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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)

REPORT ON THE TWENTY-FOURTH SESSION

Introduction

1. The Steering Body held its twenty-fourth session in Geneva from 4 to 6 September 2000.
2. The session was attended by representatives from 26 Parties to the Convention: Austria, Canada, Croatia, Cyprus, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Netherlands, Norway, Poland, Portugal, Russian Federation, Slovakia, Slovenia, Sweden, Switzerland, Turkey, Ukraine, United Kingdom, United States and the European Community.
3. Representatives from the World Meteorological Organization (WMO), the four EMEP Centres (Centre for Integrated Assessment Modelling (CIAM), Chemical Coordinating Centre (CCC), Meteorological Synthesizing Centre-East (MSC-E), and Meteorological Synthesizing Centre-West (MSC-W)), the European Experiment on the Transport and Transformation of Environmentally Relevant Trace Constituents in the Troposphere over Europe (EUROTRAC) and the World Conservation Union (IUCN) also attended.
4. Mr. Martin WILLIAMS (United Kingdom) chaired the meeting.

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.

I. ADOPTION OF THE AGENDA

5. The provisional agenda as contained in document EB.AIR/GE.1/2000/1 was adopted.

II. ADOPTION OF THE REPORT ON THE TWENTY-THIRD SESSION

6. The Steering Body adopted the report on its twenty-third session (EB.AIR/GE.1/1999/2).

III. MATTERS ARISING FROM THE SEVENTEENTH SESSION OF THE EXECUTIVE BODY FOR THE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION AND RECENT SUBSIDIARY BODY MEETINGS

7. The Chairman drew the Meeting's attention to the relevant discussions and decisions arising from the seventeenth session of the Executive Body, including the reorganization of work following the adoption of the Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone. He outlined the mandate of the EMEP Steering Body adopted by the Executive Body. He also highlighted the importance of the creation of the new Task Force on Measurements and Modelling and the move of the Task Force on Integrated Assessment Modelling. Both would report to the EMEP Steering Body in the future.

8. The Chairman of the Working Group on Strategies and Review, Mr. R. BALLAMAN (Switzerland) reported on the thirty-second session of the Working Group, which had taken place from 28 August to 1 September 2000. He outlined the new remit of the Working Group and its deliberations on its work-plan for the next three-five years. He stressed the importance of the work on fine particulates, and on heavy metals and persistent organic pollutants (POPs), particularly regarding the provision of accurate emission inventories. He emphasized the Working Group's recognition of the need to collaborate with the European Community, through the Clean Air for Europe (CAFE) programme, and with North America. He noted the progress in deciding upon a future mechanism for funding those core activities that were outside the EMEP Protocol, i.e. integrated assessment modelling and effect-oriented activities, and outlined the future proposals to be submitted to the Executive Body.

9. The secretariat summarized the discussions held, and decisions taken, at the recent nineteenth session of the Working Group on Effects of relevance to the EMEP Steering Body. Special reference was made to the further development of the cooperation between the EMEP Steering Body and the Working Group on Effects and the closer links established between the effects programmes and the EMEP Centres. In particular, the effective use of EMEP deposition data and information in the effect-oriented activities was noted, as was the provision of

information on cause-effect relationships and data on stock at risk for integrated assessment modelling.

10. Mr. L. LINDAU (Sweden), Chairman of the Workshop on future needs for air pollution strategies held in Saltsjöbaden, Sweden on 10-12 April 2000, introduced its report (EB.AIR/GE.1/2000/3). He noted the conclusions of the workshop and their relevance to the Steering Body and recommended that they should be taken into account in the discussions on the future work-plan. The organizers were distributing the proceedings of the workshop.

IV. ACTIVITIES OF THE EMEP STEERING BODY'S BUREAU

11. The chairman introduced the report of the EMEP Steering Body's Bureau (EB.AIR/GE.1/2000/4), which described the deliberations of the Bureau prior to the Steering Body's meeting. The Steering Body took note of the report.

V. EMEP LONG-TERM STRATEGY

12. The Chairman of the Steering Body presented the proposal by the Bureau for an EMEP strategy for 2000-2009 (EB.AIR/GE.1/2000/5). He reminded delegations of their discussions at the thirtieth and thirty-first sessions of the Steering Body that had provided the basis for the proposal. He also informed the Steering Body that he had received a number of comments on the text from the Bureau of the Working Group on Effects to clarify the roles of the two bodies and the areas of collaboration.

13. Many delegations praised the quality of the document and provided some detailed and general comments. Several delegations suggested clarifying the description of the work on urban air quality. It should become clear that the focus of EMEP, including the monitoring strategy, remained at the long-range transmission of air pollutants. However, it was important for EMEP to conduct the modelling work, in particular the integrated assessment modelling, in a way that also took account of the health effects on the urban scale. It was also suggested that the Chairman of the Task Force on Integrated Assessment Modelling should be invited to elaborate the sections on integrated assessment modelling that were at present not sufficient to reflect the priority attached to this new area of work within EMEP. Furthermore, a delegation suggested inserting a new section on cooperation between EMEP and North American activities. It was also proposed that it should be made clear that the requirements for further work listed in each section reflected some priority assessment.

