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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

Working Group on Effects

Second joint session*

Geneva, 13–16 September 2016

Report of the second joint session of the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe and the Working Group on Effects

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* The Executive Body to the Convention agreed that, as of 2015, the Working Group on Effects and the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe should meet jointly, to achieve enhanced integration and cooperation between the Convention's two scientific subsidiary bodies (ECE/EB.AIR/122, para. 47 (b)).



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I. Introduction

1. The Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) and the Working Group on Effects under the United Nations Economic Commission for Europe (ECE) Convention on Long-range Transboundary Air Pollution (Air Convention) held their second joint session from 13 to 16 September 2016 in Geneva, Switzerland.

A. Attendance

2. The session was attended by representatives from the following Parties to the Convention: Albania, Armenia, Austria, Azerbaijan, Belarus, Bulgaria, Croatia, Czechia, Denmark, Estonia, European Union, Finland, France, Germany, Hungary, Ireland, Italy, Kyrgyzstan, Latvia, Lithuania, Montenegro, Netherlands, Norway, Poland, Republic of Moldova, Russian Federation, Serbia, Slovakia, Spain, Sweden, Switzerland, Ukraine, United Kingdom of Great Britain and Northern Ireland and United States of America. A delegate from Tajikistan also attended the meeting.

3. Also participating were representatives of the five EMEP Centres: the Centre for Integrated Assessment Modelling (CIAM); the Centre on Emission Inventories and Projections (CEIP); the Chemical Coordinating Centre (CCC); the Meteorological Synthesizing Centre-East (MSC-E); and the Meteorological Synthesizing Centre-West (MSC-W). Representatives from the following scientific centres and bodies under the Working Group on Effects participated: the Coordination Centre for Effects (CCE) and its International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends (ICP Modelling and Mapping); the Joint Task Force on the Health Aspects of Air Pollution (Task Force on Health); the Programme Centre of the International Cooperative Programme on Assessment and Monitoring of the Effects of Air Pollution on Rivers and Lakes (ICP Waters); the Programme Centre of the International Cooperative Programme on Effects of Air Pollution on Materials, including Historic and Cultural Monuments (ICP Materials); the Programme Centre of the International Cooperative Programme on Effects of Air Pollution on Natural Vegetation and Crops (ICP Vegetation); the Programme Centre of the International Cooperative Programme on Integrated Monitoring of Air Pollution Effects on Ecosystems (ICP Integrated Monitoring); and the Programme Coordinating Centre of the International Cooperative Programme on Assessment and Monitoring of Air Pollution Effects on Forests (ICP Forests). Also in attendance were the Chairs of the Executive Body for the Convention and the Working Group on Strategies and Review.

4. Also present were representatives of the following international organizations: the Arctic Monitoring and Assessment Programme (AMAP); the Asia Center for Air Pollution Research (ACAP) of the Acid Deposition Monitoring Network in East Asia (EANET); the Climate and Clean Air Coalition; the OSPAR Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission); the United Nations Environment Programme (UNEP) Regional Office for Europe; the World Health Organization (WHO) and its Regional Office for Europe; and the World Meteorological Organization (WMO).

B. Organizational matters

5. Ms. Laurence Rouïl (France) and Mr. Peringe Grennfelt (Sweden) chaired the joint session. The provisional agenda (ECE/EB.AIR/GE.1/2016/1–ECE/EB.AIR/WG.1/2016/1) was adopted, as amended.¹

6. The EMEP Steering Body and the Working Group on Effects adopted the report of their first joint session (ECE/EB.AIR/GE.1/2015/2–ECE/EB.AIR/WG.1/2015/2).

7. Following elections, Ms. Rouïl was re-elected as Chair of the EMEP Steering Body. Mr. Xavier Querol (Spain), Mr. Nebojsa Redzic (Serbia), Ms. Sonja Vidič (Croatia) and Mr. Rudolf Weber (Switzerland) were re-elected as Vice-Chairs. All Bureau members were elected for a two-year term. The Steering Body noted with appreciation the support provided by the outgoing Vice-Chair, Paul Ruysenaars (Netherlands).

8. Following elections, Ms. Isaura Rabago (Spain) was elected as the new Chair of the Working Group on Effects for a two-year term. Ms. Sabine Augustin (Switzerland), Mr. Jesper Bak (Denmark), Mr. Thomas Dirnböck (Austria), Mr. Nebojsa Redzic (Serbia) and Ms. Gudrun Schuetze (Germany) were re-elected as Vice-Chairs for a two-year term of office. The Working Group on Effects noted with appreciation the significant support provided by Mr. Grennfelt, the outgoing Chair, and Ms. Vidič, who had served as Vice-Chair.

II. Matters arising from recent meetings of the Executive Body and its subsidiary bodies and activities of the Bureaux of the Steering Body and the Working Group on Effects

9. The Chair of the Executive Body presented the highlights of the thirty-fourth and thirty-fifth sessions of the Executive Body (Geneva, 18 December 2015 and 2–4 May 2016, respectively). The Executive Body had adopted the 2016–2017 workplan for the implementation of the Convention (ECE/EB.AIR/133/Add.1) with a modified format; basic and multi-year activities in the period 2016–2017 had been moved to a separate document.² The Executive Body had also welcomed the launch of the *Towards Cleaner Air: Scientific Assessment Report 2016* (2016 Assessment Report),³ and had set up an expert group to elaborate a draft policy response to it for consideration by the Executive Body at its thirty-seventh session in 2017. The Executive Body had also discussed the financial situation of CCE, stressing the need to find additional funds to ensure the Centre's functioning with a reduced scope of activities in 2017.

10. The secretariat drew attention to the main outcomes of the Eighth Environment for Europe Ministerial Conference (Batumi, Georgia, 8–10 June 2016). Twenty-nine Convention Parties and other stakeholders had made voluntary commitments (see

¹ Information and documentation for the meeting, including informal documents and presentations, can be found on a dedicated web page for the meeting ([http://www.unece.org/index.php?id=40002#/#](http://www.unece.org/index.php?id=40002#/)).

² See informal document “Basic and multi-year activities in the 2016-2017 period” on the web page for the Executive Body’s thirty-fourth session ([http://www.unece.org/index.php?id=38060#/#](http://www.unece.org/index.php?id=38060#/)).

³ Rob Maas and Peringe Grennfelt, eds. (Oslo, 2016), available from <http://www.unece.org/environmental-policy/conventions/envlrtapwelcome/publications.htm>. There is a separate report for North America by the United States Environmental Protection Agency and Environment and Climate Change Canada *Towards Cleaner Air: Scientific Assessment Report 2016 — North America* (2016, online report).

ECE/BATUMI.CONF/2016/INF/39) to improve air quality under the Batumi Action for Cleaner Air (ECE/BATUMI.CONF/2016/7).

11. The co-Chairs presented a brief summary of the work of the Bureaux of the EMEP Steering Body and the Working Group on Effects (see ECE/EB.AIR/GE.1/2016/9–ECE/EB.AIR/WG.1/2016/17), highlighting the approval of the 2016 Assessment Report. The two Bureaux had discussed the implementation of the 2016–2017 workplan and emerging and budgetary issues. Special attention had been given to the financial situation of CCE.

