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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-SEVENTH SESSION

Introduction

1. The Steering Body held its twenty-seventh session in Geneva from 8 to 10 September 2003.
2. The session was attended by representatives from the following Parties to the Convention: Armenia, Austria, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Italy, Kazakhstan, Kyrgyzstan, Netherlands, Norway, Poland, Republic of Moldova, Russian Federation, Slovakia, Slovenia, Sweden, Switzerland, the former Yugoslav Republic of Macedonia, United Kingdom, United States and the European Community (EC).
3. Representatives of the World Health Organization's European Centre for Environment and Health (WHO/ECEH), Bonn office, the European Environment Agency (EEA) and the four EMEP Centres (Centre for Integrated Assessment Modelling (CIAM), Chemical Coordinating

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.

Centre (CCC), Meteorological Synthesizing Centre-East (MSC-E) and Meteorological Synthesizing Centre-West (MSC-W)) attended. The World Meteorological Organization (WMO) regretted that it was unable to send a representative.

4. Mr. Jürgen SCHNEIDER (Austria) chaired the meeting.

I. ADOPTION OF THE AGENDA

5. The Steering Body adopted the provisional agenda as contained in document EB.AIR/GE.1/2003/1.

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

6. The Steering Body adopted the report on its twenty-sixth session (EB.AIR/GE.1/2002/2).

III. MATTERS ARISING FROM THE TWENTIETH SESSION OF THE EXECUTIVE BODY FOR THE CONVENTION AND ACTIVITIES OF THE EMEP BUREAU, INCLUDING COOPERATION WITH THE WORKING GROUP ON EFFECTS

7. Mr. K. BULL, Chief of the Air and Water Team of the ECE Environment and Human Settlements Division, provided information on the status of the Convention, noting progress in the ratification of its protocols, in particular the entry into force of the 1998 Aarhus Protocol on Persistent Organic Pollutants (POPs), which was to take place on 23 October 2003, and the accession of Romania to the EMEP Protocol in July 2003. He reviewed the decisions taken by the Executive Body at its twentieth session (ECE/EB.AIR/77). Special mention was made of: (i) the newly-established Expert Group on Heavy Metals under the leadership of Germany; (ii) the agreement that there was no need to derestrict technical reports and notes to the Steering Body; (iii) the approval of the Guidelines for Estimating and Reporting Emissions Data (EB.AIR/GE.1/2002/7 and Corr.1) and associated decision 2002/10. He stressed the importance of facilitating the participation of countries of Eastern Europe, the Caucasus and Central Asia (EECCA) in the work of the Convention. He also noted decision 2002/1 taken by the Executive Body at its twentieth session on the financing of core activities not covered by the EMEP Protocol. This was reported to the Ministers at the "Environment for Europe" Conference in Kiev in May 2003. Finally, he drew attention to the workshop on communications, held in London on 9 - 11 April 2003, which had identified ways to improve the visibility of the Convention and its achievements.

8. The Chairman of the Working Group on Strategies and Review, Mr. R. BALLAMAN, informed the Meeting about its future work. He stressed that preparations for the review of the protocols were to be the main elements of the work-plan for 2004. In view of the entry into force

of the Protocol on POPs, the priorities for the reviews might change. He informed the Steering Body about the types of data that would be needed to support the Working Group's work on the Protocol on POPs, the Protocol on Heavy Metals and the Gothenburg Protocol. With regard to the Protocol on POPs, he stressed that, although at the next session of the Executive Body it would not be possible to propose new substances for inclusion in the Protocol, Parties might wish to make preliminary announcements of their plans to propose such substances in 2004. With regard to the communication strategy, he noted it was the 25th anniversary of the Convention in November 2004; he stressed that it was important to have sound documentation that highlighted the successes of the Convention over the past 25 years and helped to determine the needs for future work. He recommended that the EMEP assessment report, to be published in 2004, should not remain within the scientific community.

9. The Chairman of the Working Group on Effects, Mr. H. GREGOR (Germany), informed the Steering Body about the discussions held at its recent twenty-second session (EB.AIR/WG.1/2003/2). The Working Group had noted that cooperation with EMEP and the Working Group on Strategies and Review was very good and producing excellent results. It had welcomed the outcome of the joint Bureaux meeting of the Working Group and Steering Body and was willing to continue this cooperation. He drew the attention to the positive results of the cooperation between the Working Group and EMEP, in particular the development of and agreement on a new methodology to assess and map critical levels for ozone effects on ecosystems and the use of ecosystem-specific deposition data in critical loads exceedance mapping. He stressed the consequences that this new approach would have for integrated assessment modelling because of the large differences between exceedance maps based on preliminary ecosystem-dependent depositions and those based on average depositions. He also stressed the importance of the data that the Working Group was expecting from EMEP. These included, in particular, data on ecosystem-specific depositions for sulphur and nitrogen and historic deposition data for dynamic modelling. He also mentioned the work on a substantive report that was intended to be prepared by 2004, pointing out that the Working Group was eager to do this in close cooperation with the EMEP work on the assessment report.