14. The representative of WMO informed the Steering Body that the Global Atmospheric Watch (GAW) was undergoing a similar exercise to draw up by the end of the year a strategic plan for the 2001-2007 period. He suggested that the EMEP strategy should be presented to GAW in

view of the close link between the two programmes. The EMEP Strategy would be reviewed to ensure compatibility.

15. The Steering Body:

(a) Requested the secretariat to incorporate the proposed changes, both the general comments reflected above and the detailed comments, into the document;

(b) Adopted the strategy with these amendments, noting that the document should be a living product, which would be frequently updated as work progressed;

(c) Agreed that the revised strategy should be presented to the Executive Body for approval; and

(d) Requested the secretariat to examine ways of publishing the strategy in order to widely disseminating it within the framework of the Convention and all cooperating partners.

VI. EMISSIONS

A. Present status of emissions

16. Ms. L. TARRASÓN of MSC-W introduced the note on the present state of emission data (EB.AIR/GE.1/2000/6), drawn up in collaboration with the secretariat, and the MSC-W note on emission data (EMEP MSC-W note 1/00). She stressed the great improvement in emission data reporting, but highlighted some deficiencies that undermined the modelling work at the EMEP Centres. The problems included the late submission of data by most Parties, the failure of many Parties to report gridded emission data and the insufficiency in reporting of heavy metals and POPs emission data, both in terms of quantity and quality. MSC-W asked the Steering Body for guidance on the question of availability of the emission data to be able to determine at what stage in the process, and at what level of detail, data could be made public on the Internet.

17. The MSC-W also informed the Steering Body of a coordinated European programme on particulate matter emission inventories, projections and guidance, funded jointly by the European Environment Agency (EEA) and EMEP (through the Trust Fund and voluntary contributions from the Netherlands and Switzerland). The work carried out by the Netherlands consultancy TNO aimed at supporting the national emission inventories of particulate matter (PM) for the year 2000. As a first step, previous work by TNO would be updated to establish a European inventory for 1995. Subsequently, guidance material to support the inventory work by national experts would be put together to allow Parties to report PM data for the year 2000 in 2001.

18. The Steering Body:

- (a) Took note of the report on the status of emission data (EB.AIR/GE.1/2000/6) and of EMEP MSC-W note 1/00, expressing its satisfaction with the development of the emission database;
- (b) Urged Parties that had not yet been able to do so to present complete emission data reports and to submit their reports on time;
- (c) Requested MSC-W to make all officially submitted emission data publicly available as soon as the basic consistency checks had shown that the data were of acceptable quality;
- (d) Reiterated that the emission data quality was checked by MSC-W and the secretariat for consistency and completeness and that any problems had to be solved in cooperation with the national experts.

B. Task Force on Emission Inventories and Projections

19. Mr. M. WOODFIELD (United Kingdom), Chairman of the Task Force on Emission Inventories and Projections, presented its report (EB.AIR/GE.1/2000/7), including the results of its ninth meeting held in Rome on 15-18 May 2000. The meeting was held jointly with the European Information and Observation Network (EIONET) and this should continue. Mr. Woodfield drew the attention of the Steering Body to the broad participation at the Task Force's meeting and its achievements in 2000. He stated that the Task Force was ready to incorporate the reporting requirements of integrated assessment modelling and give high priority to coordinating reporting work under different international bodies. New material for the atmospheric emission inventory guidebook should be approved for the electronic release of the third edition of the EMEP/CORINAIR Guidebook. The Task Force had also recommended that reporting in 2000 should be as in 1999. A special workshop would be organized in January 2001 to prepare a revision of the reporting guidelines, and to address the important issue of harmonizing the reporting of emission data to different organizations.

20. Ms. L. TARRASÓN (MSC-W) and Mr. M. AMANN of the Centre for Integrated Assessment Modelling (CIAM) at the International Institute for Applied Systems Analysis (IIASA) presented a joint note by CIAM and MSC-W (EMEP MSC-W note 8/00). The note outlined directions for developing reporting requirements to meet the needs of both atmospheric modelling and integrated assessment modelling. The note also set out the need for Parties to report activity data as well as emissions data. This would greatly help improve integrated assessment models as well as provide more consistency checks for emission inventories. The note had also been drafted to take into account the needs of Parties and their limited resources for reporting. To

simplify previous guidelines it was proposed not to continue to request large amounts of data at the SNAP 2 level, but to add a few sub-sectors to the 11 main source sectors of information which were crucial to modelling work. The set of key national input data requested every five years would include gridded data, the vertical distribution of emissions, specific characteristics of large point sources and some activity data (economic, energy, road transport and agriculture) for the base year and projections at five-year intervals. Most of the new data requested would be aligned with reporting requirements of other bodies, such as the United Nations Framework Convention on Climate Change, EEA and the Statistical Office of the European Communities (EUROSTAT). Any additional data used in modelling would be compiled by the EMEP Centres from public sources and presented to Parties for comment.

21. Several delegations welcomed the proposals made and stressed the need for harmonizing data requests by different bodies in order to keep work at the national level manageable. Some delegations suggested that there was a need for work on the verification of emission data and proposed that the planned workshop should take up this topic and consider, *inter alia*, the possibility of external auditing of emission data. It was recommended that the workshop should also take due account of the dual purpose of emission reporting: scientific assessments and compliance review.