III. Adjustments under the Protocol to Abate Acidification, Eutrophication and Ground-level ozone

12. The Chair of CEIP presented the outcome of the review of Parties' requests for adjustments under the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) to inventories for the purposes of comparing total national emissions with them (see ECE/EB.AIR/GE.1/2016/10–ECE/EB.AIR/WG.1/2016/18).⁴ In 2016, two Parties (Germany and Luxembourg) had submitted new requests for adjustments and seven Parties (Belgium, Denmark, Finland, France, Germany, Luxembourg and Spain) had submitted requests to adjustments approved prior to 2016. In all cases, the additional guidance adopted in 2014 (ECE/EB.AIR/130) had helped countries to prepare their applications, but additional information had still been needed to assess all the adjustment requests.

13. The adjustment review had been performed in parallel with the Stage 3 review. The adjustment review had been carried out by CEIP, which had named a lead reviewer and eight sectoral experts (from six Parties), selected from the roster of emission experts. Each reviewed sector had then been analysed by two independent reviewers, while the lead reviewer had coordinated the work to ensure that the same approach was used for all sectors, Parties and years.

14. When submitting their requests for adjustments, Parties had voluntarily prepared and submitted the "Declaration on consistent reporting of approved adjustments". That task had been facilitated by some information prepared by CEIP and made available on its website, related to the evolution in time of adjustments that should be kept consistent. The reviewers had found that the online information had been helpful in making the review process more efficient and faster. It was recommended that Parties continue to submit such statements on an annual basis along with the submitted data.

15. In the road transport sector, there was a need for Parties to provide transparent information about the emission factors that had been assumed, particularly when making the "original" emission estimates. For such calculations, the reviewers considered it best practice to continue to use the European Emission Standards Euro 4, as they reflected the information that had been available at that time, rather than emission factors that had been established after the 2010 emission ceilings had been set and agreed.

16. The CEIP Chair underscored that in 2016 Parties that had submitted adjustment applications had supported the review process in kind, by providing an expert, or with a cash contribution to CEIP, as recommended by the Executive Body at its thirty-second session. Such technical and financial support was appreciated and Parties should continue

⁴ See also documentation provided on the CEIP website:
http://www.ceip.at/adjustments_gp/adj_country_data/.

to provide similar support in future years. Otherwise, it might not be possible to carry out the adjustment review owing to an insufficient number of reviewers or insufficient financial resources.

17. The CEIP Chair recommended that Parties continue to use the same reporting format for information on previously approved adjustments, i.e., using the same units and the same level of aggregation across the emission source sectors. If those conditions were met, the data handling systems could process the information provided in different submissions in a consistent manner.

18. As set out in the CEIP report on adjustment applications, the expert review team recommended that:

(a) The new adjustment applications of Germany (road transport: nitrogen oxides (NO_x); agriculture: NO_x and ammonia (NH₃)) and Luxembourg (agriculture: NO_x and non-methane volatile organic compounds (NMVOC)) be accepted;

(b) The adjustment applications approved in 2014 and 2015 as reported in 2016 of Belgium (road transport: NO_x; agriculture: NO_x and NMVOC), Denmark (agriculture: NH₃ and NMVOC), Finland (stationary combustion, road transport: NH₃), France (road transport: NO_x), Germany (agriculture: NO_x and NMVOC), Luxembourg (road transport: NO_x) and Spain (road transport: NO_x) be accepted.

19. The EMEP Steering Body and the Working Group on Effects took note of the presentations concerning the expert review of the requests for adjustments to emission inventories (adjustment applications) provided by CEIP and:

(a) Decided to approve all the recommendations put forward by the expert review team, following a discussion by the Parties;

(b) Requested Parties to follow the recommendations issued by CEIP (see paras. 15–17 above) when preparing and submitting their applications for adjustments.

IV. Progress in the activities under the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe in 2016 and future work

20. The Chair invited participants to separately discuss each area of work, considering progress made in 2016 with respect to the 2016–2017 workplan for the implementation of the Convention.

21. It was noted that all the status reports relevant for the evaluation of progress in implementation of the 2016–2017 workplan had been prepared by the EMEP Centres on time and were all available on the EMEP website.⁵ The Steering Body and the Working Group approved the executive summaries of the status reports and decided to present the summaries to the Executive Body. They further acknowledged the work carried out by all EMEP Centres and task forces and supported the continuation of their work in the next biennium (2018–2019).

⁵ See www.emep.int.

A. Emissions

22. A co-Chair of the Task Force on Emission Inventories and Projections reported on progress, including the results of the joint Task Force and European Environment Agency (EEA) European Environment Information and Observation Network (EIONET) meeting (Zagreb, 17–18 May 2016) and a joint technical workshop with the Task Force on Measurements and Modelling, held on the preceding day (16 May), on condensables and semi-volatile compounds. Both Task Forces had worked to establish short- and long-term goals related to gaining a better understanding of the condensable/semi-volatile components of particulate matter. The Task Force on Emission Inventories and Projections recommended that more information be collated (through a questionnaire) on Parties' reporting of condensables and semi-volatiles as part of particulate matter reporting.

23. The Task Force co-Chair gave an overview on the updated chapters of the EMEP/EEA air pollutant emission inventory guidebook (EMEP/EEA Guidebook) and recommended that the Steering Body adopt the new chapters for use as of 2017. The European Environment Agency would publish the new version of the EMEP/EEA Guidebook following the second joint session.

24. The Task Force co-Chair presented an updated approach to the technical review of emission inventories, and there was discussion about the introduction of technical corrections. He explained that the updated approach would better support capacity-building, and recommended its use for technical reviews scheduled in 2017. The effectiveness of the new approach would be reviewed, in particular to assess any impacts on the resources required.

25. A representative of CEIP provided information on the status of reporting of emissions, including gridded and large point source data, with regard to the completeness and consistency of reported data. Out of 51 Parties, 46 (i.e., 90 per cent) had submitted data in 2016. No emission data had been received from Albania, Belarus, Bosnia and Herzegovina, Greece and Montenegro. CEIP had noted improved reporting from some countries in Eastern Europe, the Caucasus and Central Asia. An overview of the data submitted by Parties during the 2016 reporting round was available on the CEIP website.

26. All emission inventories submitted by Parties had been tested and imported into the CEIP central database. The review of inventories had been performed in three stages, in line with the EMEP review guidelines, and all the review results had been provided to Parties and presented in the CEIP technical inventory review report 1/2016. The CEIP representative also provided information on an updated proposal for Stage 3 reviews for 2017, the results of testing the new gridding system, the preparation of data for modellers, expert estimates for emissions of heavy metals and persistent organic pollutants (POPs) on a sectoral level, work on uncertainty assessment and black carbon inventories, and support provided to the Implementation Committee. A summary of progress on emission reporting was provided in document ECE/EB.AIR/GE.1/2016/7–ECE/EB.AIR/WG.1/2016/15.