10. The Chairman of the Steering Body presented the summary report on the work of the EMEP Bureau between the Steering Body's twenty-sixth and the twenty-seventh sessions, including cooperation with the Working Group on Effects (EB.AIR/GE.1/2003/9). He reported that the Bureau had held two meetings, in November 2002 and in February 2003. He also reported on the second joint meeting of the Bureaux of the EMEP Steering Body and the Working Group on Effects, which had taken place in Geneva on 27 February 2003. The note of the meeting could be found on the Convention's web site.

11. The Steering Body took note of this information and agreed to bear it in mind in its discussions. In particular, it:

- (a) Took note of the report on the activities of the EMEP Bureau;
- (b) Also took note of the results of the joint meeting between the Bureaux of the Steering Body and the Working Group on Effects, and agreed to take them into account in preparing its work-plan;
- (c) Expressed its readiness to cooperate with the Working Group on Effects in the preparation of the substantive report.

IV. PROGRESS IN ACTIVITIES IN 2003 AND FUTURE WORK

12. The Chairman invited the Steering Body to discuss separately each area of work, considering progress made in 2003 with respect to the adopted work-plan (ECE/EB.AIR/77/Add.2, annex XIII, item 2) and taking into account the draft work-plan for 2004 (EB.AIR/GE.1/2003/10), which would be discussed under agenda item 6.

A. Acidification, eutrophication and photo-oxidants

13. Mr. D. SIMPSON and Ms. L. TARRASON (MSC-W) presented an overview of activities on monitoring and modelling, including progress in work at CCC and CIAM, its own work, in particular concerning the review of the unified EMEP Eulerian model. This included a workshop to review the model, planned in early November 2003, and the plans for work up to 2005. They drew attention to the EMEP Status Report 1/03.

14. Mr. Simpson highlighted the improvements to the unified model and compared model outputs with measured data. He showed that comparisons for most pollutants, e.g. SO₂, were good, although there was a tendency for concentrations in air to be overpredicted, and concentrations in precipitation to be underpredicted. The ozone part of the model had new boundary conditions and was now performing well. Comparisons with measurements were good across most of Europe though problems remained with predictions in the South-East. For particulates there were fewer measurements for model comparisons and the results showed a general underestimation. He concluded that the unified model was now performing well and ready for the review workshop that was to be held in Oslo on 3 - 5 November 2003. He announced that the model documentation was now available on the EMEP web site.

15. Ms. Tarrason drew attention to the results presented in part 3 of the Status Report, noting the source-receptor calculations made for individual countries and for individual components with special attention to sulphur, NO_x and NH₃ emissions. She highlighted the interactions between NH₃ emissions and those of SO₂, which resulted in non-linearity in changes in deposition. For example, decreasing NH₃ emissions could result in increased long-range transport of SO₂. She suggested presenting future source-receptor matrices analysing ammonia emissions separately from SO_x and NO_x emissions, in a similar manner as NO_x and VOC emissions are analysed

separately for ozone source-receptor calculations. She also proposed to study source-receptor matrices for selected ecosystem areas. She outlined several proposals for further work and described the plans for the review of the unified model. She identified the centres' priorities for the future in relation to the proposed work-plan, noting that work on base cations would start soon and there would be a workshop in Sweden on 26 - 28 November 2003 on this topic.

16. Several delegations commended MSC-W for the large amount of work done in developing the unified model, but others noted that parts of the report were only made available at a late stage. A number of delegations drew attention to the importance of particulates, the problems associated with their modelling and the need to address shortfalls in the model where possible. Some delegations stressed the need for separate source-receptor matrices for sulphur and nitrogen, and the need to explore further the methods for presenting the data. It was recognized that the interdependency of pollutants would make the presentation of results much more difficult.

17. The Steering Body:

(a) Took note of the Status Report 1/03 and welcomed the excellent progress made with model development and validation;

(b) Stressed that the review of the unified model to demonstrate its reliability was a very high priority; further work should also include an assessment of uncertainties and recommendations on use for policy purposes;

(c) Welcomed the participation of experts in the proposed workshop on the unified model and the associated review process;

(d) Took note of the development of ecosystem-specific deposition data and the important consequences that these might have on the calculation of critical loads exceedances.

B. Heavy metals

18. Mr. S. DUTCHAK (MSC-E) introduced the EMEP Status Report 2/03 on lead, cadmium and mercury as well as the technical reports of CCC (1/03, 7/03) and MSC-E (1/03, 5/03), the MSC-E/Arctic Monitoring and Assessment Programme (AMAP) report (1/03) and discussions within the Task Force on Measurements and Modelling (EB.AIR/GE.1/2003/3, chap. IV). He drew attention to improvements in the number of monitoring sites and in emissions reporting but emphasized that there were still too few data to provide proper support for modelling. He noted that reported emissions of lead and cadmium had shown significant decreases in emissions for some European countries, but not for others. However, deposition measurements showed decreases in most countries, demonstrating the importance of long-range transport between countries. Comparisons of modelled data with measurements of cadmium and lead were in good agreement for much of the EMEP region, while mercury results showed more than 40% of the

metal deposited in Europe was transported from outside. Cooperative work had included a model intercomparison exercise, collaboration with the Working Group on Effects and the Working Group on Strategies and Review's Expert Groups on Heavy Metals, and collaboration with AMAP, the Baltic Marine Environment Protection Commission (HELCOM) and the United Nations Environment Programme (UNEP). He noted that the planned review of the heavy metals model would be an ongoing activity and he drew attention to the work planned for the coming year that would help further develop the modelling and monitoring results. He again stressed the need for Parties to actively participate in the work and provide data that were sufficient and up to date.

