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OVERVIEW OF THE WORK-PLAN OF THE CONVENTION

Prepared by the Bureau of the Executive Body in collaboration with the secretariat

Introduction

1. The Executive Body at its eighteenth session acknowledged the benefits of a more advanced, longer-term planning of the activities of its subsidiary bodies and invited the Steering Body of EMEP and the Working Group on Effects to prepare their medium-term programmes for the period 2001-2004 for review of the protocols and to submit them to it for consideration at its nineteenth session (ECE/EB.AIR/71, para. 80).
2. In preparation for reporting to the Executive Body, medium-term work-plans, priorities and strategies were discussed by the Working Group on Effects at its twentieth session in August 2001 (EB.AIR/WG.1/2001/4 and 5), and the EMEP Steering Body at its twenty-fifth session in September 2001 (EB.AIR/GE.1/2001/9).

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3. This document considers the requirements of the Executive Body for the review of the recent protocols, the bodies contributing to the work and the individual work-plan elements. The plans of the Working Group on Effects and the Steering Body of EMEP should be consistent with the Executive Body's requirements.

## **I. TIMESCALES FOR REVIEWS**

4. The three protocols that are likely to require review within the next few years are the 1998 Protocol on Heavy Metals, the 1998 Protocol on Persistent Organic Pollutants (POPs), and the 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone. Each protocol will enter into force on the ninetieth day following the date on which the sixteenth instrument of ratification, acceptance, approval or accession has been deposited. However, the timing of the review, as detailed in review clauses to each, is different for the three protocols:

(a) The 1998 Protocol on POPs indicates that the first review should be complete no later than three years after entry into force;

(b) The 1998 Protocol on Heavy Metals specifies no time constraint on the review process, though indicates that the procedures, methods and timing are to be decided at a session of the Executive Body. Implicitly the review will take place after entry into force;

(c) The 1999 Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) requires that the first review shall commence no later than one year after the date of its entry into force.

5. The need for reviews of earlier protocols was drawn to the attention of the Executive Body at its eighteenth session (ECE/EB.AIR/71, paras. 60 and 61). The Executive Body, while taking note of the deliberations of the thirty-second session of the Working Group on Strategies and Review, agreed (a) that negotiations on the Gothenburg Protocol served the purpose of review of the 1991 Protocol concerning the Control of Emissions of Volatile Organic Compounds or their Transboundary Fluxes, and (b) that the future review of the Gothenburg Protocol would be considered as fulfilling the requirements of further reviews of the 1994 Protocol on Further Reduction of Sulphur Emissions.

6. At the time of preparation of this document the Protocol on POPs had been ratified, accepted or acceded to by 7 Parties, the Protocol on Heavy Metals by 10 Parties and the Gothenburg Protocol by one Party. However, in response to the questionnaire for the 2000 Review of Strategies and Policies (EB.AIR/2000/1/Add.1, paras. 729 to 780) a further 12 Parties indicated ratification of the Protocol on POPs in 2001 or 2002, and a further 10 Parties indicated they would ratify the Protocol on Heavy Metals in the same period.

## II. BODIES PROVIDING INPUT FOR REVIEWS

7. The general requirements for the reviews of the Protocol on Heavy Metals and the Protocol on POPs have already been drawn to the attention of the Working Group on Strategies at its thirty-second session in the secretariat's paper on the review of protocols (EB.AIR/WG.5/2000/1). The elements for the review of the Gothenburg protocol have been considered by the Working Group on Effects and the Steering Body of EMEP and by their task forces. It is clear that in-depth reviews of each of the protocols will require a significant effort from all the subsidiary bodies of the Convention, from Parties, and from the various programme centres operating under the Convention. However, the scope of the reviews, and the bodies that will be involved in the collection and preparation of information for each, are likely to be very different for the three protocols.

8. For the Protocol on POPs, the review may draw upon past deliberations of workshops under the Working Group on Effects where it had been concluded that a risk assessment rather than a critical threshold approach might be best for future action on POPs. The Task Force on the Health Aspects of Air Pollution has plans to assess the health risks of selected POPs in the near future, while the expert group on the assessment of POPs will review and assess data for new POPs that may be added to the Protocol. The latter may also be able to contribute to new knowledge and/or data on the POPs covered by the existing Protocol. The International Cooperative Programme on Assessment and Monitoring of Acidification of Rivers and Lakes (ICP Waters) plans an assessment of POPs in aquatic biota in 2004. The EMEP centres are involved in modelling the movement of POPs (Meteorological Synthesizing Centre-East (MSC-E)), providing guidance for the measurement of POPs (Chemical Coordinating Centre (CCC)), and collecting information on emissions (Meteorological Synthesizing Centre-West (MSC-W)). The Task Force on Measurements and Modelling (TFMM) and the Task Force on Emission Inventories and Projections (TFEIP) review and report on these activities to the EMEP Steering Body.

