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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

Ninth joint session
Geneva, 11–15 September 2023

Report 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 on their ninth joint session

GE.23-24221(E)

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 ninth joint session from 11 to 15 September 2023 in Geneva.

A. Attendance

2. The session was attended by representatives of the following Parties to the Air Convention: Austria, Bulgaria, Croatia, Denmark, Estonia, Finland, France, Germany, Hungary, Ireland, Italy, Lithuania, Luxembourg, Netherlands, Norway, Poland, Russian Federation, Slovakia, Slovenia, Spain, Sweden, Switzerland, Ukraine, United Kingdom of Great Britain and Northern Ireland and United States of America.

3. Also participating were representatives of the following EMEP centres and task forces: the Chemical Coordinating Centre (CCC); the Centre for Integrated Assessment Modelling (CIAM); the Centre on Emission Inventories and Projections (CEIP); the Meteorological Synthesizing Centre-West (MSC-W); the Task Force on Measurements and Modelling (TFMM); the Task Force on Emission Inventories and Projections (TFEIP); and the Task Force on Integrated Assessment Modelling (TFIAM). Representatives of the following scientific centres and bodies under the Working Group on Effects participated: the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends (ICP Modelling and Mapping) and its Coordination Centre for Effects (CCE); the Centre for Dynamic Modelling (CDM); 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 was the Chair of the Executive Body.

4. Also present were representatives of the Danish Centre for Environment and Energy, the European Environment Agency (EEA), the National Research Council - Institute of Atmospheric Pollution Research (Italy), the Institute of Environmental Protection - National Research Institute (Poland), the Climate and Clean Air Coalition, the World Meteorological Organization (WMO), the European Commission and the Delegation of the European Union to the United Nations Office at Geneva.

B. Organizational matters

5. Ms. Laurence Rouîl (France), Chair of the EMEP Steering Body, and Ms. Isaura Rábago (Spain), Chair of the Working Group on Effects, co-chaired the session. Ms. Albena Karadjova, Secretary to the Convention on Long-range Transboundary Air Pollution, provided opening remarks. At the invitation of the Co-Chairs, the Working Group and the

EMEP Steering Body adopted the agenda for the session (ECE/EB.AIR/GE.1/2023/1–ECE/EB.AIR/WG.1/2023/1), agreeing to change the order of some agenda items.[1]

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. Report from the Saltsjöbaden meeting and discussion on follow-up actions

6. The Chair of the Executive Body for the Convention informed participants about matters arising from the forty-second session of the Executive Body (Geneva, 12–16 December 2022) and about the outcomes of the sixty-first session of the Working Group on Strategies and Review (Geneva, 4–6 September 2023).

7. The Chairs of the EMEP Steering Body and of the Working Group on Effects presented a summary of the work of their Bureaux since the eighth joint session (Geneva, 12–16 September 2022).

8. The Co-Chair of TFIAM presented highlights of the seventh Saltsjöbaden workshop (Gothenburg, Sweden, 12–15 March 2023), which had provided a number of useful recommendations related to the work of the scientific and technical bodies under the Convention, also noting that Saltsjöbaden workshop participants had expressed great appreciation for the One United Nations Climate Change Learning Partnership introductory e-learning course on emission inventories.[2] He then highlighted the outcomes of the first meeting of the Forum for International Cooperation on Air Pollution (Gothenburg, Sweden, 16 March 2023).

9. The Steering Body and the Working Group:

(a) Noted that the Draft 2024–2025 workplan for the implementation of the Convention (science part) (ECE/EB.AIR/GE.1/2023/6−ECE/EB.AIR/WG.1/2023/6) included priorities building on the conclusions of the seventh Saltsjöbaden workshop;

(b) Encouraged task forces and international cooperative programmes to: suggest to the TFICAP Co-Chairs topics on which they had knowledge to share; list related experts; and suggest information, data tools and methods that they could share.