19. Delegations congratulated MSC-E on its report and the centres on the good progress made. Several delegations drew attention to the national reports prepared and circulated by MSC-E; they welcomed the initiative and believed it would prove useful in stimulating interest at the national level.

20. The Steering Body:

(a) Noted with appreciation the work and progress in the monitoring and modelling of heavy metals;

(b) Noted there were some improvements in the monitoring and emissions data reported but stressed that emission data quality, for instance for cadmium and mercury, was the most important limitation for improvement of model results; there was a need for much greater efforts from Parties to report their data in the future, making use of the reporting guidelines, and the Task Force on Emissions Inventories and Projections was requested to pursue this;

(c) Welcomed the individual national reports prepared by MSC-E and invited Parties to comment on their country-specific reports to MSC-E, as appropriate;

(d) Recommended that MSC-E should investigate the possibilities for extending the hemispheric modelling for mercury to the global scale and report back to it at its twenty-eighth session;

(e) Requested the Task Force on Measurements and Modelling to look into the review of the heavy metals model and urged Parties to actively involve themselves in the process.

C. Particulate matter

21. Mr. K. TORSETH (CCC) presented an overview of activities on atmospheric monitoring and modelling of particulate matter (EMEP Status Report 4/03), including progress in work at MSC-W and CIAM, its own work, the discussions within the Task Force on Measurements and Modelling (EB.AIR/GE.1/2003/3), and plans for work up to 2005.

22. In presenting the EMEP aerosol model UNI-AERO, Mr. Torseth highlighted the main results of work on the physical characterization of particulate matter (PM), the chemical composition of PM across Europe, PM emissions and emission projections for 2010 and 2020. For the physical characterization of PM, EMEP observations and modelling results for 2000 and 2001 showed that there were still gaps in the data. The model underestimated PM mass and the underestimation was of the order of 30-40% for PM₁₀ and of 20-30% for PM_{2.5}. For the chemical composition of PM, there was reasonable agreement for secondary inorganic aerosols, with some overestimation of nitrate and a general underestimation of the organic carbon content of the model. The main discrepancies between modelled results and observations were on the carbonaceous and mineral components. These were due both to measurement artifact and to model limitations. The model needs to account for re-suspended dust and wind-blown material and secondary organic aerosols. There was also a significant lack of information on the chemical composition of anthropogenic PM sources, mainly organic carbon and elemental carbon (OC/EC). For the future monitoring strategy, Mr. Torseth stressed the need for extensive collaboration with the scientific community and the recruitment of new data providers, especially for more advanced measurement techniques. He noted an increasing number of Parties were reporting PM emissions. A comparison between the reported national emissions and estimates by the RAINS model for 2001 showed some discrepancies, including poor agreement for total suspended particulates.

23. It was stressed that, in view of the important health impacts, work on PM_{2.5} should be given priority. In particular, the need for research into the sources of PM, both natural and anthropogenic, was highlighted. Some delegations drew attention to biomass burning as a source of PM and to its possible contribution to major PM episodes. Further work to include this source was planned but it was recognized that the identification of sources would be difficult. Other delegations noted the importance of urban emissions and stressed that these should be incorporated in an effective way. Some delegations urged that there should be an appropriate balance between global, regional and local scales when dealing with particulate modelling.

24. The Steering Body:

(a) Noted its appreciation for the work done by MSC-W, CIAM and CCC on particulate matter and welcomed the progress made;

(b) Recognized the importance of Parties' reporting of emissions and urged them to continue their endeavours to provide the necessary data including those on chemical composition;

(c) Noted that measurements of particulates were improving and requested Parties to continue this trend, in particular their efforts in setting up monitoring sites for PM_{2.5} and chemical composition;

(d) Took note of the progress in modelling particulates and stressed that priorities should

focus on important sources and where uncertainties were the highest (e.g. OC);

(e) Noted the important results of the deliberations of the health experts, in particular to use PM_{2.5} as an indicator for PM-related health effects, and requested MSC-W and CIAM to prepare the necessary tools to include health effects in their work;

(f) Invited Parties to comment on their country-specific reports prepared by MSC-E.

D. Persistent organic pollutants

25. Mr. V. SHATALOV (MSC-E) presented an overview of activities on monitoring and modelling POPs, including progress in work at CCC, its own work, the discussions within the Task Force on Measurements and Modelling (EB.AIR/GE.1/2003/3) and plans for work up to 2005. He drew attention to EMEP Status Report 3/03.