27. A representative of the European Union provided information on the planned review of emission inventories under the revised European Union National Emission Ceilings Directive.⁶ The first review was to be carried out in 2017. To avoid an additional administrative burden, the emission reporting requirements in the revised Directive had been aligned with the requirements under the Convention, including the deadline for

⁶ Directive (EU) 2016/2284 of the European Parliament and of the Council of 14 December 2016 on the reduction of national emissions of certain atmospheric pollutants, amending Directive 2003/35/EC and repealing Directive 2001/81/EC.

reporting. The scope of the review covered the main air pollutants identified in the amended Gothenburg Protocol.

28. The Steering Body and the Working Group:

(a) Requested the Task Force on Emission Inventories and Projections to collate information on the details of reporting by Parties of condensables and semi-volatiles as part of particulate matter emission reporting, and to submit the information for consideration at the third joint session in September 2017;

(b) Requested the secretariat to inform Parties that the new version of the EMEP/EEA Guidebook should be used for emission reporting in 2017;

(c) Approved the updated Emission Review Guidelines for the Technical Review of Air Pollutant Emission Inventories Reported under the Convention and its Protocols,⁷ and recommended its use for technical reviews scheduled for 2017, with the evaluation of the consequences of its implementation in terms of necessary resources (time of experts, financial resources);

(d) Welcomed the planned review of national emission inventories in 2017 in the framework of the revised National Emission Ceilings Directive, and called for further cooperation between the Convention and the European Union on the reviews;

(e) Noted the increased workload for CEIP in 2016–2018 connected with testing and use of the new gridding system, expert estimates for heavy metals and POPs on the sectoral level, the assessment of inventory uncertainties, tasks related to black carbon inventories and the assessment of condensables;

(f) Noted that within the transition period (2016–2018) between the current (50 x 50 kilometre) grid and the higher spatial resolution, there would be a need to develop gridded data in both gridding systems to ensure consistent time series for use in environmental analyses;

(g) Noted that the completeness and consistency of reported inventories were still not sufficient, while between 25 per cent (for main pollutants) to 70 per cent (for heavy metals and POPs) emissions had to be estimated to fill the gaps, and invited Parties to report emission data in a timely fashion and in accordance with the agreed formats;

(h) Noted the results of comparisons of CEIP data with Evaluating the CLimate and Air Quality ImPacts of Short-livEd Pollutants (ECLIPSE) data,⁸ and noted that the differences between the two data sets were getting smaller in recent years;

(i) With regard to review planning:

(i) Approved the following list of Parties scheduled for Stage 3 reviews in 2017: Albania, Armenia, Austria, European Union, Kazakhstan, Kyrgyzstan, Lichtenstein, Malta, Monaco and Montenegro;

(ii) Postponed the review of Finland, at its request, until 2018;

(iii) Invited Parties scheduled for an in-depth review in 2017 to submit their Nomenclature for Reporting tables and Informative Inventory Reports within the deadlines, in order to enable the reviews to take place, and requested the secretariat to send letters to those Parties to remind them about that obligation;

⁷ Available on the meeting web page as an informal document under item 4 (b).

⁸ Ibid.

(j) Requested Parties facing national challenges with respect to the completeness and quality of emission reporting to present their experiences during the third joint session of the Steering Body and the Working Group.

B. Measurements and modelling

29. A co-Chair of the Task Force on Measurements and Modelling reported on progress, including the results of the Task Force's seventeenth meeting (Utrecht, the Netherlands, 18–20 May 2016). In 2015–2016, key activities had included the publication of an assessment of trends in air pollution in the EMEP domain, an initiative to better constrain condensable emissions in atmospheric dispersion models and a new project on the added value of twinning urban and rural sites to understand the contribution of long-range transport to urban air pollution. In addition to regular activities, representatives of the EMEP modelling centres presented options to reach higher spatial resolution, in particular for nitrogen dioxide (NO₂) and benzo(a)pyrene (B[a]P), while CCC proposed to organize a workshop on measurement quality and reporting data flows. The co-Chair said that, at its next meeting (Prague, May 3–5, 2017), the Task Force would decide about future thematic studies. Existing options for thematic studies included a field campaign on aerosol chemical characterization, the optical properties of black carbon, or a study focused on ozone in the Mediterranean area.

30. A representative of MSC-E outlined recent activities in the field of POP pollution assessment undertaken by MSC-E and CCC. Information on the pollution of the EMEP region by four polycyclic aromatic hydrocarbons, dioxins and furans, hexachlorobenzene and polychlorinated biphenyls in 2014, based on reported anthropogenic emissions, modelling results and measurements, was presented. The main emphasis had been given to the evaluation of polycyclic aromatic hydrocarbon pollution levels in the EMEP domain, including B[a]P air concentrations in urban areas. Along with that, particular attention had been paid to the cooperation and exchange of information on POP pollution between MSC-E and international organizations, along with the dissemination of pollution assessment results.

31. A representative of MSC-E presented an overview of activities on heavy metal pollution assessment, focusing on the improvement of assessment quality, recent research developments and scientific cooperation. He highlighted progress in the work at CCC and MSC-E, discussions within the Task Force on Measurements and Modelling and elements of the workplan for 2017. He also provided information on the recent developments with respect to transition of heavy metal operational modelling to the new EMEP grid. Particular attention had been paid to cooperative work on a country-scale assessment of heavy metal pollution within the EMEP case studies for Belarus, Poland and the United Kingdom, and scientific cooperation with other international bodies including AMAP, the Minamata Convention on Mercury (Minamata Convention) and UNEP.

32. A representative of MSC-W gave an overview of the activities on modelling of acidification, eutrophication and photo-oxidants, focusing on improvements in the EMEP model performance in the new EMEP grid. A downscaling methodology for urban applications (with a focus on health-relevant species) had been developed and applied for some Nordic cities, showing promising results compared with measurements. The climate effects of the amended Gothenburg Protocol had been estimated using a simplified approach, and showed a regional (European) climate impact of the Gothenburg Protocol in the order of 0.05 degree, but with large uncertainties. A discussion about international shipping emission estimates (and trends) to be used for EMEP modelling (initiated by the Baltic Marine Environment Protection Commission (HELCOM)) should be taken into

account for the preparation of emissions and modelling in 2017 and beyond. The results of an analysis of the impacts of ozone on ecosystems stemming from cooperation with ICP Vegetation and other ecosystem modellers were presented.

33. A representative of CCC outlined the status of the particulate matter levels in rural Europe in 2014, with a specific focus on the large-scale winter and spring episodes. There was a need to continue the focus on implementation of the EMEP Monitoring Strategy 2010–2019 (ECE/EB.AIR/GE.1/2009/15)⁹ to increase the spatial coverage and completeness. Nevertheless, there had also been several positive developments, e.g., the increased number of components and measurements reported and the increasing use of the monitoring data. The growth in the volume and complexity of the data reported had delayed the timeliness of reporting and incorporation of those data in the database. Measures had been implemented to improve and speed up that process. There had been relatively little attention given to data quality for inorganic compounds, heavy metals and POPs compared with, e.g., aerosol measurements, in recent years. A workshop on data reporting and data quality would therefore be arranged at CCC in October 2016.