III. Reorganization and relocation of the Meteorological Synthesizing Centre-East activities: review of the options

10. The Chair of the EMEP Steering Body presented the note Reorganization and relocation of the Meteorological Synthesizing Centre-East activities: review of the options by the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (ECE/EB.AIR/GE.1/2023/7−ECE/EB.AIR/WG.1/2023/7) for consideration by the participants. She gave a brief description of the six options considered in the note and reported on the recommendations of the Extended Bureaux of the EMEP Steering Body and the Working Group on Effects, also detailed in the note.

[1] Information and documentation for the meeting, including informal documents and presentations, is available at https://unece.org/info/events/event/371556.

[2] Available at https://unccelearn.org/course/view.php?id=166&page=overview.

11. A representative of the Jožef Stefan Institute (Ljubljana) was invited to present the Institute's capacities and its potential to host the work of the Meteorological Synthesizing Centre-East (MSC-E), given that the Institute, supported by the Slovenian authorities, had expressed an interest in taking over that activity. She also presented the relevant expertise of the Institute, including environmental pollution research on toxic substances (metals, persistent organic pollutants (POPs), chemicals of emerging concern (CECs), cooperation with international bodies and programmes (United Nations Environment Programme, Minamata Convention on Mercury, Group on Earth Observations, European Union), and reinforced modelling activities for toxic metals and POPs.

12. A representative of the Russian Federation referred to the letter from the Ministry of Natural Resources and Environment of the Russian Federation to ECE (2 August 2023)[3] on financial support to MSC-E. He noted that the transfer of funding to the MSC-E had enabled the centre to continue operating in 2023. He also emphasized that the Russian Federation was concerned about discrimination against MSC-E on the basis of its location and the nationality of the staff working therein. He stated that the transfer of the activities of MSC-E to another centre was a complicated task that would require time and support from the scientists involved in the development of models, databases and assessments. He also stated that his country did not intend to pay for the transfer of data to a new host institution of MSC-E. Furthermore, he noted that the Russian Federation was ready to discuss option 2 described in document ECE/EB.AIR/GE.1/2023/7−ECE/EB.AIR/WG.1/2023/7. Noting that relocation to Georgia would take three to five years, he proposed that the Moscow-hosted MSC-E should remain operational during that period, build the capacity of a host institution for a new centre in Georgia, and ensure the transfer of the data. He informed the participants that, should any option other than that outlined above or option 6 be approved, the centre hosted in Moscow would be closed as of 1 January 2024, after which date no data transfer would be possible.

13. The Chair of the EMEP Steering Body emphasized that data gathered and built up by the EMEP centres were not their own property but belonged to all the Parties. Therefore, access to the data kept at MSC-E should be ensured. She proposed looking into that point prior to the forty-third session of the Executive Body (Geneva, 11−14 December 2023).

14. A representative of Ukraine informed the EMEP Steering Body that the Party could not support the financing of MSC-E while it was located in the Russian Federation. Furthermore, Ukraine would not support the financing of specialists of the Russian Federation, based in the Russian Federation. He also supported the option of the initial transfer of MSC-E to the Jožef Stefan Institute and welcomed a combination of options 1 and 2 as proposed in option 3. He referred to the official letter from the Deputy Minister for Environmental Protection and Natural Resources sent to the Air Convention secretariat in June 2023, which proposed locating MSC-E in Ukraine in the long-term perspective.

15. Representatives of the European Union, the United Kingdom of Great Britain and Northern Ireland, the United States of America, Norway and Sweden expressed support for options 1 and 3. All proposed the transfer of the activities of MSC-E to Slovenia in the short term and option 3, the implementation of a new centre in a country of the Eastern Europe, the Caucasus and Central Asia region to scale up capacity-building in that region, in the longer term.

16. The Chair of the EMEP Steering Body took note of the status report delivered by MSC-E with financial support from the Russian Federation.

17. The Steering Body and the Working Group:

[3] Available at https://unece.org/info/events/event/371556 (Informal documents).

