



**Economic and Social
Council**

Distr.
GENERAL

EB.AIR/WG.1/2005/14
EB.AIR/GE.1/2005/13
EB.AIR/WG.5/2005/10
22 June 2005

ORIGINAL: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

EXECUTIVE BODY FOR THE CONVENTION ON
LONG-RANGE TRANSBOUNDARY AIR POLLUTION

Steering Body to the Cooperative Programme for Monitoring and Evaluation
of the Long-range Transmission of Air Pollutants in Europe (EMEP)
(Twenty-ninth session, Geneva, 5-7 September 2005)
Item 3 of the provisional agenda

Working Group on Strategies and Review
(Thirty-seventh session, Geneva, 26-30 September 2005)
Item 7 of the provisional agenda

Working Group on Effects
(Twenty-fourth session, Geneva, 31 August-2 September 2005)
Item 5 (ix) of the provisional agenda

FUTURE CONVENTION PRIORITIES

Summary report and conclusions of the workshop on Review and Assessment of European Air Pollution
Policies, prepared by the organizers with the assistance of the secretariat

Introduction

1. A workshop on Review and Assessment of European Air Pollution Policies took place on 25-27 October 2004 in Gothenburg (Sweden). It was organized by the International and National Abatement Strategies for Transboundary Air Pollution (ASTA) programme, in cooperation with the Nordic Council of Ministers and the European Commission's Clean Air for Europe (CAFE) programme. It was a follow-up to the workshop held in Saltsjöbaden (Sweden) in April 2000.

Documents prepared under the auspices or at the request of the Executive Body for the Convention on Long-range Transboundary Air Pollution for GENERAL circulation should be considered provisional unless APPROVED by the Executive Body.

2. The workshop was attended by 140 experts from: Austria, Belgium, Canada, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, India, Italy, Latvia, Netherlands, Norway, Poland, Portugal, Sweden, Switzerland, United Kingdom and United States. Representatives of the European Commission (Directorate General for Environment, the Clean Air for Europe (CAFE) programme and the Joint Research Centre) also attended the workshop. Representatives of the Meteorological Synthesizing Centre-East (MSC-East), the Meteorological Synthesizing Centre-West (MSC-West), the Centre for Integrated Assessment Modelling (CIAM) at the International Institute for Applied Systems Analysis (IIASA) and members of the secretariat were present. The International Union of Air Pollution Prevention and Environmental Protection Associations (IUAPPA), the European Academies Science Advisory Council (EASAC) and the Oil Companies' European Association for Environment, Health and Safety in Refining and Distribution (CONCAWE) were represented.
3. Mr. R. Maas (Netherlands), Ms. P. Farnsworth (Canada) and Mr. M. Williams (United Kingdom) chaired the workshop.

I.OBJECTIVES AND INTRODUCTION

4. The objective of the workshop was to review and assess the scientific basis and tools employed in the review of the Gothenburg Protocol and the development of the new CAFE strategy. It focused on:
 - (i) Objectives and targets related to health and environmental effects of air pollution in view of the scientific knowledge and scenario analysis for the review and possible revision of the Gothenburg Protocol and the EU national emission ceilings and air quality directives;
 - (ii) Policy options for the Convention and the CAFE programme in relation to development within the industry/energy/traffic sectors and other policy areas;
 - (iii) Need to support knowledge and scientific research;
 - (iv) Long-term targets.
5. The workshop consisted of plenary sessions with keynote presentations and working group sessions. The full report containing the conclusions of each working group session and the presentations made at the workshop are available at: http://asta.ivl.se/WORKSHOP_OKTOBER_2004.htm

II. GENERAL CONCLUSIONS AND RECOMMENDATIONS

A. General

6. The workshop recognized that large reductions of emissions, transboundary transport and deposition of SO_x, NO_x and volatile organic compounds (VOCs) had been achieved as a result of the Convention protocols, European Union (EU) directives and national legislation. For ammonia, however, the situation was less positive and emissions had only slightly decreased.

7. It was stressed that concern over the impact of particulate matter (PM) on human health had become the most important driving force for the development of air pollution abatement strategies within the Convention and CAFE.

8. The workshop agreed that, in spite of signs of significant improvement in some parts of Europe, the old problems of acidification and eutrophication of terrestrial and aquatic ecosystems, ozone damage to vegetation and human health persisted and would require further measures.

B. Particles

9. As recent research indicated that there was no threshold concentration for harmful effects of PM, it was agreed that a general reduction of exposure was needed.

10. The workshop participants concluded that different targets for strategies to reduce PM levels could be used. Both equity and efficiency had to be taken into account when developing strategies to reduce emissions and population exposure. Several specific policy options to reduce PM emissions were available such as limit values in the national emissions ceilings (NEC) directives and targeting urban low-level sources. Combinations of limit values and emission reductions would give favourable results in terms of reducing damage to health in the general population as well as in population groups in high-exposure areas. It was highlighted that uncertainties in efficiency were similar for different policy options (NEC/limit value). It was suggested that the issue of efficiency and equity of different policy options should be further discussed, e.g. through a specific workshop.

11. It was concluded that the scientific basis of the source-receptor relationships of PM needed to be strengthened in several areas such as: (i) emission inventories; (ii) formation and composition of secondary organic particles; (iii) chemical composition and size distribution of PM from different source categories and the effect of different abatement strategies on these parameters; and (iv) the relationship between chemical composition, size distribution and toxicity.