34. The Steering Body and the Working Group:

(a) Reiterated the need for further cooperative work between the emissions and modelling communities on defining appropriate and consistent methodologies regarding the treatment of condensables and semi-volatile organic compounds in inventories and in EMEP modelling;

(b) Reiterated the need to continue work on quality assurance and quality control to maintain a high quality of EMEP monitoring in line with the EMEP Monitoring Strategy 2010–2019;

(c) Recognized the need to enhance long-term cooperation between EMEP and other subsidiary bodies under the Convention, and also with AMAP, the Minamata Convention, the Stockholm Convention on Persistent Organic Pollutants (Stockholm Convention) and UNEP, in order to enhance the transfer of scientific knowledge and strengthen capacity at both the regional and global level.

C. Integrated assessment modelling

35. The Chair of the Task Force on Integrated Assessment Modelling reported on the findings of the Task Force's forty-fifth meeting (Lisbon, 23–25 May 2016) and the progress in scenario development and modelling (see ECE/EB.AIR/GE.1/2016/5–ECE/EB.AIR/WG.1/2016/13). A wide range of research topics had been identified during the work on the 2016 Assessment Report, inter alia: emission data; dispersion modelling; health and other impacts; cost-effective control strategies for hemispheric air pollution; and outreach beyond the ECE region. Some climate policies could pose air pollution risks — especially in case of wood burning, diesel and direct injection gasoline cars, biofuels and biodigesters; the Task Force therefore agreed that an integrated climate-air policy approach was needed. National integrated assessment modelling had been carried out, for example, in the Russian Federation within the framework of a 2015–2017 project financed by the Nordic Council of Ministers.

36. The head of CIAM briefed participants about the recent updates in the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS)¹⁰ model and on the results of the

⁹ Available from <http://www.unece.org/env/lrtap/emep/strategies.html>.

¹⁰ See <http://gains.iiasa.ac.at/models/>.

analysis of national inventories, carried out with the support of national experts. Key conclusions of the analysis included:

(a) There was major incoherence in particulate matter inventories owing to inconsistent accounting of condensables. Further evolution of emission inventories had revealed important new information, but required further validation;

(b) Current models only partially captured the inequalities in emissions and air quality impacts;

(c) There was a need for a review of the methodologies for health impact assessment;

(d) The ageing of societies was an important factor that might counteract benefits of air pollutant emission reductions.

V. Call for Data

37. The head of ICP Materials reported on developments and the outcomes of the thirty-second meeting of the ICP Materials Task Force (Rome, 11–13 May 2016). A new Party, Croatia, had joined ICP Materials in 2016. The knowledge and experience gained during the pilot project on the inventory and condition of stock of materials at risk at United Nations Educational, Scientific and Cultural Organization (UNESCO) cultural heritage sites would be disseminated within the framework of the ongoing “Call for Data”. A new exposure programme, consisting of two sets of samples exposed for one and four years, respectively, would be launched in 2017.

38. He also presented an update on the 2015–2017 Call for Data launched in October 2015, as approved at the first joint session of EMEP Steering Body and the Working Group on Effects. The purpose of the Call was to offer interested Parties the opportunity to retrieve any available documented information on the UNESCO cultural heritage sites for the assessment of the stock of materials at risk and for the analysis of the impacts of air pollutant concentrations for various pollution and environmental scenarios. Following the recommendation of the first joint session, the deadline for the submission of data had been moved to 30 June 2017. The collection and the analysis of data would be completed within a three-year period. A dedicated web page had been added to the ICP Materials website¹¹ where all the relevant information related to the Call was available. To date, Croatia, Germany, Italy, Norway, Sweden and Switzerland had declared interest in responding to the Call.

39. The EMEP Steering Body and the Working Group on Effects welcomed the update on the Call for Data and the new exposure programme, and requested Parties to provide financial support for those two important activities.

VI. Progress in activities in 2016 and further development of effects-oriented activities

40. The Steering Body and the Working Group noted that all the reports relevant for the evaluation of progress in implementation of the workplan for 2016–2017 had been prepared by the Centres under the Working Group on Effects on time and were all available on their respective websites. The two bodies acknowledged the work carried out by all the ICP

¹¹ See <http://www.corr-institute.se/icp-materials/web/page.aspx?refid=20>.

programme centres and task forces and by the Joint Expert Group on Dynamic Modelling, and supported the continuation of their work in following years.

A. Air pollution effects on health

41. The Chair of the Task Force on Health presented the results of the nineteenth meeting (Bonn, Germany, 18–19 May 2016) and the following interactive training workshop on the use of the WHO AIRQ+ software to quantify the health impacts of air pollution, held on 20 May. The Task Force had discussed national and international policies and processes regarding air quality and health, and had reviewed the progress in research on the health impacts of air pollution.

42. The Task Force Chair informed participants about the ongoing update (2016–2020) of the WHO Ambient Air Quality Guidelines. The first scoping meeting would be held from 27 to 29 September 2016 to discuss, inter alia, the selection of pollutants, health outcomes and the methodology for guideline development. The European Union, the Swiss Federal Office for the Environment and the United States Environmental Protection Agency had provided financial support to carry out the update. She also presented World Health Assembly Resolution 68.8 on air pollution and health and related WHO activities.

43. The Steering Body and the Working Group:

(a) Took note of the progress in recent research on the health impacts of air pollution, and noted the key role of World Health Assembly resolution 68.8 in defining the current and future WHO activities related to air pollution;

(b) Identified new opportunities for enhanced collaboration between the Convention and WHO.

B. Critical loads and other issues related to modelling and mapping

44. The Chair of the ICP Modelling and Mapping Task Force informed participants about the ongoing work and main achievements in 2016, including the assessment of ecosystems exposure to air pollution realized by means of critical load exceedances maps prepared by CCE (a key input to the 2016 Assessment Report), and scenario analysis using the biodiversity-based critical loads (a contribution to the Effects of Climate Change on Air Pollution and Response Strategies for European Ecosystems (ECLAIRE) project).

45. The Task Force Chair provided an update on the 2015–2017 Call for Data issued by CCE. The Call was an opportunity to upgrade national and European acidification and eutrophication critical loads databases and to adapt them to the 0.5° x 0.25° longitude–latitude EMEP grid. ICP Modelling and Mapping recommended that the updated critical load database be used for integrated assessment modelling and policy support within the Convention. National Focal Centres from 16 Parties had declared their intention to respond to the Call by calculating biodiversity critical loads and by updating the acidification and eutrophication critical loads. In view of the reduced funding for CCE, the deadline for submission of data had been advanced to January 2017 so that the final analysis of the collected data could be completed by the end of 2017.