9. For the Protocol on Heavy Metals, the same centres and task forces of EMEP will provide input as for the review of the Protocol on POPs. With regard to effects, there are more task forces and centres under the Working Group on Effects that may be able to contribute to the review, e.g. the International Cooperative Programme on Air Pollution Effects on Natural Vegetation and Crops (ICP Vegetation), the International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests), and the International Cooperative Programme on Integrated Monitoring of Air Pollution Effects on Ecosystems (ICP IM). An important issue for the review to consider, as required under article 10, paragraph 3 (b) (iii) of the Protocol, is the extent to which a satisfactory basis exists for the application of an effects-based approach. The International

Cooperative Programme on Mapping Critical Levels and Loads has been investigating the feasibility of mapping critical loads for heavy metals with a view to helping develop an effects-based approach for emission controls analogous to that used for sulphur and nitrogen emissions. The Working Group on Effects should decide if suitable maps can be made available, while TFMM needs to ensure the availability of adequate transport models. In addition, the Task Force on Integrated Assessment Modelling (TFIAM) and its Centre for Integrated Assessment Modelling (CIAM) will need to report on the availability of all necessary elements for integrated assessment. Expert groups under the Working Group on Strategies and Review may report on economic aspects and on the need to revise the technical measures specified in the annexes to the Protocol.

10. For the 1999 Gothenburg Protocol, the EMEP Steering Body and the Working Group on Effects are already planning their work on acidifying and eutrophying substances, as well as on ozone and its precursors and, as an additional consideration, particulate matter. All expert groups, task forces, programmes and centres of all three main subsidiary bodies will contribute to the review of this Protocol, though the level of work for each will vary. Inputs might best be considered through the individual work-plan elements as outlined in EB.AIR/GE.1/2001/9 and EB.AIR/WG.1/2001/5. These are considered in outline below. In particular, the work of the Network on Economic Benefits and Economic Instruments (NEBEI) may have an important role to play in the review of the obligations for some pollutants, while other expert groups under the Working Group on Strategies and Review could review the technological developments and determine the need to revise inputs to models as well as to revise the technical annexes and the guidance documents to the Protocol.

### **III. WORK-PLAN ELEMENTS FOR THE REVIEW OF THE GOTHENBURG PROTOCOL**

11. The Steering Body of EMEP at its twenty-fifth session discussed the elements of its work-plan for 2002 and the priorities for its longer-term work-plan up to 2004 (EB.AIR/GE.1/2001/9), including the responsibilities of its task forces and centres and the dates for deliverables. Similarly, the Working Group on Effects at its twentieth session discussed its medium-term work-plan up to 2004, including the responsibilities of its task forces and designated centre and the dates for deliverables (EB.AIR/WG.1/2001/5). Documents for both subsidiary bodies include tables outlining deliverables and the bodies responsible for them for the years 2003 and 2004.

12. It should be noted that the review process envisaged by these subsidiary bodies, which is in keeping with past deliberations of the Executive Body, is ambitious and seeks to move the effects-based approach forward from that used for the Gothenburg Protocol in several scientific areas. Even so, at a very simple level, a review of the Protocol and its obligations could use the same approach, and even the same data and models, as applied in deriving the national obligations defined in the Protocol's annexes. Attention should still be drawn to advances in scientific and technical knowledge, though if these were not sufficiently advanced they should not be used for reviewing progress. From this simplest level it is possible to envisage increasing levels of complexity that might be achieved through adding increasing numbers of revised or new elements. The scientific and technical elements that could be included in the review are (with the responsible bodies in parentheses):-

- (a) A revised integrated assessment model or models that incorporate one or more of the scientific elements below (CIAM and TFIAM);
- (b) A revised (Eulerian) pollutant transport model to replace the (Lagrangian) model used for the Gothenburg Protocol (TFMM, MSC-W, CCC);
- (c) Revised emission inventory data (TFEIP, MSC-W);
- (d) Measurements and modelling of particulates (TFMM, MSC-W, CCC);
- (e) Improved modelling of ammonia transport and estimation of ammonia emissions (TFMM, CCC, MSC-W, expert group on ammonia, TFEIP);
- (f) Revised ozone modelling with the new Eulerian model (MSC-W) to provide comparison with subparagraph (g);
- (g) New, level II, critical levels of ozone for vegetation (ICP Vegetation);
- (h) Agreed dose-response relationships (critical levels) for particulates to relate to modelled particulate data from (d) above (TF Health and CIAM);
- (i) Revised critical loads maps for acidity using revised criteria (ICP Mapping and Coordination Center for Effects) (CCE);
- (j) New critical loads maps for nutrient nitrogen using revised criteria (ICP Mapping and Coordination Center for Effects) (CCE);
- (k) European scale dynamic models for acidification and eutrophication (Joint expert group on dynamic modelling and TF Mapping and CCE in association with other ICPs);
- (l) Cost curves for particulates (Parties and CIAM);
- (m) Link to urban scale modelling for particulates (MSC-W);
- (n) Stock-at-risk maps for vegetation (ICP Vegetation, TF Mapping and CCE);
- (o) Stock-at-risk maps for buildings and cultural heritage (ICP Materials);
- (p) Revised economic assessment of human health, buildings and cultural heritage, crops, and ecosystems (NEBEI in collaboration with the Working Group on Effects task forces and centres)