22. The Steering Body:

(a) Took note with appreciation of the report by the Task Force on Emission Inventories and Projections, endorsed its recommendations (EB.AIR/GE.1/2000/7, para. 5) and invited the Task Force to study ways of making available a Russian translation of the latest version of the Guidebook;

(b) Also took note of the joint note by CIAM and MSC-W, thanked the Centres for their initiative and invited the Chairman of the Task Force on Emission Inventories and Projections to use the note as a basis for the workshop on the revision of the emission reporting guidelines. It looked forward to receiving the report of the workshop at its twenty-fifth session, when proposals would be put forward on emission reporting.

VII. MAIN SCIENTIFIC ACTIVITIES

A. Particulate matter

23. Mr. R. GEHRIG (Switzerland) reported on the EMEP/WMO Workshop on emissions, measurements and modelling of fine particulates (EB.AIR/GE.1/2000/9) held in Interlaken, Switzerland, from 22 to 25 November 1999. He outlined the many important conclusions of the Workshop and drew attention, in particular, to the need for: a good particulates emission inventory; giving first priority to PM10 measurements; and harmonizing measuring methods for

PM10 and PM2.5. He noted the benefits of developing “superstations” for detailed measurements and the importance of collaborating with organizations such as WMO.

24. Ms. L. TARRASÓN of MSC-W reviewed the work of the Centre, focusing on fine particulate reporting. She noted the importance of total mass, chemical composition, size distribution and the number of particles in each size fraction, and described modelling activities for primary particulates, and secondary aerosols, both organic and inorganic. She noted the uncertainties in the present calculations and stressed the need for coordinated measurements of particulate mass and chemical speciation of the aerosols.

25. Mr. O. HOV of CCC noted that the Centre’s work was extending its areas of interest and emphasized its new requirements. He drew attention to reports EMEP/CCC- Report 1/2000 and EMEP/CCC-Report 5/2000, described the results reported and stressed the need to further develop the monitoring strategy for particles, which would be discussed at the meeting of the Task Force on Measurements and Modelling in October 2000. He drew attention to the conclusions of the Interlaken Workshop, suggesting that some should receive immediate attention, in particular those on measuring particles such as PM10 and carrying out chemical speciation.

26. The Steering Body:

(a) Noted with appreciation the report of the EMEP/WMO Workshop and thanked Switzerland for hosting the Workshop;

(b) Expressed its appreciation to MSC-W and CCC for their work on fine particulates, took note of the reports presented and recognized the excellent progress made in this area;

(c) Identified the need for continued work on fine particulates, one of the priorities set by the Executive Body and the Working Group on Strategies and Review, and requested the Centres to continue their activities on further model development, improved measurements and emission inventories, and the further development of integrated assessment models;

(d) Looked forward to the presentation at its twenty-fifth session (in 2001) of the report of the Task Force on Measurements and Modelling, and in particular its discussions on a monitoring strategy for particulate matter;

(e) Recognizing the importance of fine particulates, invited the Working Group on Effects and its Task Force on the Health Aspects of Air Pollution to consider the characteristics of aerosols that were of importance to provide a better focus for future EMEP work.

B. Heavy metals and persistent organic pollutants

27. Mr. S. DUTCHAK of MSC-E presented an overview of the Centre’s activities over the past year. He highlighted the intensive cooperation with the Parties and with other international

organizations. Mr. Dutchak also presented the report (EB.AIR/GE.1/2000/8) on the joint EMEP/WMO/UNEP Workshop on the modelling of atmospheric transport and deposition of POPs and heavy metals held in Geneva on 16-19 November 1999, including its conclusions and recommendations. He stressed the importance of the Workshop for further work on heavy metals and POPs.

28. Mr. A. RYABOSHAPKO of MSC-E reported on progress in the modelling work on heavy metals and presented the report on transboundary heavy metals pollution in Europe (EMEP report 3/2000) prepared together with CCC, the progress report on the intercomparison study of numerical models for long-range atmospheric transport of mercury, and the note on uncertainty analysis of long-range heavy metals transport modelling (EMEP/MSC-E technical note 9/2000). Plans for further work included: analysing the trends in heavy metals concentrations and deposition, extending the modelling domain to cover the whole northern hemisphere to provide mercury calculations on an hemispheric scale, completing the first stage of the mercury model intercomparison, and refining the model concerning natural emissions, re-emission and background concentrations. He stressed the uncertainties in the emission inventories for heavy metals and the need for more accurate data.

29. Mr. V. SHATALOV of MSC-E reported on progress in the modelling work on POPs and presented the report on the investigation and assessment of transboundary POP transport and accumulation in different media (EMEP report 4/2000) jointly prepared with the CCC, the note on modelling the long-range transport and deposition of POPs in Europe (EMEP/MSC-E technical note 5/2000), the note on hexachlorobenzene, properties, emissions and content in the environment (EMEP/MSC-E technical note 6/2000), and the note on the parametrization of aerosol deposition processes in EMEP MSC-E and MSC-W transport models (EMEP/MSC-W note 7/2000). Plans for further work included: developing an operational version of the B(a)P long-range transport model with a 50 km x 50 km resolution, modelling of PCDD/F and HCB, the hemispheric modelling of selected POPs, examining the impact of different emission scenarios on the contamination level dynamics for different media, and refining the model of the exchange processes between different environmental media.