C. Hemispheric transport

12. The workshop concluded that the inclusion of hemispheric transport of pollutants within the framework of the Convention was scientifically motivated and policy relevant for European air quality. Future policy development in the field of air pollution should take this into account. It was reiterated that air pollution policies could benefit from exploring and exploiting commonalities with climate change policy.

13. The workshop also concluded that a framework for providing scientific support on hemispheric transport of air pollutants for policy development was needed. The main scientific issues in this respect included emission inventories, model development/assessment and measurements. It was recognized that much of the basic science was available but needed to be compiled and evaluated with air pollution policies in mind.

14. It was suggested that a task force on hemispheric transport be established within the framework of the Convention to take this issue further and develop mechanisms for inclusion of the hemispheric scale in air pollution strategies.

D. Nitrogen

15. The workshop recognized that it was difficult to solve the eutrophication problem in Europe because it was closely linked to agriculture and stressed that a long-term solution would require changes in the European agricultural policies.

16. Furthermore, it recognized that emission reduction strategies for nitrogen compounds (NO_x, NH₃) needed to be improved. It was stressed that nitrogen emissions continued to contribute to ozone and particle formation, eutrophication and acidification, while only limited progress in acidification recovery could be made with further reductions of SO_x.

17. Significant gaps in the understanding of nitrogen biogeochemistry were identified, especially regarding the fate of nitrate and ammonia deposited onto terrestrial ecosystems, since ecosystem impacts would be highly dependent on the rates of nitrogen transformations and uptake by organisms.

18. The workshop recommended that, as nitrogen was an environmental issue on local, regional and global scales, abatement strategies needed to be flexible and take into account these different scales.

E. “New” sources

19. It was concluded that off-road vehicles and machinery were not subject to any control in many countries, and further control measures could be considered for these categories. It was pointed out that an EU directive existed for new vehicles but older vehicles accounted for considerable emissions of NO_x and VOCs.

20. Workshop participants highlighted the increased importance of shipping as an emission source of SO_x and NO_x in Europe. While emissions from other sources had decreased, shipping emissions had increased. It was pointed out that measures to control shipping emissions were likely to be cost effective. Furthermore, emissions from aviation were also increasing and could be of importance, in particular with regard to hemispheric scale issues.

21. It was recommended that long-term policies needed to be developed to address these “new” sources. These policies could be based on measures such as assigning shipping and aviation emissions to countries (improved inventories), charging and/or providing incentives to both sectors to cut emissions and, for ships, providing land-based power supply while in port. It was recalled that EU and international policies for shipping emissions were being developed in three main contexts: the 2002 EU ship emissions strategy and marine fuel sulphur proposal, the 2005 Clean Air For Europe programme, and forthcoming revisions to the International Maritime Organisation's air pollution convention, MARPOL Annex VI.

22. It was stressed that interactions between climate change and air pollution issues needed to be identified and dealt with in policy and science. This included synergies in policies as well as in transport and effects of air pollutants.

F. Developments in science and policy tools

23. The workshop agreed that the continuous development of the scientific understanding of air pollutant emissions, transport and impacts had been crucial for the development of new modelling tools and air pollution strategies. Results from existing European networks for monitoring air pollutants and their effects within Convention bodies had also played an important role in this process. The most recent developments in this respect included:

- (a) The use of dynamic models for acidification and ozone uptake/flux models for the

effects on vegetation in the integrated assessment work within the Convention and CAFE had led to more detailed and accurate descriptions of ecosystem damage and recovery;

(b) New results from epidemiological research had further strengthened the importance of the effects of PM on health;

(c) The EU funded research project MERLIN had presented preliminary results of an integrated assessment of European air pollution. It was important that alternative and complementary research and assessments were undertaken in order to increase reliability and legitimacy of the CAFE strategy;

(d) The methodology of Cost Benefit Analysis for air pollutants had been improved and is currently being applied in the CAFE programme;

(e) The unified EMEP model had proven to be of better quality and more flexible than previous regional air pollution models. This development and the introduction of 50x50 km grid system had led to more accurate source-receptor determinations as well as more detailed and accurate descriptions of the effects on ecosystems;

(f) Considerable efforts had been made to improve the RAINS modelling system including the development of baseline scenarios for individual countries and coupling of measures to reduce climate gases and pollutants;

(g) Non-linearities in atmospheric transport and deposition of pollutants had been identified and described.

24. To meet the requirements for future air pollution policy development, the workshop identified the following needs for research and monitoring:

(a) Sources, formation and composition of fine particles and their impact on human health;

(b) Nitrogen biogeochemistry and links to carbon cycling. Dynamic models that can be used for developing control strategies;

(c) The implementation of the EMEP monitoring strategy and other measurement and data collection activities in order to support the more advanced models and policy needs identified by recent and ongoing scientific research;

- (d) Identifying realistic scenarios for post-Kyoto emission reduction strategies;
- (e) Synergies between air pollution policies and policies to reduce climate gas emissions including the influence of climate change on emissions, transport and impacts of air pollutants;
- (f) The role of hemispheric and global transport of air pollutants and toxic substances.