26. Mr. Shatalov noted the progress in monitoring but stressed the need to improve the EMEP monitoring network in accordance with the proposed EMEP monitoring strategy. He highlighted work to improve emission inventories as one of the priorities of EMEP. He stressed that the measurement-modelling evaluation of contamination by POPs was to be performed on a multi-compartment basis. For some pollutants, it was necessary to use a hemispheric approach to adequately evaluate the EMEP region. Examples of assessment of the inputs to the most vulnerable ecosystems, such as the Arctic, were presented in the report. The main outputs of the model, namely, pathways of pollutant transport, fields of deposition and concentrations in various environmental compartments, trend analyses and projections, and source-receptor relationships were demonstrated for a number of pollutants (polyaromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), hexachlorobenzene (HCB), lindane and dioxins/furans). Among these, dioxins/furans were considered a priority. Particular attention was paid to model validation, which had been carried out both by comparison of modelled concentrations against measurements and also by a model intercomparison study. There was good cooperation with the Convention's subsidiary bodies both to help evaluate new substances and contribute to the development of effect-based approaches.

27. Several delegations commended the progress made by MSC-E in the modelling of POPs. It was noted that there was still a need to improve data collection and take account of historic accumulation in soils. One delegation suggested that contacts with industry might provide data on the production and consumption of POP products. For some POPs, there was a need to carry out multi-compartment measurements at an increased number of sites, with a degree of spatial resolution if possible. One delegation noted that the frequency of such measurements should be carefully assessed, in view of their high cost.

28. The Steering Body:

- (a) Expressed its appreciation for the work by MSC-E and CCC, noted the progress made and considered this relevant and timely in view of the entry into force of the Protocol on POPs;
- (b) Took note of the progress in model development and welcomed the efforts being made on model validation;
- (c) Agreed that, for a comprehensive picture, hemispheric modelling was required and that the Arctic region required special attention;
- (d) Noted there was a need for improved concentration measurements including multi-compartment measurements;
- (e) Stressed that more work was needed to improve emissions data, and invited national experts to comment on the expert estimates that had been made for their country;
- (f) Invited Parties to comment on their country-specific reports prepared by MSC-E.

E. Measurements and modelling

29. Mr. R. DERWENT, Co-Chair of the Task Force on Measurements and Modelling, reported on progress, including the results of its fourth meeting, held in Valencia (Spain) on 9 - 11 April 2003 (EB.AIR/GE.1/2003/3). Mr. A. ELIASSEN (MSC-W) informed the Steering Body about progress in the preparation of the EMEP assessment report. Mr. K. TORSETH (CCC) presented the draft monitoring strategy (EB.AIR/GE.1/2003/3/Add.1).

30. Mr. Derwent provided an overview of the Task Force discussions concerning the draft monitoring strategy, progress in the preparation of the assessment report, review of the unified EMEP Eulerian model, recent heavy metals and POPs model developments, and the approval of monitoring data reports. He noted that the new proposed monitoring strategy was widely welcomed, but some concerns had also been raised, e.g. on the too prescriptive criteria for site density and the appropriateness of the frequency of entries on level 1 of the strategy (daily versus weekly or monthly). With a view to helping evaluation of the performance of the Eulerian model, a number of other models and their performance had been presented to the Task Force. He also introduced the proposal by the Bureau and the Task Force to establish national focal points for monitoring. This aimed to shift the task of considering and approving technical reports and notes from the Steering Body to the Task Force. He also noted work-plan elements for 2004/2005.

31. Some delegations stressed the need for a balance between the monitoring and modelling discussions at the Task Force's meetings. One drew attention to possible practical problems in

dealing with the approval of reports. The delegation of the United States informed the Steering Body about a forthcoming workshop on PM modelling and monitoring in April 2004 in Louisiana (United States) and expressed the hope that its results might be useful for the work of the Task Force. He noted the Clear Skies initiative, launched to model mercury, SO₂ and NO_x in North America; it currently included only United States and Canadian models but was also open to other models.

32. Mr. Eliassen reported on progress with the preparation of the assessment report. He noted that work on part II, which dealt with national assessments, was more advanced than work on part I: the Europe-wide assessment. He proposed that a first draft should be presented to the Task Force on Measurements and Modelling in spring 2004, and a final draft submitted to the Steering Body at its twenty-eighth session in 2004.

33. It was recommended that a first draft or an executive summary should be presented to the Steering Body's Bureau at its meeting in spring 2004. Attention was also drawn to a call for tenders for the evaluation of air data quality, to be made by the European Commission, with a similar time schedule. It was recommended that MSC-W should establish contact with the European Commission on this matter with a view to avoiding possible overlap of work.

34. Mr. Torseth introduced the draft monitoring strategy for the 2004-2009 period. The draft strategy was warmly welcomed by the Steering Body and it was agreed that it covered all the major issues. It allowed the Steering Body to see how EMEP monitoring fitted into the wider context of the work under other conventions, within the European Union and the WMO Global Atmosphere Watch (WMO-GAW).