(a) Agreed to forward document ECE/EB.AIR/GE.1/2023/7−ECE/EB.AIR/WG.1/2023/7 for consideration by the Executive Body at its forty-third session, recommended consideration of options 1−3, and noted that option 1 ensured continuity of the activities on heavy metals (HMs) and POPs, option 2 allowed for a geographical balance (in the medium term) and option 3 was the only one that met both requirements;

(b) Took note of the presentation of the representative of the Jožef Stefan Institute (Ljubljana) and welcomed its offer to host MSC-E as of 2024;

(c) Recommended that the EMEP Steering Body Chair consult with MSC-E hosted in Moscow, the Jožef Stefan Institute, the secretariat, Georgia and other interested Parties, including Ukraine, to provide more information on the necessary steps, budget and timeline for the transfer of the databases, and to present said information to the Executive Body at its forty-third session.

IV. Financial and budgetary matters

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

18. The secretariat introduced section I of the note on financial and budgetary matters (ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5). The proposed schedule of mandatory contributions for 2024[4] had been calculated on the basis of the 2021 United Nations scale of assessments.[5]

19. The Steering Body and the Working Group:

(a) Took note of the information on the status of contributions to the financing of EMEP provided in document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5 and the additional information provided by the secretariat during the session;

(b) Approved the use of budgeted resources by the EMEP centres in 2022, as presented in table 2 of document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5;

(c) Recommended that the Executive Body agree on the schedule of mandatory contributions from Parties for 2024, as set out in table 4 of document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5;

(d) Noted that the value of the total budget had fallen by approximately a third across the past 15 years, and that it was currently insufficient to fund priority work items, and requested that the matter be brought to the attention of the Executive Body. Recognizing that there was insufficient funding for the work under the EMEP Protocol, the EMEP Steering Body and the Working Group on Effects called upon the Parties to the EMEP Protocol to consider making voluntary contributions (in kind or in cash through the trust fund) to ensure that the work, especially additional work that might be required in the light of the future revision of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, as amended in 2012 (Gothenburg Protocol), could be accomplished as foreseen in the workplan;

[4] ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5, table 4.

[5] See General Assembly resolution 76/238 on the scale of assessments for the apportionment of the expenses of the United Nations (A/RES/76/238).

(e) Agreed on the detailed budget for EMEP for 2024 as presented in table 3 of document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5 and forwarded it to the Executive Body for approval;

(f) Urged Parties that had not yet done so to pay their 2023 contributions in cash to the trust fund and, in 2024, to pay their contributions so that they reached the trust fund in the first half of the year;

(g) Urged Parties owing arrears to pay them in full to the trust fund;

(h) Recommended that the Executive Body amend the EMEP Protocol by adopting, in accordance with article 4 (3) thereof, the revised annex set out in the annex to document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5.

B. Funding of effects-related activities

20. The secretariat introduced section II of the note on financial and budgetary matters (ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5). The secretariat reported on the proposed budget for the funding of effects-oriented activities in 2023 ($2,358,700). The details of the budget were presented in document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5, table 10.

21. The Steering Body and the Working Group:

(a) Noted the cash contributions made to the trust fund for effects-oriented activities in 2022 and 2023;

(b) Approved the 2024 essential international coordination costs of $2,358,700 for different elements of the effects-oriented activities and the provisional cost estimate of $2,358,700 for 2025 and 2026, for submission to the Executive Body;

(c) Recommended that the Executive Body agree on the recommended scale of contributions to the trust fund for core activities not covered by the EMEP Protocol for 2024, as outlined in table 12 of document ECE/EB.AIR/GE.1/2023/5−ECE/EB.AIR/WG.1/2023/5, and revise decision 2002/1 on the financing of core activities (ECE/EB.AIR/77/Add.1, annex I) to reflect the new scale of contributions based on the 2021 United Nations scale of assessments;

(d) Invited all Parties to provide the recommended contributions to the trust fund before 30 November of each year;

(e) Noted with appreciation the essential support provided to the Convention and its bodies by lead countries, countries hosting coordinating centres and those countries organizing meetings, as well as countries that funded activities of their national focal centres/points and the active participation of national experts;

(f) Requested the Working Group on Effects Bureau to review and discuss potential options for updating tables in the financial and budgetary document and to present a proposal at the tenth EMEP Steering Body/Working Group on Effects joint session.