30. Mr. J. PACYNA and Mr. J. SCHAUG of CCC reported on progress in their work on the measurement of heavy metals and POPs, presenting in particular the relevant parts of EMEP/CCC report 6/2000 on data quality 1998, quality assurance and field comparisons and the EMEP/CCC report 2/2000 on heavy metals and POPs in Europe 1998. They informed the Steering Body of their plans on the POPs laboratory exercise for 2000-2001 that would start in November 2000 and cover a long list of POPs. Furthermore, they presented a proposal for criteria for superstations for heavy metals sampling and invited delegates to comment on the draft.

31. The Steering Body:

(a) Took note with appreciation of the report of the EMEP/WMO/UNEP Workshop (EB.AIR/GE.1/2000/8); and

(b) Expressed its appreciation to MSC-E and CCC for the excellent progress in the work on heavy metals and POPs, taking note of the reports presented, in particular the need for more accurate emission inventories of these pollutants.

C. Photo-oxidants

32. Mr. D. SIMPSON of MSC-W reported on progress in the atmospheric modelling of photo-oxidants and presented the report on transboundary photo-oxidants (EMEP report 2/2000). He informed the Steering Body about the work towards a model of ozone deposition and stomatal uptake over Europe (EMEP/MSW note 6/00) and indicated that he would welcome continuing this work in closer collaboration with the International Cooperative Programme (ICP) on Crops under the Working Group on Effects. He highlighted the data needs for improving the work on ozone trends and the usefulness of VOC measurement data for the evaluation of models. He expected that the unified Eulerian model would greatly facilitate future work at MSC-W and open up new possibilities for links with both global models and local modelling work.

33. Mr. J. SCHAUG of CCC reported on the development of the monitoring network, pointing out that there were still very few VOC monitoring stations and there were not enough ozone monitoring stations in the Mediterranean area. He invited delegations to download the report on ozone measurements 1998 (EMEP/CCC report 5/2000) from the Internet.

34. The delegation of Germany reminded delegations of the Workshop on ozone trends to be held on 9-11 November 2000 in Cologne (Germany). It was suggested that the Workshop should also assess the results of abatement policies to show the impact of the implementation of the Protocols.

35. The delegation of Switzerland informed the Steering Body that it was willing to host a workshop in early 2001 on factors (in particular NO_x and VOC concentrations) limiting ozone formation.

36. The representative of EEA invited EMEP to use the data of the stations linked to AIRBASE, many of which monitored NO_x and ozone. The delegation of Portugal informed the Steering Body that four new monitoring stations would be installed.

37. The Steering Body:

(a) Expressed its appreciation to MSC-W and CCC for the excellent progress in their work on photo-oxidants, and took note of the reports;

- (b) Accepted with appreciation Switzerland's offer to host a workshop.

D. Acidifying and eutrophying compounds

38. Ms. L. TARRASÓN of MSC-W noted the many contributors to this traditionally important area of work. She provided an overview of relevant EMEP Centre reports on documentation and data, research and discussion of information. She drew attention to the 1999 Status of EMEP report and the Status Report 2000 (EMEP MSC-W Note 1/00) and presented some of the results to the Steering Body. She noted the work on moving from the Lagrangian model to the Eulerian model and the differences resulting from the increase in modelling area. She indicated that the results on ecosystem exceedances were developed in collaboration with the Coordination Center for Effects. Ms. Tarrasón provided examples of trend studies, noting the importance of intercomparison exercises.

39. Mr. K. TORSETH of CCC described the results of the 17th intercomparison exercise, noting that the results for sulphur and NO₂ were mostly excellent. He also summarized the results of previous intercomparison exercises. An analysis of the trends in measurements clearly showed a fall in sulphur deposition. He described the methods for making use of data by combining sites in a region and noted the importance of good quality recording for identifying errors.

40. The delegation of Slovenia noted that there were numerous experts working at the national level and contributing to the progress in the work of EMEP. It suggested that their contribution should be made more visible. MSC-W informed the Steering Body that this had been recognized and it intended to include the lists of national experts of the various groups on the EMEP Internet pages.

41. The Steering Body:

- (a) Noted with appreciation the continued excellent work by the Centres on these pollutants, and the progress made in the further development of the Eulerian model;
- (b) Took note of the technical reports and their results and conclusions;
- (c) Recommended that work should continue to further develop the Eulerian model and EMEP monitoring activities and their reporting.

42. The Steering Body decided to derestrict all technical reports presented during the session and invited the Centres to disseminate them widely and make them available on the Internet.

VIII. TASK FORCE ON MEASUREMENTS AND MODELLING

43. The Co-Chairman of the new Task Force on Measurements and Modelling, Mr. J. SCHNEIDER (Austria), reported on the preparations for its first meeting in Vienna on 23-

25 October 2000. He drew attention to its draft terms of reference drawn up by an organizing committee, and noted their relevance to the vision of the proposed EMEP strategy. He described the objectives of the first meeting, which would focus on the terms of reference and on selected topics. The topics included the assessment and review of changes in emissions, and of changes in fluxes, depositions and concentrations in Europe throughout the lifetime of EMEP, as well as the consideration of the requirements for characterization of particulate matter through a measurement plan for EMEP.