35. The Steering Body appreciated seeing how a level-by-level approach could be applied to EMEP monitoring. The concept of supersites would act as a focus for research activities and would provide a fully comprehensive range of measurements, vital for model development. Level-1 on the other hand set out the minimum monitoring commitment to be made by Parties embarking upon monitoring. The Steering Body valued the opportunity of considering which monitoring activities might be thought of as "mandatory" and which might be voluntary.

36. The draft monitoring strategy provided a platform for the Parties to begin their discussions on current and future monitoring activities. The Steering Body agreed that the draft formed an excellent basis for further discussions of the details of the level-by-level approach between the centres, within the Task Force on Measurements and Modelling, and between CCC and the Parties. Some delegations expressed their concerns in relation to the costs of the programme. It was suggested that it would be very useful if CCC provided an analysis of costs involved for level-1 and level-2 national stations/measurement programmes. It was suggested that the final draft monitoring strategy should be prepared by CCC and submitted to the Steering Body at its next session for approval.

37. The Steering Body:

- (a) Took note of the report by the Task Force on Measurements and Modelling and expressed its appreciation for the work carried out by the Task Force, MSC-W, MSC-E and CCC;
- (b) Endorsed the conclusions by the Bureau and the Task Force concerning the approval of monitoring data reports (EB.AIR/GE.1/2003/3, para. 54);
- (c) Took note of the progress in the preparation of the EMEP assessment report, agreed with the proposed timetable for its production, but requested that an initial draft should be prepared for consideration by its Bureau at its meeting in spring 2004;
- (d) Took note of the draft monitoring strategy and stressed that it would be an excellent basis for further discussion;
- (e) Requested the Task Force to consider the issues above, propose revisions to the draft monitoring strategy accordingly, and report back to it at its twenty-eighth session;
- (f) Urged Parties to consider the draft monitoring strategy in detail and provide input and comments to the Task Force at its next meeting;
- (g) Welcomed the proposal of the United States to host a workshop on modelling and monitoring of PM in spring 2004.

F. Emissions

38. Mr. M. WOODFIELD, Chairman of the Task Force on Emission Inventories and Projections, reported on progress made, including the results of the workshop on validation and evaluation of air emission inventories, held in Gothenburg (Sweden) on 14 - 16 October 2002. The workshop had recognized the need for high-quality emission inventories and recommended an inventory improvement programme and better use of the scientific expertise available to the Task Force (EB.AIR/GE.1/2003/5). He noted that the Guidelines for Estimating and Reporting Emission Data, adopted at the twenty-sixth session (EB.AIR/GE.1/2002/7 and Corr.1), were to be published as part of the Air Pollution Studies series (No. 15). The Guidelines would not be amended until 2007, but technical and editorial problems or inconsistencies would be dealt with by the Task Force. Mr. Woodfield reported the results of the 2001 reporting round, noting that this was the first time that Parties could use the new reporting formats. Thirty-six Parties (71%) had reported as of 1 June 2003, with 29 reporting on time. Twenty-one had used the new formats. Last year only one quarter of the Parties had reported on time, with a deadline two weeks earlier (EB.AIR/GE.1/2003/6). Technical documents, EMEP/MSW Data Report and emission data reported to UNECE/EMEP: Status 2003, were available. He noted the upcoming meeting of the Task Force, to be held jointly with the European Environment Information and Observation

Network (EIONET) on 22 - 24 September 2003 in Warsaw, which would consider an emission inventory improvement programme, management of the EMEP/CORINAIR Emissions Inventory Guidebook and more focus on scientific and technical aspects of reporting.

39. Mr. Woodfield noted that the United Kingdom would step down as lead country of the Task Force after the meeting in Warsaw.

40. The delegation of Norway offered to take the leadership of the Task Force after its meeting in September.

41. Several delegations highlighted the importance of work to review and validate emission data. It was also stressed that new insights, e.g. into emissions of small installations or revised emission estimates for heavy-duty vehicles, would have to be incorporated into the Emission Guidebook without any delay. One delegation invited the Task Force to investigate in detail possible discrepancies between the emission reporting guidelines and other internationally agreed reporting requirements.

42. The Steering Body:

(a) Took note of the reports and expressed its appreciation to MSC-W, CIAM and the Task Force for the progress made especially on emission inventories and projections and emission data;

(b) Noted with appreciation the work of Mr. Woodfield, his supporting colleagues in the United Kingdom and the United Kingdom as lead country for their valuable contribution to the work of the Convention;

(c) Welcomed the offer by Norway to lead the Task Force;

(d) Noted the offer of EEA to continue to support the Task Force through co-chaired joint meetings of EIONET with the Task Force and through supporting the Guidebook, and expressed its appreciation for the offers of EEA and Parties to support work on inventory improvement;

(e) Noted that there were some improvements in the timeliness of emissions reporting by Parties, but urged Parties that reported late, or not at all, to do so in the next reporting round (by the deadline of 15 February 2004) and in accordance with the revised Guidelines;

(f) Took note of the results and conclusions of the workshop on validation and evaluation of air emission inventories and invited the Task Force to consider them, draw up proposals for procedures and mechanisms to improve emission inventories, and report these to it at its twenty-eighth session.