V. Progress in activities of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe and its workplan for 2024–2025

(a) Improvement and reporting of emission data and adjustments under the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone

(i) Adjustments under the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone

22. The Head of CEIP presented the outcome of the review of Parties' requests for emission inventories adjustments under the Gothenburg Protocol. In 2023, Denmark, France, the Netherlands and the United Kingdom of Great Britain and Northern Ireland had submitted previously granted adjustment applications. As set out in document ECE/EB.AIR/GE.1/2023/INF.6−ECE/EB.AIR/WG.1/2023/INF.6, the expert review team recommended that the adjustment applications of Denmark, France, the Netherlands and the United Kingdom of Great Britain and Northern Ireland, approved prior to 2023 and resubmitted in 2023, be accepted.

23. The Chair of TFEIP presented an informal note on emission inventory adjustments and emissions projections reporting.[6] He noted that, at its 2023 annual meeting (18−20 April 2023), TFEIP had discussed the possibility of including information about the impacts of already approved emission inventory adjustments in Parties' reporting of emission projections to the Convention.

24. The Steering Body and the Working Group:

(a) Accepted:

(i) The already approved adjustment application of 2022 resubmitted by Denmark (Agriculture 3B1a/Non-methane volatile organic compounds (NMVOCs));

(ii) The already approved adjustment application of 2022 resubmitted by France (Agriculture 3B, 3D/NMVOCs);

(iii) The already approved adjustment application of 2022 resubmitted by the Netherlands (Agriculture 3B1a/NMVOCs);

(iv) The already approved adjustment application of 2022 resubmitted by the United Kingdom of Great Britain and Northern Ireland (Agriculture 3Da2c/ammonia);

(b) Requested that Parties follow the CEIP recommendations when preparing and submitting applications for adjustments;

(c) Considered the information provided on the proposed inclusion of the effects of previously approved emission inventory adjustments in the emission projections reporting in addition to best science estimates, and agreed to inform the Executive Body in December 2023;

[6] Emission inventory adjustments and Parties' emission projections reporting to the Convention: A non-technical discussion paper.

(d) Requested TFEIP, if agreed by the Executive Body, to propose necessary changes to the reporting guidance documents and to report back thereon to the EMEP Steering Body and the Working Group on Effects at their tenth joint session in September 2024.

(ii) Improvement and reporting of emission data

25. The Co-Chair of TFEIP informed participants of a new Co-Chair of TFEIP, nominated by the European Union, Mr. Daniel Montalvo, who had taken over that task from Mr. Martin Adams. He also reported on the progress made, including the results of the thirty-sixth annual meeting of TFEIP (Oxford, United Kingdom of Great Britain and Northern Ireland, 18–20 April, 2023) and presented an overview of activities included in the draft workplan for 2024–2025, noting that work would shortly commence on planning the next update to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)/European Environment Agency (EEA) Air Pollutant Emission Inventory Guidebook (EMEP/EEA Guidebook), expected in 2026 or 2027.

26. The Co-Chair of TFEIP presented the technical paper entitled A consideration of future emissions inventory reporting under CLRTAP,[7] which presented results of the TFEIP survey on the current use of submitted emissions data, needed inventory revisions and emerging issues. The Chair of the EMEP Steering Body invited the Parties to express their views on the priorities emerging from that survey.

27. The Co-Chair of TFEIP presented updates[8] to the EMEP/EEA Guidebook[9] used for the estimation and reporting of national emissions (published in 2016) and thanked the Parties and the experts involved in that major update.

