main part of the work is based on EMEP monitoring and model-calculated data available in the EMEP data base. It is also largely depending on the national assessments made by 20 countries. Furthermore, the evaluation made by NILU (Barett et al, 2000) which was a contribution from the Chemical Coordination Centre to the work on observed trends in sulphur and nitrogen in Europe 1978–1998 has served as background material for the assessment. The ozone evaluation is to a large extent also based on evaluations carried out in the scientific community mainly on EMEP data. Few countries have made thorough assessments of their EMEP ozone data. The European ozone pollution has been subject to many coordinated regional and continental studies. The ozone chapter is for this reason somewhat differently edited and the number of references to publications on the subject is far larger than in the other chapters.

The EMEP assessment was initiated and carried out as a joint task between 20 of the EMEP parties, the EMEP centres and the Swedish ASTA project. All EMEP centres - the Chemical Co-ordination Centre, the Meteorological Synthesising Centre West and the Meteorological Synthesising Centre East have been deeply involved. The Swedish ASTA-project “International and National Abatement Strategies for Transboundary Air Pollution” have contributed with personnel to the overall European evaluation and this part of the work could be regarded as a contribution in kind from Sweden.

National funding and the work carried out within the countries has been an important contribution to this assessment work. In addition, the Nordic Council of Ministers (NMR) financed a Nordic Baltic co-operation to carry out a regional assessment of the EMEP data in the Nordic and Baltic countries.

Most of the assessment has been carried out during 2002 - 2004 within the framework of the EMEP Task Force on Measurements and Modelling. The Part I and Part II reports are both available on the EMEP web site (www.emep.int). The printed Part II contains somewhat shortened versions of the national assessment than is available on the internet.

Main responsible for the assessment is Anton Eliassen with assistance of a support group Sergey Dutchak, Peringe Grennfelt, Øystein Hov and Sonja Vidic. Most of the work has been carried out by the editorial committee and a number of contributing authors. A list of authors is available. The editorial committee consisted of Gun Lövblad IVL, Sweden (leader), Leonor Tarrasón, MSC-W, Kjetil Tørseth, CCC and Sergey Dutchak, MSC-E. The draft has been subject to an internal review, mainly within the centres, and an external review via the EMEP Steering body.

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