46. The Chair also reported on progress in updating the *Manual on Methodologies and Criteria for Modelling and Mapping Critical Loads and Levels and Air Pollution Effects*,

*Risks and Trends*¹² (Mapping Manual). The update of the Mapping Manual had started in 2014, and in 2015 the EMEP Steering Body and the Working Group on Effects had approved all the updated chapters except chapter 5. In 2016, the chapter 5 update had been finalized and ICP Modelling and Mapping recommended its adoption at the second joint session.

47. The Steering Body and the Working Group:

- (a) Noted the achievements of ICP Modelling and Mapping in 2016 and welcomed the progress of the Call for Data launched by CCE in the fall of 2015;
- (b) Approved the updated chapter 5 of the Mapping Manual;
- (c) Took note of the announced cuts to CCE funding and noted that ICP Modelling and Mapping work would be significantly affected (see paras 90–91 below).

C. Air pollution effects on the environment and crops

48. A representative of the ICP Forests Programme Coordinating Centre summarized the results presented at the thirty-second Task Force Meeting (Luxembourg, 12–13 May 2016) and the fifth scientific conference of ICP Forests (11 May 2016) (see ECE/EB.AIR/GE.1/2016/11–ECE/EB.AIR/WG.1/2016/4). Data management, data quality control and quality assurance at different levels and dissemination of scientific results continued to be a high priority for ICP Forests. Its members had published 20 scientific papers between May 2015 and May 2016 that at least partly included data from the ICP Forests database or data from ICP Forests monitoring plots. Seven of the papers had been highlighted as relevant for environmental policies. The fifth scientific conference had focused on the deposition, outputs and effects of nitrogen, sulphur and heavy metals on forest ecosystems; ozone levels, risks and effects; and climate change and the assessment of ecosystem responses.

49. The head of the ICP Waters Programme Centre reported on the results presented at the thirty-first Task Force meeting (Monte Verita, Switzerland, 6–8 October 2015) and the Task Force meeting organized jointly with ICP Integrated Monitoring (Asker, Norway, 24–26 May 2016). During the two meetings the Task Force had discussed the work accomplished in 2015–2016, focusing on key scientific findings and plans for 2017. The recent research had led to the conclusion that biodiversity would increase, provided that chemical recovery of lakes and streams continued. However, aquatic biodiversity might be impacted by climate change in the future. There was a continued need to fund biological monitoring programmes. In 2017–2018, two thematic reports were foreseen: on mercury and on the spatial extent of acidification.

50. Both the ICP Waters and ICP Integrated Monitoring communities had found the joint Task Force meeting useful and had decided to hold their next Task Force meetings jointly in Uppsala, Sweden, from 9 to 11 May 2017.

51. The Chair of ICP Integrated Monitoring reported on the key findings from recent research presented at the Task Force meeting organized jointly with ICP Waters in May 2016. For example, it had been found that measured nitrogen deposition exceeding the empirical critical loads led to eutrophication effects on biota, and sulphur accumulated in the past was released, with effects, in surface waters. No widespread regional increases in

¹² Task Force on Modelling and Mapping (Berlin, Federal Environmental Agency, 2004). Available from www.icpmapping.org/Mapping_Manual.

nitrate concentrations in surface waters had been observed, despite ongoing nitrogen accumulation in catchments. Also, mercury levels were increasing in the forest floor and mineral soil, with hazardous effects on biological activity and also providing extended possibilities for methylation and releases to surface waters.

52. The Chair of the ICP Vegetation Task Force summarized the outcomes of the twenty-ninth meeting of the Task Force (Dubna, Russian Federation, 29 February–3 March 2016). With respect to planned activities in 2017, he highlighted a report on revised ozone risk assessment methods for vegetation and a planned revision of chapter 3 of the Mapping Manual. Since 2015, the moss survey had been organized by the ICP Vegetation Coordination Centre at the Joint Institute for Nuclear Research at Dubna. Forty countries had participated in the 2015/16 survey, including seventeen countries of Eastern and South-Eastern Europe, the Caucasus and Central Asia, and six from Asia and Africa.

53. He also reported on cooperation with other ICPs and EMEP task forces and centres, in particular the contributions of ICP Vegetation to the joint workshop of the Task Force on Hemispheric Transport of Air Pollution and AMAP (Potsdam, Germany, 17–19 February 2016), and to three workshops on critical levels methodology, dose response functions and ozone critical level, held in the 2015–2016 period.

54. The Steering Body and the Working Group:

(a) Took note of the recent results of ICP Forests, as presented in several technical reports and scientific papers, and welcomed ICP Forests continued efforts to ensure high data quality and to maintain data control at different levels;

(b) Noted with appreciation ICP Waters continued work on biological and chemical recovery, and welcomed the joint work and joint task force meeting with ICP Integrated Monitoring;

(c) Took note of the recent results of ICP Integrated Monitoring, in particular, on priority work items;

(d) Took note of the recent results of ICP Vegetation presented in its recent reports and publications, and noted with appreciation the participation of 40 countries in the 2015/16 moss survey, notably from Eastern and South-Eastern Europe, the Caucasus and Central Asia (17 countries).

D. Follow-up on the review of the International Cooperative Programmes

55. The Chair of the Working Group on Effects reported on the implementation of the recommendations from the ICP review. Some of the ICPs had noted increased participation of national experts, but not all. In order to increase the credibility of the scientific work, efforts needed to be made to increase the participation in ICP activities also by scientists from outside of the community. ICP Integrated Monitoring and ICP Waters had held a joint workshop in 2016. Other ICPs should also explore possibilities for joint workshops and joint activities.

56. A voluntary, ad hoc group of experts — Mr. Phillip Moldan (Sweden), Mr. Jesper Bak (Denmark) and Mr. Walter Seidling (ICP Forests) — continued the exploration of options for setting up a common Working Group on Effects portal. The objective would be to improve the visibility of the effects work and to share in one place the data and knowledge collected by all the effects centres. Unfortunately, owing to various limitations, the portal could not be hosted on the ECE website. ICP Forests was continuing to investigate whether such a portal could be set up on its own website.

57. The Steering Body and the Working Group acknowledged the work of the ad hoc group, and requested that the issue be further investigated and discussed at the next meeting of the Bureaux of the Steering Body and the Working Group in March 2017.

VII. Thematic sessions

58. Joint thematic sessions were held to discuss three issues: the linkages between climate change and air pollution; benzo(a)pyrene and wood burning; and ozone issues. The sessions gave EMEP centres and task forces and ICPs under the Working Group on Effects the opportunity to present a number of results and conclusions from their work relevant to the key questions to be considered.

A. Linkages between climate change and air pollution

59. In a discussion on the linkages between climate and air pollution moderated by Mr. Rob Mass (Netherlands), participants addressed the following questions:

- (a) What is the evidence for linkages between climate change and air pollution?;
- (b) What should be the priorities in terms of linking climate change and air pollution policies?;
- (c) Which indicators could be followed to monitor air pollution impacts on climate?

Contributions to the session were provided by representatives from CCC, CCE, CIAM, ICP Integrated Monitoring, ICP Modelling and Mapping, ICP Vegetation, MSC-W, the Task Force on Health, the Task Force on Hemispheric Transport of Air Pollution and the Task Force on Measurements and Modelling.