28. The Steering Body and the Working Group:

(a) Expressed their appreciation for the contribution of Mr. Adams and welcomed the new Co-Chair of TFEIP, Mr. Montalvo;

(b) Agreed on the draft workplan for 2024–2025 and encouraged further discussions between TFEIP and the EMEP Steering Body to formulate future priorities;

(c) Took note of the TFEIP technical paper entitled A consideration of future emissions inventory reporting under CLRTAP, acknowledged that some of the priorities listed therein were taken into account in the tasks allocated to TFEIP in the 2024–2025 workplan; and encouraged its use in discussions on the follow-up to the Gothenburg Protocol review;

(d) Expressed appreciation to the TFEIP Chair and the experts for their work on updating the EMEP/EEA Guidebook and to the Parties for their financial support;

(e) Endorsed the proposed updates of the EMEP/EEA Guidebook as presented in the informal documents under agenda item 5 (a) and agreed to inform the Executive Body on that important update;

(f) Noted with concern the lack of funding for updates of the EMEP/EEA Guidebook and other EMEP work and agreed to bring that issue before the Executive Body for consideration in December 2023.

[7] See https://unece.org/environment/documents/2023/07/working-documents/future-emissions-reporting.

[8] See https://unece.org/environment/documents/2023/08/working-documents/updated-chapters-emepeea-guidebook.

[9] See www.eea.europa.eu/publications/emep-eea-guidebook-2016.

29. The Head of CEIP briefed the EMEP Steering Body on the status of the emissions data reporting, the work of the centre, the work on data quality and the draft 2024–2025 workplan. She reported that, as of 7 September 2023, 46 out of 51 Parties had submitted data, forty-five Parties had submitted an Informative Inventory Report, thirty-three Parties had reported projected emission data and forty Parties had reported black carbon (BC) emissions. She noted that no emission data had been received from Azerbaijan, Bosnia and Herzegovina, Croatia, Kyrgyzstan and the Republic of Moldova. She also noted somewhat improved reporting from some countries of Eastern Europe, the Caucasus and Central Asia but emphasized the importance of further improving the quality of reported data. She also pointed to the importance of long-term financing for inventory compilation teams to ensure the constantly improving quality of air emission inventories.

30. She informed participants about the report entitled Methodologies applied to the CEIP GNFR gap-filling 2022.[10] She also reported on the in-depth review of PM emissions from agriculture, with a special emphasis on ammonia (NH_3), NMVOC and nitrogen oxides (NO_x) emissions, including, for the first time, gridded data. She noted that, for several countries, there was a need to substantially improve the transparency of the section of the Informative Inventory Report that described the preparation of gridded data sets. The approach of the ad hoc review that focused on a certain sector for all Parties was well received by Parties and review experts.

31. The Co-Chair of TFEIP suggested also assessing the robustness of the inventory management process in the countries, to ensure that the Parties would be able to report inventories each year.

32. Emissions from fires and shipping were discussed. The Head of CEIP noted that there was a need for a decision on whether to improve the quality of data for shipping emissions, as currently they could not be used for modelling, or to have the data collected in a centralized way.

33. The Steering Body and the Working Group:

(a) Invited those Parties that had not already done so to provide in the next submission the following:

(i) gridded and large point source data;

(ii) uncertainty estimates;

(iii) BC inventories; and (iv) projected emission estimates;

(b) Invited countries of Eastern Europe, the Caucasus and Central Asia and the Western Balkans to continue with the improvement and regular reporting of their emission data, and to nominate more experts for the roster of review experts;

(c) Approved the plan for the ad hoc (in-depth) reviews for the years 2024 to 2026:

[10] Bradley Matthews and Robert Wankmueller, “Methodologies applied to the CEIP GNFR gap-filling 2022 Part I: Main Pollutants (NO_x, NMVOCs, SO_x, NH_3, CO), Particulate Matter ($PM_{2.5}$, PM_{10}, PM_{coarse}) and Black Carbon (BC) for the years 1990 to 2020”, Technical Report CEIP 01/2022 (n.p, Environment Agency Austria, 2022); and Stephen Poupa, “Methodologies applied to the CEIP GNFR gap-filling 2022 Part II: Heavy Metals (Cd, Hg, Pb) and Persistent Organic Pollutants (Benzo(a)pyrene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Total polycyclic aromatic hydrocarbons, Dioxin and Furan, Hexachlorobenzene, Polychlorinated biphenyls) of the year 2020”, Technical Report CEIP 04/2022 (n.p, Environment Agency Austria, 2022).