G. Integrated assessment modelling

43. The Chairman of the Task Force on Integrated Assessment Modelling, Mr. R. MAAS reported on progress, including the results of its twenty-eighth meeting, held in Haarlem (Netherlands) on 7 - 9 May 2003 (EB.AIR/GE.1/2003/4). Mr. M. AMANN (CIAM) reported on the workshop on linkages and synergies of regional and global emission control, held at the International Institute for Applied Systems Analysis (IIASA) in Laxenburg (Austria) on 27 - 29 January 2003 (EB.AIR/GE.1/2003/4/Add.1). He also reported on progress in the development of baseline scenarios for the review of the 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, on the review of the RAINS model and on progress to cover the urban scale in integrated assessment modelling.

44. Mr. Maas and Mr. Amann presented the progress of work in integrated assessment modelling. Several new insights would lead to the conclusion that it would be harder to meet the environmental objectives of the Gothenburg Protocol on the protection of ecosystems and human health: EURO 2 and possibly also EURO 3 heavy-duty vehicles (HDV) appeared to emit more NO_x than originally expected; there were indications that adverse health effects already occurred at ozone concentrations below 60 ppb; effects to vegetation occurred at ozone levels lower than 40 ppb; and, the new EMEP model deposition to forests was much higher than before and so considerably more ecosystems in Europe appeared unprotected than previously calculated. Moreover, PM_{2.5} exposure created serious adverse health effects. Additional measures would be needed, both at the regional and at the hemispheric level, if policy makers still wanted to meet their original ambitions. On the other hand, an effective reduction in national greenhouse gas emissions, as agreed under the Kyoto Protocol, might reduce the costs of the Gothenburg Protocol substantially.

45. CIAM was developing baseline scenarios and would have bilateral consultations with the Parties during the autumn. Moreover, work on the exposure of urban populations would continue in 2004, using the expected results from the City Delta project's phases 1 and 2, as well as an assessment of the synergies with measures aimed at reducing greenhouse gasses.

46. The Task Force would further guide the work of CIAM. In cooperation with the European Commission, an in-depth review of the RAINS model was envisaged; there was also a need to include emerging new technologies into RAINS. The Task Force would hold its next meeting on 10 - 12 May 2004 in or close to Paris.

47. Several delegations welcomed the progress of the work of the Task Force and CIAM. One delegation stressed the importance of work on uncertainties, while other delegations requested CIAM to keep the integrated modelling framework flexible to be able to take account of new developments (e.g. on the European Union (EU) common agricultural policy) and insights accordingly.

48. Mr. Amann reported on the results of a workshop held in Laxenburg in early 2003 on the linkages and synergies of regional and global emission controls. He highlighted that there were links concerning sources, atmospheric chemistry, impacts and controls. Understanding these links would be essential to avoid any future trade-offs and to use possible synergies between regional and global emission controls.

49. The Steering Body:

(a) Took note of the report of the Task Force, expressing its appreciation to the Chairman, the lead country and the International Institute for Applied Systems Analysis (IIASA), which hosted CIAM and which had hosted the workshop, for the support that they had given to the Task Force;

(b) Noted the importance of developing the baseline scenario and urged Parties to collaborate with CIAM and provide the necessary data;

(c) Recognized the important new insights identified by CIAM (e.g. ecosystem-specific critical loads exceedances) and requested that information on these should be drawn to the attention of appropriate bodies under the Convention;

(d) Stressed the importance of uncertainty management and treatment, and requested CIAM to continue its efforts to assess robustness and possible biases;

(e) Noted the report and conclusions of the workshop on linkages and synergies of regional and global emission controls, and requested that work should continue on this topic, noting the possibilities for a future workshop;

(f) Agree to revert to the proposed budget for CIAM under agenda item 7.

H. Hemispheric air pollution

50. Mr. Dennis, Vice-Chairman of the workshop on hemispheric air pollution, held in Bad Breisig (Germany) on 7 - 9 October 2002 (EB.AIR/GE.1/2003/7), presented its conclusions. He drew attention to the relevance, the mechanisms and the modelling of intercontinental and hemispheric transport and its implications for the future. There was well-documented evidence for the intercontinental and hemispheric transport of ozone, particles and their precursors, as well as for mercury and persistent organic pollutants. Ozone was most affected through increases in the hemispheric burden and particulates were most affected by discrete episodic intercontinental transport, the frequencies of which were likely to change in response to changes in climate. The mechanisms of intercontinental transport were believed to be different between each continent pair (Asia-North America; North America-Europe; Europe-Asia). It was necessary to simulate control strategies using an integrated system of predictive models. However, such simulations

challenged the capabilities of current models and further development was needed. Mr. Dennis highlighted the workshop's recommendations to develop and exploit global observing networks and measurements in the third dimension, above the Earth's surface, to improve emission inventories and further develop linked models. He noted the United States Environmental Protection Agency's continued interest in hemispheric air pollution.