44. The Chairman noted the participation of the World Meteorological Organization in the Task Force and welcomed the involvement of its nominated Co-Chairman, Mr J. MILLER. In the ensuing discussions, several delegates stressed the importance for the Task Force to become a forum for discussion by national experts of their most important problems concerning modelling and measurements. While welcoming the future work of the Task Force, others suggested that the relationship between the Task Force, the EMEP Centres and the Steering Body should be considered carefully in the future to ensure effective reporting and implementation of the work-plan. The new Task Force could support the EMEP Steering Body by preparing the scientific basis for some of its decisions.

45. The EMEP Steering Body:

(a) Took note of the preparations for the first meeting of the Task Force on Measurements and Modelling and the proposed terms of reference drafted by the organizing committee, and invited the Task Force to present its plans for its future activities at the next meeting of the Bureau of the Steering Body in spring 2001;

(b) Stressed the importance of involving national experts in the first meeting of the Task Force;

(c) Agreed on the need for the long-term assessment report, welcomed the offer of Sweden to contribute to the production of the report, and requested the Task Force to report the detailed plans for this at the next session of the Steering Body;

(d) Noted with appreciation the offer from the delegation of Slovenia to host the second meeting of the Task Force in 2001;

(e) Recognized the importance of providing a clear framework for the operation of the Task Force and the EMEP Centres and requested its Bureau to consider the issue and report to it at its twenty-fifth session;

(f) Welcomed all national contributions to the activities of the new Task Force.

IX. INTEGRATED ASSESSMENT MODELLING

46. Mr. R. MAAS (Netherlands), Chairman of the Task Force on Integrated Assessment Modelling, presented its report (EB.AIR/GE.1/2000/11), including the results of its twenty-fifth meeting, held in Saltsjöbaden on 12-14 April 2000. Mr. Maas drew the attention of the delegations to the progress in integrated assessment modelling related to particulate matter and explained the proposal for a long-term work programme presented in the Task Force's report. He pointed at several elements of the work that needed additional efforts to be able to extend the model inter alia to cover the urban scale adequately and to represent the health effects of PM exposure. The Task Force was still looking for sponsors for workshops and their scientific preparations. Mr. Maas invited the Steering Body to comment on the work programme proposal, in particular on those parts that related to input into the models from other EMEP activities. He also highlighted the Task Force's plans to establish closer links with national work by setting up a network of national focal points. Finally, he informed the Steering Body that the Task Force planned to hold its next meeting in the form of a workshop on 23-24 November 2000 at IIASA in Laxenburg (Austria). The next formal meeting would be held in conjunction with a meeting under the EC CAFE programme in May 2001.

47. In response to a question, Mr. Maas explained that the full inclusion of heavy metals into integrated assessment modelling was not considered feasible in the medium term, but that the linkage between heavy metal deposition and acidification was sufficiently well covered by the critical load approach that formed the basis of the modelling work. He considered it possible to cover heavy metals as a side effect in the modelling work over the next two-three years.

48. Mr. M. AMANN, representative of the Centre for Integrated Assessment Modelling (CIAM) at IIASA, reported on progress in integrated assessment modelling work on particulate matter. The work had been a natural extension of the Regional Acidification Information and Simulation (RAINS) model. The precursors to secondary particles were already included in the model and most of the sources of primary particles could also be linked to sources covered by the model. IIASA had been able to prepare a first set of cost curves on the basis of a project funded by the German Environment Agency. These cost curves and other information about modelling work done so far would be presented at the Workshop in November. All work done by IIASA, including the preliminary results of particulate matter modelling, was available on the Internet at: <http://www.iiasa.ac.at/~rains>. IIASA was also preparing to make the full version of the RAINS model available on the Internet, but some technical problems still remained to be solved. Finally, Mr. Amann stressed the importance of input from national experts in the development of the RAINS model, and invited delegations to send experts to IIASA to spend one-three months working on the integrated assessment model, which would be beneficial to both the Centre and national work.

49. Several delegations expressed strong support for the establishment of a network of national focal points and promised to support this effort. The representative of the European Environment Agency indicated its interest in establishing links with this network.

50. The Steering Body:

(a) Took note of the report by the Task Force on Integrated Assessment Modelling (EB.AIR/GE.1/2000/11);

(b) Endorsed the Task Force's proposal to establish national focal points for integrated assessment modelling and invited the Parties to nominate such focal points, preferably experts working at the science-policy interface.

X. COOPERATION WITH NATIONAL PROGRAMMES

51. Mr. N. HEIDAM (Denmark) informed the Steering Body about a modelling project on mercury that Denmark was conducting within the Artic Monitoring and Assessment Programme (AMAP). The project on Monitoring and Modelling of Air Pollution in Greenland had been running for several years and a subproject was concerned with the development of a Eulerian hemispheric model. The model, which was originally focused on sulphur, had recently been extended with success to include lead in particles. At present, the model was being developed to handle the complex chemical and physical processes of mercury. Verification of the results involved all available measurement data on mercury in air and precipitation, including those from EMEP. The model for mercury offered several other possibilities for further development in connection with POPs, since POPs also circulated on a hemispheric, if not global, scale and were similarly influenced by re-emission processes.

52. Mr. R. DERWENT (United Kingdom) provided information on the results of a project exploring the use of inverted models. Using detailed temporal measurements from a single monitoring site it was possible to identify spatial patterns and trends in emissions. Results for methyl chloroform, carbon monoxide and sulphur were described. Further work was planned and would be reported to the Task Force on Measurements and Modelling. Such results might have potential for investigating compliance in the future.