(i) 2024: Review of the sector, the industrial processes and product use – solvents with a special emphasis on NMVOC emissions; including gridded data;

(ii) 2025: Review of projections with clearly defined scope;

(iii) 2026: Review of the transport sector with a special focus on NO_x, NMVOC, carbon monoxide, PM, BC, lead (Pb), cadmium (Cd) and dioxin/furan emissions; including gridded data;

(d) Noted with appreciation the contribution of the European Union-funded projects that covered the travel of five experts from countries of the Western Balkans and Eastern Europe, the Caucasus and Central Asia, leading to better regional representation in the review team;

(e) Noted with appreciation that Parties had cooperated sufficiently during the 2023 in-depth review and had nominated new experts for the roster of review experts;

(f) Expressed their appreciation to CEIP;

(g) Noted the need to discuss the review process at the country level, especially for those countries that needed improvement of air emission inventories the most, and agreed to seek guidance from the Executive Body on whether some priorities should be elaborated at the country level. The issue should be further discussed at the EMEP Steering Body/Working Group on Effects Extended Bureaux meeting in 2024.

(b) Measurements and modelling

34. The Co-Chair of TFMM informed participants that Poland would take over from France as a lead country of TFMM and announced that Ms. Joanna Strużewska would become a Co-Chair, replacing Mr. Augustin Colette. He also reported on progress, including the results of the twenty-fourth meeting of the Task Force (Warsaw (hybrid), 10−12 May 2023), and noted that the EMEP status and technical reports relevant for the evaluation of progress made in 2023 would be available on the EMEP website.[11] He reported that TFMM had focused on a field campaign devoted to ozone formation, with significant involvement of the Parties and the pan-European Aerosol, Clouds and Trace Gases Research Infrastructure (ACTRIS), as well as the partial financial support of the European Solvent Industry Group.

35. Ms. Strużewska presented the workplan elements for 2024–2025, announced that the twenty-fifth annual TFMM meeting would take place on 6–7 May 2024, and called on the Parties to host the meeting. The Co-Chair of TFMM, Mr. Lorenzo Labrador, spoke about the WMO low-cost sensor review, in which TFMM experts were invited to participate.

36. The Steering Body and the Working Group:

(a) Took note of the change of lead country and recommended that the Executive Body note said change;

(b) Expressed their appreciation for the contribution provided by Mr. Colette and welcomed the new TFMM Co-Chair, Ms. Strużewska;

(c) Expressed their appreciation for the work carried out in 2023 and agreed on the TFMM draft workplan for 2024–2025.

37. A Representative of CCC presented an overview of activities, including the intensive measurement campaign organized in summer 2022 to study the role of VOCs in ozone

[11] See http://emep.int/emep_publications.html.

formation, and the workplan for 2024–2025. He noted that the monitoring programme was stable, with few changes from year to year. He also stated that CCC continued to work on the implementation of Findable-Accessible-Interoperable-Reusable (FAIR) principles for the EMEP data (all the data in EBAS). He announced a workshop on field and measurement techniques for CECs, scheduled for 8–10 November 2023, and noted that the objective of the workshop would be to agree which chemicals should be monitored and to provide recommendations on sampling protocols and analytical work to countries that wished to start monitoring of CECs.

38. The Steering Body and the Working Group:

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024–2025;

(b) Took note of the highlighted importance of continuing work on mercury and welcomed the collaboration with the Minamata Convention (especially with the Open-ended Scientific Group);

(c) Supported collaboration with the ACTRIS pan-European research infrastructure and encouraged the national experts involved in the implementation of the EMEP network to consider the capacities offered by ACTRIS to improve data quality;

(d) Took note of new work related to the assessment of the long-range transport potential of CECs developed in collaboration with the Organisation for Economic Co-operation and Development;

(e) Welcomed the organization of a workshop by CCC on CECs in November 2023 and encouraged experts from the EMEP task forces and centres to participate therein.