60. Participants discussed and recommended various further actions to be included in the future workplan for EMEP and the Working Group on Effects. A workshop with experts from Europe and America could compare and evaluate findings of various studies on the relative contribution of methane, black carbon and other climate forcers to climate change, and methods to evaluate the regional and extraregional impacts of climate change on air pollution (e.g., how much were ozone levels expected to increase with higher temperatures?). Health studies should continue to investigate the impacts from climate forcers, particularly black carbon, and the emerging evidence of health effects from long-term (seasonal) exposure to ozone. The Working Group on Effects was advised to develop new indicators to assess the effect of nitrogen deposition and ozone exposure and their interactions on the resilience of ecosystems to climate change. Long-term high quality observation data were fundamental in assessing the interactions between air pollution and climate. Several climate or air pollution measures entailed conflicting abatement results. Integrated assessments should focus on win-win packages.

B. Benzo(a)pyrene and wood burning

61. In a discussion on benzo(a)pyrene and wood burning moderated by Mr. Xavier Querol (Spain), participants addressed the following questions:

- (a) What are the trends in benzo(a)pyrene emissions, concentrations and depositions?;
- (b) What are the major sources of uncertainties?;

- (c) What are the consequences for health?;
- (d) How could wood-burning emission estimates be improved?

Contributions to the session were provided by representatives from CCC, MSC-E, the Task Force on Health, the Task Force on Emission Inventories and Projections and the ICPs.

62. An extremely wide range of emission factor values for biomass combustion was used in the national particulate matter emission inventories. The quantification of emissions was very difficult because of, inter alia, various measurement methods, measurement arrangements and device types, and the variation of emission sources. Despite the noticeable decrease of B[a]P emissions and air pollution levels in the early 1990s, more recently emission levels had stabilized or even increased in some countries. According to recent measurements and modelling results, B[a]P pollution levels were still significant and exceeded the European Union target value of 1 nanogram per cubic meter (ng/m³) in areas with high population density. To provide information for exposure analysis, the EMEP modelling approach based on fine resolution modelling and multiple regression analysis could be used for the evaluation of pollution levels in hot spots across the EMEP domain.

63. The Testing and Development of Air Quality mitigation measures in Southern Europe (AIRUSE) LIFE project¹³ had provided evidence for biomass burning source contribution to ambient fine particles less than or equal to 2.5 micrometres in diameter (PM_{2.5}) in Southern European cities in the range <2–25 per cent on annual means. Emission factors for different types of stoves and boilers and a variety of biofuels were presented. It was recommended that:

- (a) Emission requirements for certification of small-scale combustion appliances be made mandatory in all countries;
- (b) The sale of firewood should be regulated, and chemically treated material should be prohibited in any quality class of pellets;
- (c) All pellets sold should be quality certified.

64. Residential wood combustion was an important contributor to the burden of disease from particulate matter. B[a]P was often attached to airborne particles, and therefore might play a role in their carcinogenicity. However, the dominating causes of deaths from particulate matter were from cardiovascular and cerebrovascular disease; only around 6 per cent of premature deaths from particulate matter could be attributed to lung cancer. The overall available evidence suggested that particulate matter from biomass combustion could be considered as harmful as particles from other sources.

65. Agricultural biomass burning was an important emission source of B[a]P and particulate matter in a number of regions in Europe. The Task Force on Emission Inventories and Projections and CEIP would liaise to draft and send a letter to national emissions inventory teams, reminding them that emissions from on-field burning (and other selected sources) should be estimated and included in their emissions inventory in Nomenclature for Reporting category 3F.

C. Ozone issues

66. During the segment on ozone issues moderated by Mr. Harry Harmens (United Kingdom), participants addressed the following questions:

¹³ See <http://airuse.eu/en/>.

- (a) What is the current scientific knowledge and understanding about ozone trends?;
- (b) What are the contributions to ozone levels of the hemispheric transport of air pollution and local air pollution peaks, especially in the Mediterranean area?;
- (c) What are the impacts on health and ecosystems?

Contributions to the session were provided by representatives from ICP Vegetation, Spain, the Task Force on Health, the Task Force on Hemispheric Transport of Air Pollution and the Task Force on Measurements and Modelling.

67. Participants in the session recommended further actions to be included in the future workplan for EMEP and the Working Group on Effects. To increase confidence in providing credible projections of future ozone levels in the EMEP region, the main factors contributing to past changes of peak and background ozone needed to be understood for relatively long periods (more than 20 years), including an analysis of the contributions of regional and extraregional emission trends to ozone concentration frequencies changes. Results of the global/multiregional ozone trend analysis activity in the Tropospheric Ozone Assessment Report (TOAR) needed to be assessed and interpreted. Analysis of total oxides (ozone plus NO₂ (Ox)) might facilitate understanding of trends and attribution by models. Application of the flux-based approach was required globally to identify the crops, ecosystems and regions most vulnerable to ozone pollution and climate change, including extreme events. Evidence was needed to assess impacts on vegetation in the current ozone profile, i.e., declining peaks and increased contribution of baseline ozone. Flux-effect relationships and model parameterizations for Mediterranean vegetation were available and needed to be applied in the EMEP model for a more accurate ozone risk assessment in that region. Emerging evidence on health effects from long-term (summer months) exposure to ozone would need to be considered to assess whether a new indicator was required for chronic ozone impacts on human health.

68. The Steering Body and the Working Group:

- (a) Welcomed all the contributions to the thematic sessions by the task forces and centres, including the excellent work done by the three moderators;
- (b) Discussed various elements and recommendations from the sessions (see paras. 59–67) and, in particular, recommended carrying out a study focused on benzo(a)pyrene in the Mediterranean area;
- (c) Recommended holding similar thematic sessions during future joint sessions, and requested the Steering Body Bureau to propose the subjects of the thematic sessions to be held at the third joint session.

VIII. Information sharing by Parties

69. A representative of Spain presented the outcomes of a study on the highest national ozone episodes. The analysis covered 2000–2015 ozone concentration data in 245 sites in north-east Spain, including a field campaign carried out in July 2015. The highest ozone episodes (exceeding the information threshold of 180 micrograms per cubic meter, 1-hour average) had both regional long-range and local components. To evaluate possible effects of mitigation measures (abatement of NO_x and volatile organic compounds), one needed to be able to forecast the episodes of synoptic stagnation dominated by vertical recirculation. Ozone problems were not limited to the exceedances of the information threshold (highest peaks), but also covered the exceedance of the human protection target and the sum of the

difference between hourly concentrations greater than 80 (= 40 part per billion) and the 80 micrograms per cubic meter over a given period (AOT40) target.