53. In discussion it was noted that detailed (e.g. hourly) measurements were essential for such inverted modelling. EMEP data were not sufficient. It was also pointed out that improvements were possible if more than one monitoring site was used, and plans for international collaboration on this were under way.

XI. COOPERATION WITH MONITORING AND MODELLING PROJECTS

A. Cooperation between EMEP and the World Meteorological Organization

54. Mr. J. MILLER of WMO informed the Steering Body about its relevant ongoing activities in the Global Atmospheric Watch (GAW) Programme. A meeting covering all GAW monitoring activities in Europe was planned for the autumn of 2001. EMEP was expected to make a major contribution. Mr. Miller also reported on the activities of the GAW Urban Research Meteorology and Environment (GURME) project, which was assisting developing countries in urban diffusion modelling and monitoring such as in the recent workshop for Southeast Asia in Malaysia. An important recent GAW activity in cooperation with the Committee on Earth Observing Satellites (CEOS) was to review worldwide measurement of ozone using different platforms. A WMO-CEOS report describing an integrated system for satellite, aircraft and ground-based measurement of ozone in the atmosphere would be published in the near future. Both the GURME programme and the WMO-CEOS report should be of interest to the EMEP community.

55. In Europe, many countries had designated stations that meet the criteria of both EMEP and GAW since the two follow the same measurement protocols. Recently EMEP stations in Poland and at the Joint Research Centre in Ispra (Italy) had joined the GAW system. During the discussion of this issue, the Steering Body recommended that, when possible, Parties should consider applying to GAW so that their EMEP stations can become part of the GAW system, since both programmes had a common measurement and quality assurance programme.

B. Cooperation between EMEP and the European Commission and the European Environment Agency

56. Mr. B. BRANGAN of the European Commission informed the Steering Body about discussion on the EC Clean Air for Europe (CAFE) programme. A brief informal note had been circulated to delegations before the session. Mr. Brangan stressed the importance of close collaboration between EMEP and the CAFE programme. The work to be carried out on particulate matter, which would be one of the priorities of CAFE work, was a good example of the commonalities between the two bodies. Much of the CAFE work would rely on progress in the work of EMEP. The European Commission therefore suggested establishing mutually beneficial structural links between the two bodies and invited EMEP representatives to participate in the CAFE programme, in particular through its proposed Technical Analysis Group.

57. Mr. R. VAN AALST, representative of EEA, presented an informal note on cooperation between EMEP and EEA. Given the large overlap of countries covered, it was rational to share expertise, information, infrastructure and networks. Close cooperation already existed in the areas of emission inventories and projections and air quality monitoring and data access. The new

structure of bodies under the Convention and the new European Topic Centre on Air and Climate Change of EEA should help to foster closer cooperation. It was proposed to organize joint workshops between EIONET Air Emissions and the Task Force on Emission Inventories and Projections (as in June 2000), between EIONET Air Quality and the Task Force on Measurements and Modelling, and between the EIONET Integrated Effects Assessment and the Task Force on Integrated Assessment Modelling.

58. The Steering Body thanked the European Commission and EEA for the information presented, welcoming the prospect of closer cooperation. It agreed with the proposal to establish mutually beneficial structural links with the CAFE programme and EEA and requested its Bureau and the secretariat to continue discussions and present proposals to it at its next session.

C. Cooperation between EMEP and the marine commissions

59. Mr. N. HEIDAM, Vice-Chairman (air) of the Working Group on Monitoring and Assessment (MONAS) of the Helsinki Commission (HELCOM), informed the Steering Body that HELCOM had recently been reorganized and MONAS was established to deal with air pollution problems. The contributions from the EMEP Centres to the first meeting of MONAS were highly appreciated. The Group noted the importance of shipping emissions for the nitrogen pollution loads to the Baltic Sea, which were in the same order of magnitude as those originating from the sum of land-based sources of some countries. MONAS recognized the need for continuous improvements in emission data, especially with respect to heavy metals and POPs as a cooperative effort between HELCOM and EMEP and in association with EEA. A planning meeting for this purpose was scheduled for the autumn 2000. Also concerning measurements, HELCOM appreciated the importance given to heavy metals and POPs in the new EMEP strategy.

D. North American activities on long-range transport of air pollutants

60. Mr. K. J. PUCKETT (Canada) and Mr. R. DENNIS (United States) reported on the North American activities on long-range transport of air pollutants and provided written information. Joint work on the assessment of transboundary impacts of particulate matter had progressed and a first modelling and data analysis workshop was held in September 1999. Parallel applications of Canadian and United States models were planned in order to support the negotiations on a particulate matter annex to the bilateral Canada United States Air Quality Agreement. The first state of science assessment on ozone of the North American Research Strategy for Tropospheric Ozone (NARSTO, <http://www.cgenv.com/Narsto/>), an entity devoted to research on tropospheric ozone and fine particles bringing together scientists, policy experts and other stakeholders from Canada, Mexico and the United States, would be available in September 2000. Work had started on a particulate matter assessment and was expected to be finalized in 2003.

61. The United States Environmental Protection Agency (EPA) offered to host an EMEP workshop in spring 2001 on trans-Atlantic transport of air pollutants, possibly in connection with an International Global Atmospheric Chemistry (IGAC) meeting. EPA would welcome any comments and proposals on the design of the workshop. EPA also offered to sponsor an EMEP workshop on fine-particulate modelling and speciated measurements in autumn 2001 or in spring 2002 and was looking for partners to organize this workshop.