39. The Head of MSC-W presented an overview of the progress of activities during 2022–2023 and the workplan elements for 2024–2025. She reported that an assessment of the air pollution situation in Europe and source receptor matrices for 2021 had been published in EMEP Status Report 1/2023,[12] as well as in country reports (also available in Russian). EMEP MSC-W calculations for 33 years had been performed and were available from the EMEP website[13], together with model evaluation of the 2021 calculations.

40. She presented a study on ozone, showing that substantial reductions of European ozone could be achieved, but even with an ambitious air pollution mitigation, the World Health Organization (WHO) Air Quality Guidelines values for peak season maximum daily average 8-hour (MDA8) could not be achieved. She emphasized that action on methane (CH_4) would only be part of the solution and (ECE) NOx/VOC emission reductions would still be very important to reduce surface ozone.

41. She announced that MSC-W had been working on a new method to perform source receptor calculations that was very computationally efficient – the Local Fraction methodology.

42. Lastly, she noted that MSC-W participated in the EMEP intensive measurement campaign on VOCs (see para. 37 above) and extended the EMEP MSC-W model with new VOC species and speciations, and compared model results to monitoring data. That work would continue in the coming years.

43. The Steering Body and the Working Group:

[12] Hilde Fagerli and others, *Transboundary Particulate Matter, Photo-oxidants, Acidifying and Eutrophying Components* (Oslo, Norwegian Meteorological Institute, 2023).

[13] See *https://emep.int/mscw/mscw_moddata.html*

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024–2025;

(b) Acknowledged the innovative work of MSC-W on ozone source receptor calculations using the Local Fraction methodology.

44. The Chair of the EMEP Steering Body highlighted the information on the finalization of the status report on HMs and POPs shared by the Head of MSC-E via email. That work was possible due to funding from the Government of the Russian Federation.

(c) Integrated assessment modelling

45. The Co-Chair of TFIAM informed participants that France had agreed to take over responsibility for the role of Co-Chair of the Task Force from the Netherlands and announced that Ms. Simone Schucht would replace Mr. Rob Maas as Co-Chair.

46. The Co-Chair of TFIAM and the Head of CIAM reported on progress on workplan items, including the findings from the fifty-second meeting of TFIAM (Utrecht, Netherlands, 24−26 May 2023) and the subsequent additional modelling work by CIAM in cooperation with MSC-W. The Head of CIAM highlighted that it had been demonstrated that a 50 per cent reduction of health damage due to PM and ozone exposure would be feasible for the ECE-modelling domain and that, in order to meet the ozone reduction needed, global precursor emissions, including CH_4, would have to be addressed.

47. The Steering Body and the Working Group:

(a) Took note of the change of the lead country and recommended that the Executive Body note said change;

(b) Expressed their appreciation for the contribution provided by Mr. Maas and welcomed the new TFIAM Co-Chair, Ms. Schucht;

(c) Also expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024−2025;

(d) Took note of the information presented by the Head of CIAM and the Co-Chair of TFIAM on new approaches that could be developed for scenario analysis based on a “collective risks approach”, including considerations of equity;

(e) Also took note of the new features of the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) model and the analysis on the feasibility of introducing health-damage reduction targets, carried out jointly with MSC-W;

(f) Further took note of the discussion on the need to consider ecosystem targets and noted the commitment of CIAM to carry out further analysis, as a part of which both health and ecosystem damage reduction targets would be developed in cooperation with MSC-W, TFMM, the Working Group on Effects and the Task Force on Hemispheric Transport of Air Pollution (TFHTAP), especially in the perspective of the considerations related to the review of the Gothenburg Protocol.