70. Two representatives of Sweden reported on recent improvements in the national emission inventory and on constructing national nitrogen budgets. There had been very few improvements in the Swedish national inventory during the past 10 years and a relatively large number of emissions remained “not estimated”, which could mean that total emissions were underestimated. In 2016, a completeness project had been implemented that had led to a wide use of default emission factors from the EMEP/EEA Guidebook. A new method for calculating emissions from tyre and brake wear and road abrasion had been introduced, while an improved method had helped to improve emission estimates from solvent use. Further improvements in the national inventory were foreseen for 2017. The national nitrogen budget for Sweden would be constructed (a three-year project) based on the methodology described in the guidance document on national nitrogen budgets (ECE/EB.AIR/119), which had been elaborated in connection with the amendment of the Gothenburg Protocol in 2012.

71. The Steering Body and the Working Group welcomed the information presented on the implementation of EMEP and effects-oriented activities in Spain and Sweden and recommended that further national experiences be presented at future joint sessions.

IX. Outreach efforts, information sharing and cooperation with other organizations and programmes

A. Hemispheric transport of air pollution

72. A co-Chair of the Task Force on Hemispheric Transport of Air Pollution reported on accomplishments in implementing the Task Force’s multi-year (2012–2016) workplan, in particular, global emission inventories, 2010–2050 benchmark scenarios, source-receptor modelling, air pollutant impact assessment and model and process evaluation focused on ozone. Other results presented included the outcomes of the February 2016 Task Force meeting organized jointly with AMAP. Potential for cooperation with AMAP included joint activities and assessments on mercury, POPs, black carbon, health and ecosystem impacts, emission scenarios and mitigation strategies. There had been wide cooperation between the Task Force, external partners and centres and task forces under EMEP and the Working Group on Effects.

73. The Steering Body and the Working Group:

(a) Acknowledged and supported the outreach efforts of the Task Force on Hemispheric Transport of Air Pollution towards other organizations (AMAP), in particular, in Asia and North America;

(b) Acknowledged the important contributions of Convention centres and task forces to the work of the Task Force, and the opportunities for greater cooperation with respect to effects-oriented activities.

B. Information sharing and cooperation with international organizations and programmes

74. A representative of ACAP informed participants about current and future activities under EANET, including the outcomes of the feasibility study on the expansion of the network’s scope and the key elements of the medium-term plan for EANET (2016–2020).

Examples of monitoring results were given with respect to NO_x, ozone and particulate matter. He highlighted the existing cooperation between the Convention and EANET and possibilities for its extension.

75. The Chair of the EMEP Steering Body delivered a presentation on behalf of the European Centre for Medium-Range Weather Forecasts on the Copernicus Atmosphere Monitoring Service (CAMS). CAMS, a programme of the European Commission, delivered information on the chemical composition of the atmosphere thanks to integrated use of in situ data, satellite retrievals and model results. Specifically, CAMS provided European air quality forecasts, analyses and interpretation of air pollution episodes. A number of possible areas for cooperation with the Convention had been identified; CAMS was particularly interested in getting near-real-time access to observation data available from the EMEP network, and was ready to support development data management tools to secure such access. Also, CAMS had developed its own high resolution emission inventory for the European domain, which could be compared to emission data reported within EMEP. Exchange of information on air pollution impacts between CAMS and the Convention should be organized.

76. A representative of the OSPAR Commission reported on the use of EMEP products by Parties to the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR). OSPAR had long used EMEP assessments in its calculations of pollution loads to the marine environment. For example, between 25 to 50 per cent of heavy metal and nitrogen loads to the North Sea came from the atmosphere. The availability of EMEP air pollutant source-receptor matrices and deposition data for OSPAR regions and national marine exclusive economic zones would make it possible to focus mitigation measures. Other European regional seas conventions were likely to have similar needs.

77. A representative of the secretariat of the Climate and Clean Air Coalition presented briefly its current activities and opportunities for cooperation, stressing the (non-State) partner status of ECE. The Coalition took a two-prong approach, focusing on both near-term and long-term climate actions. The two priorities were the Paris Agreement on climate change and the Sustainable Development Goals. There were three possible cooperation opportunities between the Convention and the Coalition:

(a) Development of joint Coalition/Convention methodology and guidance for reporting of black carbon emissions, based on the Long-range Energy Alternatives Planning System — Integrated Benefits Calculator (LEAP-IBC) toolkit used by the Climate and Clean Air Coalition and the emission guidance methodology developed under the Convention;

(b) A workshop on black carbon, with a focus on reporting emissions, metrics for accounting for impacts and financing black carbon mitigation efforts, in the first quarter of 2017, which the Coalition's Scientific Advisory Panel had proposed;

(c) A joint regional assessment of short-lived climate pollutants by the Coalition, the Convention and UNEP, to cover pan-European region with chapters zooming on specific subregions; the joint assessment could be included in the 2018–2019 workplan for the implementation of the Convention.

78. A representative of the interim secretariat of the Minamata Convention introduced the obligations under the Convention in relation to emissions, monitoring, reporting and evaluation. The first meeting of the Conference of the Parties would establish arrangements for obtaining comparable monitoring data to be used in effectiveness evaluation. The first evaluation would take place no later than six years after entry into force of the Convention. The deadline for submission of information relating to monitoring had been extended to 30 October 2016, and that information could be submitted by a broad range of stakeholders.

She also highlighted other work on mercury currently under way within the Chemicals and Wastes Branch within UNEP, and the need for cooperation and to avoid duplication. In that connection, there was a need to promote the current activities under EMEP.

79. A representative of the joint secretariat for the Basel Convention on the Control of Transboundary Movements of Hazardous Wastes and their Disposal, the Rotterdam Convention on the Prior Informed Consent Procedure for Certain Hazardous Chemicals and Pesticides in International Trade and the Stockholm Convention presented the outcomes of the first and second phases of implementation of the Global Monitoring Plan for POPs. The second global monitoring report provided an integrated assessment of POPs concentrations in the environment and in human populations globally. Monitoring data suggested that the existence of targeted regulations, including those that predated the Convention in some regions, was working towards reducing levels of POPs in the environment and in human populations. For legacy POPs, concentrations measured in the air and in human populations had declined or remain at low levels owing to restrictions on POPs that predated the Stockholm Convention. For the newly listed POPs, concentrations were beginning to show declining tendencies, although in a few instances increasing and/or stable levels were observed. Regulatory actions at the global level since the entry into force of the Convention, particularly for listed POPs that were still on the market, were expected to mitigate environmental concentrations in the long term.

80. A representative of WMO informed participants about the events and activities of the WMO/Global Atmosphere Watch Programme. She highlighted a number of activities and meetings of relevance for the Convention, and also those currently undertaken in cooperation with EMEP in areas of common interest, like the measurements of air pollutants and modelling activities. In particular, she noted that the next GAW symposium, which were held every four years, would be held in Geneva from 10 to 13 April 2017. That might be another area for cooperation, a topic that remained to be discussed.

81. A representative of UNEP updated participants on the implementation of United Nations Environment Assembly resolution 1/7 on air quality, focusing on related activities carried out by UNEP. During the Assembly's second session (Nairobi, 23–27 May 2016), no new resolution on air pollution had been adopted, but there had been a separate resolution on sand and dust storms. Both air quality and sand and dust storms would become a solid part of UNEP Programme of Work for 2018–2019. UNEP would continue to strengthen its cooperation on air quality with ECE, WHO and other partners.