62. The Steering Body welcomed with appreciation the offers by the United States for the two workshops and agreed to include them in the work plan for 2001.

E. Other

63. The representative of the European Experiment on the Transport and Transformation of Environmentally Relevant Trace Constituents in the Troposphere over Europe (EUROTRAC) presented a note about ongoing research project under EUROTRAC-2 of relevance to EMEP. Information about these projects and EUROTRAC-2 was available on the Internet <http://www.gsf.de/eurotrac>.

XII. FINANCIAL AND BUDGETARY MATTERS AND WORK-PLAN FOR 2001

64. The Chairman of the Steering Body introduced the note on financial and budgetary matters (EB.AIR/GE.1/2000/10 and Add.1), including the proposal for a budget for 2001 and for the draft EMEP work plan for 2001 that would be presented to the Executive Body. He explained that it had been necessary to revise the 2000 budget of EMEP as explained in paragraphs 2-4 together with table 3 of the document. The 2001 budget was, however, proposed at the original level of US\$ 2,040,495, as set out in table 4 of the document.

65. The secretariat pointed out that note c/ to table 2 should be the same as that to table 3 and refer to a voluntary contribution of US\$ 500,000.

66. The delegations of the Czech Republic and Poland indicated that in the meantime they had made their payments for 2000. The delegation of Italy informed the Steering Body that Italy would pay its 2000 contribution in full before the end of the year. The secretariat indicated that it was at present not in a position to confirm receipt of any payments additional to those listed in table 1 of EB.AIR/GE.1/2000/10.

67. The delegation of Switzerland informed the Steering Body that it could make a voluntary contribution of US\$ 20,000 for the work on particulate matter emission inventories both for the year 2000 and for 2001 and requested note e/ to table 4 to be corrected accordingly.

68. The Steering Body was also informed that Ukraine's proposal for a contribution in-kind had been discussed by the Bureau. It had recommended that the project should proceed but that it

should be reoriented to focus on the priorities set by the Steering Body. The secretariat was writing to Ukraine to explain.

69. The Steering Body:

(a) Took note of the status of contributions to the financing of EMEP provided in document EB.AIR/GE.1/2000/10;

(b) Reminded Parties of the importance for payments of the mandatory contributions to be made as early as possible in the fiscal year;

(c) Approved the 1999 contribution in kind from Belarus to MSC-E;

(d) Agreed to amend footnote e/ to table 4 of EB.AIR/GE.1/2000/10 as proposed by Switzerland and to change footnote a/ to that table to make it as clear as possible, while taking into account the legal requirements, that this payment should be used by CIAM;

(e) Adopted the budget for 2001 set out in table 4 of EB.AIR/GE.1/2000/10 as amended and fixed the mandatory contributions from Parties for 2001 as set out in the last column of table 5 of that document.

70. The chairman of the Steering Body presented the draft work-plan (EB.AIR/GE.1/2000/10/Add.1). He noted that with the new Task Forces under EMEP, the role of the Steering Body would change. Many of the scientific issues would be discussed at Task Force meetings and the Steering Body would need to focus more on major results, as described in the reports to the Steering Body, and on future plans and activities, through the work-plan. The work-plan needed to address the activities of the Task Forces in addition to the work of the Centres. This year there was insufficient time to make this move, but the Chairman proposed, as an interim measure, the discussion of the work-plan document. National contributions to this work-plan would be noted as appropriate.

71. Each part of the work-plan (EB.AIR/GE.1/2000/10/Add.1) was discussed separately. For each part several Parties made suggestions for changes to the text to ensure that the work-plan fully reflected the needs of the Convention and EMEP, as well as the activities that had been planned for the future. With regard to emissions, some concern was expressed about the short time scale for commencing particulate emission reporting. It was pointed out that plans included support to Parties for this activity, though the Chairman acknowledged that some slippage might be inevitable in the first year. It was also noted that the shortfall in the quantity and quality of heavy metal and POP emission data reported should be addressed through the work-plan. Wording was agreed for the work-plan to encourage Parties to report on these pollutants. Several Parties made offers to host workshops and Task Force meetings, which are reflected in the decisions below.

72. A representative of MSC-W noted that many requests for additional work by the EMEP Centres had been proposed without any indication of increasing resources to cover these tasks. He suggested that Parties should be invited to make a larger contribution to the work and that the Steering Body should set clear priorities to enable the Centres to react correctly in a situation of tight budgets.

73. The Steering Group:

(a) Adopted its work-plan with as amended, and recommended that it should be presented to the Executive Body for approval;

(b) Prepared a draft long-term programme (annexed below) for work to prepare for the review of the Gothenburg Protocol covering also work related to particulate matter, based on the draft presented by the Task Force on Integrated Assessment Modelling (EB.AIR/GE.1/2000/11), for consideration by the Executive Body at its eighteenth session (in 2000), and invited all Parties to study the draft in particular with a view to making contributions to its implementation.