51. The Steering Body:

(a) Took note of the report and important conclusions of the workshop (EB.AIR/GE.1/2003/7) and thanked those responsible for its organization;

(b) Recognized the importance of intercontinental transport of pollutants, in particular of ozone, PM and mercury, decided to continue work on this issue, since it was identifying results of significance for the Convention and other regions, and stressed the need for further scientific input;

(c) Welcomed the continued interest of the United States in the issue, hoped that collaboration with United States experts would continue, and noted the possibility of a further workshop in autumn 2004.

V. COOPERATION WITH OTHER ORGANIZATIONS AND PROGRAMMES, INCLUDING THE EUROPEAN COMMISSION AND ITS CLEAN AIR FOR EUROPE (CAFE) PROGRAMME, THE EUROPEAN ENVIRONMENT AGENCY (EEA), THE WORLD METEOROLOGICAL ORGANIZATION (WMO), THE MARINE COMMISSIONS, THE WORLD HEALTH ORGANIZATION (WHO) AND NATIONAL PROGRAMMES

52. Mr. R.VAN AALST informed the Meeting about progress in activities at EEA. He drew attention to the publication of new reports, namely that for the Kiev Ministerial Conference, those on transport and environment with an emphasis on EU candidate countries, and that on energy and environment, as well as the forthcoming publication of reports on air pollution in Europe in 1999 and 2000. He also stressed the cooperation in joint workshops between EMEP task forces and EIONET, and the contribution of the three EMEP centres to the European Topic Centre on Air and Climate Change. Mr. van Aalst announced that he would be leaving EEA in a few months, expressed his appreciation for the unique contribution of EMEP, and encouraged further collaboration between EEA and EMEP. Several delegations expressed their appreciation for the work of Mr. van Aalst over the years and wished him well in his new challenges.

53. Ms. M. WICHMANN-FIEBIG, representing EC, reported on recent development in the CAFE programme. She stressed the importance of the EMEP models and their performance, and especially of the baseline scenarios, for the further development of CAFE. She also gave

information about a position paper on PM that was being prepared within the European Commission and progress with the daughter directives to the 1996 Framework Directive on Air Quality.

54. Mr. F. RIES (Joint Research Centre (JRC)) highlighted its contribution to the City Delta project. He stressed that the EMEP station in JRC was being developed into a superstation for monitoring PM, and noted that JRC hosted the world data centre for aerosols. The main items on the research agenda of JRC included PM, aerosols, long-range transport of pollutants, and the link between atmospheric pollution and economics. He drew attention to a new infrastructure for research which was being developed within the new Atmospheric Composition Change: a European Network (ACCENT), a follow-up to the Eureka Environmental Project on the Transport and Chemical Transformation of Environmentally Relevant Trace Constituents in the Troposphere over Europe (EUROTRAC), and highlighted that there would be a need for coordination in order to avoid overlaps with EMEP activities.

55. Mr. J. SCHNEIDER (WHO/ECEH, Bonn office) presented the recent findings of WHO/ECEH and the main conclusions of the sixth meeting of the Joint WHO/Convention Task Force on the Health Aspects of Air Pollution. He noted that results of an in-depth review of health effects from PM, ozone and NO₂ were now available on the internet at <http://www.euro.who.int/document/e79097.pdf>. This review confirmed the association of PM exposure with severe health impacts including mortality. Based on these findings, a recommendation was adopted to use fine particulate matter (PM_{2.5}) as the indicator for health effects induced by particulate pollution such as increased risk of mortality. The review also acknowledged the evidence that ozone produced short-term effects on mortality and respiratory morbidity, even at the low ozone concentrations experienced in many cities in Europe. This indicated that the AOT60 approach, which had previously been applied to include ozone-related health effects, might no longer be appropriate. WHO would continue its collaboration with EMEP and in particular with CIAM to support efforts to integrate health effects caused by PM and ozone into the integrated assessment modelling framework.

56. Mr. T. JOHANNESSEN gave information about ongoing activities of AMAP, including the updating of assessments of POPs and heavy metal contamination of the Arctic, effects of acidification in the Arctic, ongoing projects on pollution remediation in the Arctic, and work on source identification and modelling of long-range atmospheric transport of contaminants. He also reported that AMAP was currently developing its future strategic plan with a view to further serving the needs of conventions and protocols. In particular, the AMAP monitoring and assessment activities had considerable potential to support the instruments to the Convention and its protocols that cover "effectiveness and sufficiency assessment" as well as documenting new substances that might be considered for inclusion under the agreements. He expressed the willingness of AMAP not only to continue, but also to further strengthen, the existing cooperation

between AMAP and UNECE/EMEP activities. He also stressed that if the EMEP Steering Body had specific requests on issues that AMAP could contribute to, either through its ongoing work on acidification assessment, modelling, etc. or through new activities that might be established, AMAP would be happy to take these into consideration in the development of its future work-plan.

57. The secretariat drew attention to the final EUROTRAC brochure that had been provided to the Steering Body by the EUROTRAC secretariat.