82. A representative of AMAP submitted a presentation with concise information about AMAP activities and achievements, in particular the recent and ongoing assessments on mercury, black carbon, ozone and methane in the Arctic and the opportunities for an enhanced cooperation between AMAP and the Convention.

83. The Steering Body and the Working Group:

(a) Expressed their gratitude for the contributions made by AMAP, the Climate and Clean Air Coalition, EANET, the European Centre for Medium-Range Weather Forecasts, the Minamata and Stockholm Conventions, UNEP and WMO, and stressed the benefits and importance of continued cooperation and information sharing, including the exchange of relevant emission, monitoring, effects-related and other data;

(b) Recognized the need to enhance long-term cooperation between the Convention's scientific bodies and the relevant international processes and organizations, in particular AMAP, UNEP, WHO and partner organizations in Asia, and to reflect that cooperation in the future workplans for the implementation of the Convention.

X. Financial and budgetary matters

A. Funding of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

84. The secretariat introduced the note on financial and budgetary matters (ECE/EB.AIR/GE.1/2016/18–ECE/EB.AIR/WG.1/2016/11). The note presented the proposed schedule of mandatory contributions for 2017–2018 (table 3) — to be submitted to the Executive Body for approval — calculated on the basis of the 2015 United Nations scale of assessments¹⁴ and a revised annex to the EMEP Protocol, taking into account the accession to the Protocol by Republic of Moldova on 26 July 2016. The secretariat also reported on the status of the memorandums of understanding between ECE and the EMEP Centres.

85. The secretariat also drew attention to the ongoing implementation of an integrated administrative and financial system (UMOJA) at the United Nations. During the UMOJA introductory phase some of the financial operations might take longer to complete as compared with earlier procedures.

86. The Steering Body and the Working Group:

(a) Took note of the status of contributions to the financing of EMEP in 2016 set out in table 1 of the note on financial and budgetary matters, and the additional information provided by the secretariat during the session;

(b) Approved the use of resources by the EMEP Centres in 2015, as presented in table 2 of the note;

(c) Elaborated a proposal for the EMEP budget for 2017 for consideration and approval by the Executive Body at its thirty-sixth session. The total budget for 2017 would be the same as for 2016, but with a modified split between Centres — i.e., for CIAM \$155,000, for CCC \$840,000, for MSC-W \$570,000, for MSC-E \$475,000 and for CEIP \$250,000. In the case of CEIP, CCC and MSC-E, the proposed budget — in addition to funding for the Centres' mandatory activities — included funds to cover activities addressing the three emerging issues:

(i) Supporting Parties by providing gridding emissions tools and continuing the work on condensables and semi-volatile organic compounds in inventories (\$30,000, CEIP);

(ii) A study focused on benzo(a)pyrene in the Mediterranean area (\$20,000, MSC-E);

(iii) Support for the work on quality assurance and quality control with respect to EMEP monitoring (\$20,000, CCC);

(d) Recommended that the Executive Body adopt the 2017–2018 schedule of contributions as presented in table 3 of the note;

(e) Called upon the Parties to the Protocol on Long-term Financing of EMEP (EMEP Protocol) to consider making voluntary contributions to ensure that the work could be accomplished as foreseen in the 2016–2017 workplan;

¹⁴ See General Assembly resolution 70/245 on the scale of assessments for the apportionment of the expenses of the United Nations.

(f) Invited all Parties that had not yet paid their contributions for 2016 to do so as soon as possible;

(g) Invited the Bureau of the EMEP Steering Body to discuss the 2018 budget for the EMEP Centres at its next meeting in 2017, taking into account the progress in the implementation of the workplan for 2016–2017 and any emerging issues and needs.

B. Funding of core activities not covered by the Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

87. In line with revised decision 2002/1 of the Executive Body, the secretariat introduced the elements of the note relevant to the funding of core activities not covered by the EMEP Protocol, presenting updated information on cash contributions to the trust fund in 2015–2016.

88. The secretariat also presented information on the implementation of memorandums of understanding for 2016, and the preparation of new contracts. The current contracts for the Centres would be extended for another five-year period (until 30 June 2021).

89. The Steering Body and the Working Group:

(a) Took note of the relevant elements of the note on financial and budgetary matters, and decided to submit the information to the Executive Body;

(b) Invited the secretariat to provide information on the status of contributions to the trust fund for the effects-oriented activities as of 30 November 2016, and to make it available to the Executive Body at its thirty-sixth session;

(c) Recommended that the status of contributions be used as a basis for the budget to co-fund the effects-oriented activities in 2017;

(d) Requested the Executive Body to encourage Parties to make contributions to the trust fund before 30 November each year;

(e) Noted with appreciation the essential support provided to the Working Group on Effects and its effects-oriented activities by lead countries, countries and organizations hosting coordinating centres, organizing meetings and funding activities of their National Focal Centres, and also the active participation of national experts in the work under the Convention;

(f) Also noted with appreciation the amount of voluntary cash contributions made available in 2015–2016, but reiterated the invitation to all Parties that had not yet done so to provide to the trust fund for financing of the effects-oriented activities, without undue delay, the contributions decided by the Executive Body in its revised decision 2002/1;

(g) Stressed the need to ensure stable and long-term financing of effects-based activities, and noted the decreasing level of support from Parties for that important part of the Convention activities.

C. Financial situation of the Coordination Centre for Effects

90. The Steering Body and the Working Group discussed the difficult financial situation of CCE in the 2016–2017 period, acknowledged the long-term financial support to CCE

from the Netherlands and reiterated the importance of the Centre's work for the entire Convention.

91. The Steering Body and the Working Group:

(a) Decided to request the Executive Body to consider amending the relevant items of the 2016–2017 workplan, as suggested by CCE, and took note of the related budget estimates;¹⁵

(b) Noted that, in addition to the co-funding through the ECE trust fund, approximately 150,000 euros were needed for CCE from external sources in 2017;

(c) Called upon Parties to look for ways to secure adequate funding for CCE and, in particular, to provide voluntary earmarked contributions to CCE to ensure its functioning in 2017;

(d) Decided to request the Executive Body, if necessary, to consider an extraordinary allocation of the non-earmarked part of the funding for the Working Group on Effects Centres through the ECE trust fund in order to increase the part allocated for CCE in 2017;

(e) Stressed the need for finding a long-term solution for the Centre.

XI. Closing of the second joint session

92. The EMEP Steering Body and the Working Group on Effects agreed on the main decisions taken during the second joint session.

93. It was agreed to hold the third joint session of the EMEP Steering Body and the Working Group on Effects in Geneva, starting on the afternoon of 11 September and running through the morning of 15 September 2017. The meeting of the joint Extended Bureaux of the EMEP Steering Body and the Working Group on Effects was tentatively scheduled to be held in Geneva from the afternoon of 20 March through 23 March 2017.

¹⁵ See informal documents listed under item 7 (b) on the meeting web page.