XIII. ELECTION OF OFFICERS

74. The Steering Body re-elected Mr. M. WILLIAMS (United Kingdom) as Chairman, Mr. P. GRENNFELT (Sweden), Ms. M. LESNJAK (Slovenia), Mr. R. VAN AALST (Netherlands) and Ms. S. VIDIC (Croatia) as Vice-Chairpersons and elected Ms. L. EDWARDS (European Community) as new Vice-Chairperson. The Steering Body agreed that an additional seat on its Bureau should be reserved for a representative of a Party to allow a good balance of views in the Bureau.

Annex**LONG-TERM WORK PROGRAMME**

1. EMEP provides scientific information on emissions, measurements, projections and abatement costs to support the policy review and development of the Protocols. The long-term timetable is aimed at supporting the review of the Gothenburg Protocol in 2004. In order to have modelling tools ready to be applied by 2004, the year 2003 should be reserved for testing and sensitivity analysis. The results of specialized studies and new data should therefore be available by 2002, which leaves the year 2001 for preparatory work.
2. The EMEP work plan is limited to the work done by the Parties and the EMEP centres and task forces, but it also relies on input from other bodies under the Convention and work done by EEA and the EC. Uncertainty analysis, scientific review and communication with stakeholders are part of the work plan of each of the Centres and Task Forces.
3. The timetable covers work on acidification, eutrophication, ozone and exposure to fine particles. The substances involved are SO₂, NO_x, VOCs, NH₃ and the various species of particulate matter. Linkages with climate change policies are also included. A work plan on HM and POP can be developed only once the Working Group on Strategies and Review has is given guidance on the timing of the review of Protocols and the chosen policy approach.

**Tentative timetable of EMEP activities necessary
for the review of the Gothenburg Protocol**

EMEP products					Desired input on effects	Coordi- nation	Financed/hosted by
Monitoring	Modelling	Emissions	Abatement	IAM			
Autumn 2000							
	Preliminary PM model					MSC-W	MSC-W
Preliminary monitoring strategy						TFMM/ CCC	
Ozone trends workshop						TFMM/ CCC	Germany
					Dynamic modelling, workshop	WGE	
					Materials, workshop	WGE	
		Preliminary PM inventory & projection				MSC-W, TNO	EEA, EMEP (Netherlands, Switzerland)
			PM cost estimates, workshop	Preliminary IAM framework		CIAM	CIAM, Germany, United Kingdom

EMEP products					Desired input on effects	Coordination	Financed/hosted by
Monitoring	Modelling	Emissions	Abatement	IAM			
2001							
		Emission reporting, workshop				TFEIP, EEA	Netherlands?
Monitoring plan for compliance						TFMM, TFEIP, TFIAM	?
	Modelling aerosol dynamics, workshop					MSC-W	Univ. Helsinki a.o.
					Health benefits, workshop	NEBEL, WGSR	United Kingdom
		Review of PM estimates by Parties				MSC-W, CIAM	All Parties
	Study on regional PM transport					MSC-W	EMEP, ?
					Biodiversity indicators, workshop	WGE, TFIAM	
	Hemispheric modelling, workshop					MSC-W, CIAM	Canada, United States
		Adaptation of reporting guidelines				TFEIP	
					Review of new PM effects data	TFIAM, TF Health	WHO, United States, EC
			Preliminary PM cost curves	Preliminary reduced form model		MSC-W, TFIAM, CIAM	CIAM, ?
Urban air quality, workshop						TFMM, EIONET	EEA, ?
	Rural-urban linkages and ozone-limiting factors, workshop					MSC-W	Switzerland
2002							
PM composition, monitoring and modelling						TFMM, CCC, MSC-W	United States
	Urban modelling, study/workshop			Interface to urban scale model		EMEP ?	CAFE ?
		Review of trends				MSC-W, CIAM	

EMEP products					Desired input on effects	Coordination	Financed/hosted by
Monitoring	Modelling	Emissions	Abatement	IAM			
		Assessment of results, possible workshop				TFEIP, EEA	Sweden (ASTA)
		Final PM inventory, projections		Update 2010, 15, 20 scenarios		TFEIP, TFIAM	Parties
					Health impact indicators, workshop	TFIAM, TF Health	?
	Final 50x50 km source-receptor matrices			Update IAM framework		MSC-W, CIAM	EMEP
		Final 2000 inventory		Update base year scenario		MSC-W, CIAM	EMEP, Parties
				Shipping emissions, workshop		MSC-W, CIAM, TFIAM, BAR-COM	?
				Update effect modelling	Final dynamic modelling results	WGE, TFIAM	
					Update benefits module	NEBEI, ICPs	Netherlands, United Kingdom
			New abatement options, study	Update database		TFIAM, EIPPC	?
			Costs and instruments for structural change, study	Update database		TFIAM	?
2003							
			Review of PM cost curves	Test of scenario analysis, sensitivity		CIAM, TFIAM	
			Analyse side-effect for Cd, Pb, PAH/BaP			CIAM, MSC-E	
				Uncertainty management, workshop		TFIAM	?
2004							
				National IAM experiences, workshop		TFIAM	?
				Apply IAM for WGSR		CIAM, TFIAM	

NEBEI: Network of Experts on Benefits and Economic Instruments

TFEIP: Task Force on Emission Inventories and Projections

TF Health: Task Force on the Health Aspects of Air Pollution

TFIAM: Task Force on Integrated Assessment Modelling

TFMM: Task Force on Measurements and Modelling

WGE: Working Group on Effects

WGSR: Working Group on Strategies and Review