58. The Steering Body took note of this information with appreciation, welcomed the useful cooperation, expressed its gratitude to the organizations for their contributions to EMEP and stressed the importance of continued cooperation.

VI. WORK-PLAN FOR 2004

59. The secretariat introduced the draft work-plan for 2004 (EB.AIR.GE.1/2003/10) prepared on the basis of the long-term priorities up to 2004 (EB.AIR/GE.1/2001/9) adopted by the Steering Body at its twenty-sixth session and input by the Task Forces and centres.

60. The Steering Body:

(a) Requested the secretariat to amend the work-plan to reflect the decisions taken by it during the present session and the suggestions made by delegations under this agenda item concerning section 2.1 (intro), 2.2 (d) and (e), 2.3 (d) and (e), 2.6(d), 2.7 (intro) and 2.8 (a);

(b) Thanked the delegation of Sweden for its willingness to host a workshop on the emissions, transport, deposition and effects of base cations in relation to acidification on 26-28 November 2003;

(c) Agreed on the draft work-plan for 2004 as presented in document EB.AIR.GE.1/2003/10, as amended, and recommended it to the Executive Body.

VII. FINANCIAL AND BUDGETARY MATTERS

61. The secretariat introduced the note on financial and budgetary matters (EB.AIR/GE.1/2003/11), informing the Steering Body on the current state of contributions. An updated table presented the state of contributions was circulated during the session. The note also presented the budget proposal for 2004 prepared on the basis of the decisions of the Bureau and the decision by the Executive Body on the overall budget levels for the period 2004 to 2006. The secretariat also drew attention to issues related to the proposed decisions (below).

62. The delegation of Poland expressed its concern that, in view of the increase in its EMEP contribution in 2004, it might have difficulties ensuring a full and timely payment in 2004. The

delegation of Germany announced that it had to reserve its position with respect to the budget for 2004 and the period thereafter. The delegation of the Russian Federation indicated the need for having a stable scale of contributions to EMEP and requested that this should be drawn to the attention of the Executive Body.

63. The Steering Body:

(a) Took note of the status of contributions to the financing of EMEP provided in document EB.AIR/GE.1/2003/11 and the additional information provided by the secretariat during the session;

(b) Welcomed the payment by Serbia and Montenegro of its arrears and agreed not to pursue the arrears of the former Yugoslavia dating back to the period before 1992, as recommended by its Bureau;

(c) Approved the use of resources by the EMEP centres in 2002 presented in table 2 of document EB.AIR/GE.1/2003/11;

(d) Also approved the 2002 contribution in kind from Belarus to MSC-E;

(e) Agreed on the detailed budget for 2004 set out in table 3 of document EB.AIR/GE.1/2003/11 and the schedule of mandatory contributions from Parties for 2004 set out in the last column of table 4 of that document;

(f) Also agreed on the proposed budget of CIAM for 2004 and the proposed provisional budget levels for 2005 and 2006 set out in the report of the Task Force on Integrated Assessment Modelling (EB.AIR/GE.1/2003/4, para. 59);

(g) Recommended the Executive Body to adopt the budgets agreed and the schedule of contributions for 2004;

(h) Called upon the Parties to the EMEP Protocol to consider making additional voluntary contributions (in kind or in cash through the Trust Fund) to ensure that the work, especially the difficult tasks required in 2004 for the preparation of the protocol reviews, including the work on integrated assessment modelling, could be accomplished as foreseen in the work-plan;

(i) Recommended the Executive Body to take account of the accession of Romania to the EMEP Protocol and to amend the Protocol by adopting, in accordance with its article 4, paragraph 3, the revised annex set out in the annex to document EB.AIR/GE.1/2003/11;

(j) Took note of the reservation expressed by Germany with regard to the United Nations scale of assessments, the revised scale of contributions to EMEP and the revised annex set

out in the annex to document EB.AIR/GE.1/2003/11;

(k) Drew the attention of the Executive Body to the need for maintaining a stable scale of contributions to EMEP.

VIII. ELECTION OF OFFICERS

64. The Steering Body re-elected Mr. J. Schneider (Austria) as Chairman. It also re-elected Mr. S. Doytchinov (Italy), Mr. P. Grennfelt (Sweden), Mr. J. Santroch (Czech Republic), Ms. S. Vidic (Croatia), and Ms. M. Wichmann-Fiebig (European Community) as Vice-Chairpersons and elected Mr. K. Wieringa (Netherlands) and Mr. J. Rea (United Kingdom) as new Vice-Chairpersons.

65. The Steering Body expressed its great appreciation to Mr. Henning Wüester, who had left the UNECE secretariat to join the secretariat of the United Nations Framework Convention on Climate Change, for his great support to EMEP over the previous years.

IX. OTHER BUSINESS

66. There were no issues for consideration under this agenda item.

X. CLOSING OF THE TWENTY-SEVENTH SESSION

67. Based on an informal outline of the report, presented by the secretariat, the Steering Body agreed on the main decisions taken during the session.

68. The twenty-eighth session of the EMEP Steering Body was scheduled to take place on 6 - 8 September 2004.