- (q) Hemispheric scale monitoring and modelling (CCC, CIAM, MSC-W, CCE and ICPs);
- (r) Links to climate change impacts (CIAM, MSC-W, CCE, ICP IM, ICP Waters, ICP Forests);
- (s) Development of scenarios for energy, traffic and agriculture for 2010, 2015 and 2020 (CIAM, TFEIP, TFIAM).

13. The above list is not exhaustive and is not intended to be in any priority order. Neither does it provide details of each element. However, it does give an indication of the scale of the issues to be solved and the amount of work to be done if the highest ambition levels are to be achieved. It should be stressed that, while some items on the list are already part of well-planned ongoing activities (e.g. subparas. (c), (i)) others require scientific and technical progress. For the latter, the outputs and deliverable dates are poorly defined and may even be unachievable. Most items are dependent on adequate resources being available (see chap. IV below).

14. At the twenty-fifth session of the EMEP Steering Body (EB.AIR/GE.1/2001/2), the Chairman of TFIAM noted that the proposed work-plan was only feasible if the necessary inputs arrived in time. He identified the following possible bottlenecks related to the quality of emissions data: the development of source-receptor matrices based on the Eulerian model; the developments in dynamic ecosystem modelling; the remaining uncertainties in the fine particles that cause health effects; the development of scenarios for energy and agriculture; and the influence of transcontinental fluxes. He reiterated this message at the thirty-third session of the Working Group on Strategies and Review (EB.AIR/WG.5/70).

15. The Working Group on Effects at its twentieth session (EB.AIR/WG.1/2001/2) noted its medium-term work-plan was ambitious and demanding. Several delegations drew attention to the need to prioritize, speed up, or address the resourcing of certain activities to meet the needs of the Executive Body and work-plans of the other subsidiary bodies. It was felt that more attention needed to be paid to mapping stock at risk and developing dynamic models. In addition, it was suggested that dynamic model development on the European scale could take more time than the timetable envisaged.

16. While the medium-term work-plan extends until 2004, this is not much time for the work to be completed. Furthermore, the work-plans of the Working Group on Effects and the Steering Body of EMEP implicitly suggest that deliverables are completed for reporting to the sessions of those bodies in each year (August-September). Optimistically, it might be assumed that deliverables are prepared in readiness for the appropriate task force meetings that are held earlier in the year and that results are made available on a preliminary basis to other groups, prior to the

sessions of the Working Group on Effects and the EMEP Steering Body. Even then, it is clear that some deliverables, such as final critical loads maps, final dynamic modelling results and final critical levels for ozone maps, may not be ready in time for integrated assessment modelling runs in 2004. A joint meeting of the Bureaux of the Working Group on Effects and the Steering Body of EMEP is planned for February 2002 to consider such issues.

#### IV. RESOURCES AND PRIORITIES

17. An important consideration for the achievement of the work-plan elements is the provision of adequate funding for the international centres to carry out the necessary work within the timescales identified. The Executive Body should note that completion of many individual elements might only be assured if adequate resources are made available. The need for resources will vary between the different work elements. In addition, it should be stressed that for some elements the work is dependent upon scientific research, so there will be a need to retain some flexibility over the final application of the output from the work element to the review.

18. It is premature to define precisely the scope and level of complexity of each review, since the Executive Body will need to decide this only following the entry into force of a protocol, and the dates for entry into force of all three protocols are uncertain. However, it is important to pursue the goals of the medium-term work-plan now, as scientific and technical developments will take time. Moreover, it is essential to agree priorities to promote the success of the medium-term work-plan.

19. Besides individual national priorities, considerations that may determine priorities include:

- (a) The economic and social importance of the different effects;
- (b) The complexity of the work, the availability of data and the likelihood of achieving success;
- (c) The adequacy of resources for achieving success within a reasonable time;
- (d) The importance of the work in relation to reducing uncertainties in defining emission reduction obligations;
- (e) Subregional priorities regarding effects.

20. The Executive Body is invited to agree upon its priorities for future work, both with regard to the reviews of the three protocols and with respect to the possible individual elements for each review. It may wish for the coordination of individual elements to be considered in more detail by appropriate experts.