(d) Hemispheric transport of air pollution

48. The Co-Chair of TFHTAP provided an overview of the Task Force’s progress on elements of the 2022–2023 workplan, including outcomes of its online meetings on 18–21 April 2022 and ongoing work on the Hemispheric Transport of Air Pollution version 3 (HTAPv3) global mosaic emission inventory. The Co-Chair presented an overview of the

elements proposed for the 2024–2025 workplan, including continued work on the HTAPv3 inventory, new sets of coordinated multi-model ensemble simulations, and the development of community-based decision support tools based on the results of the planned ensemble simulations. Three sets of ensemble simulations were planned:

(a) Global model simulations of ozone, PM, and deposition of nitrogen and sulfur under future scenarios developed by CIAM, including examination of the role of CH_4 as an ozone precursor, source attribution methods, links to regional scale (cooperation with TFMM, MSC-W), and links to impacts (cooperation with ICP Vegetation);

(b) Global model simulations of mercury trends and source attribution, initially to contribute to the Minamata Convention's effectiveness evaluation;

(c) A multi-model intercomparison of the multi-pollutant (PM, POPs, metals, ozone) impacts of fires to be conducted over the next two workplans.

49. The Steering Body and the Working Group:

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024−2025;

(b) Acknowledged with appreciation the agreement of MSC-W to hold a data repository for TFHTAP and welcomed the proposal of the United States Environmental Protection Agency to provide a voluntary contribution of $1,000 per year to the EMEP trust fund to be earmarked for MSC-W to cover the costs of a data repository for TFHTAP modelling experiments.

VI. Progress in activities and workplan for 2024–2025 of effects-oriented activities

50. The Working Group on Effects Chair recalled the agreement from the eighth joint EMEP Steering Body/Working Group on Effects meeting to develop a report based on the international cooperative programmes' inputs into the Gothenburg Protocol review[14] and proposed to discuss how to proceed with producing that report.

51. The Steering Body and the Working Group agreed to produce a Working Group on Effects joint report based on the international cooperative programmes' and task forces' inputs into the Gothenburg Protocol review and requested the current Working Group on Effects Chair, Ms. Rábago (Spain), to coordinate the process with support from the international cooperative programmes and the secretariat.

(a) Air pollution effects on health

52. The Working Group on Effects Chair, on behalf of the Chair of the ECE/WHO Task Force on Health, reported on the activities of the Task Force on Health, including the results of the twenty-sixth meeting of the Task Force (Bonn, Germany, 16–17 May 2023), the implementation of the workplan for 2022–2023 and the content of the draft workplan for 2024–2025.

53. The Steering Body and the Working Group:

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024–2025;

[14] ECE/EB.AIR/GE.1/2022/2–ECE/EB.AIR/WG.1/2022/2, para. 58 (b).

(b) Noted that the Health risks of air pollution in Europe (HRAPIE) project was an important priority for the Parties;

(c) Recommended seeking synergies on health messaging with EEA;

(d) Proposed looking into potential collaboration with TFIAM on workplan item 1.1.1.33.

(b) Air pollution effects on materials, the environment and crops

(i) Air pollution effects on materials

54. The Co-Chairs of ICP Materials reported on the developments regarding, progress and outcomes of activities, including an update on the ongoing exposure for trend analysis and status on the case studies on United Nations Educational, Scientific and Cultural Organization (UNESCO) world cultural heritage sites. They reported that all workplan items from the 2022–2023 workplan were on track, including the thirty-eighth Task Force meeting (Bochum, Germany, 3–5 May 2023), and presented relevant items of the draft workplan for 2024–2025.

55. The Co-Chair of ICP Materials presented analysis of corrosion and soiling data from the exposure for trend analysis 1987–2021, highlighting that the results indicated that PM played an important role in localized corrosion attack; however, more data needed to be collected in relation to trend exposures. He also announced that an updated report of dose-response functions for trend materials was planned in 2024 to better predict corrosion based on available environmental data, and an updated technical manual would be published in 2025 containing information on sites with additional high-resolution measurements.

56. The Co-Chair of ICP Materials noted that analysis of data collected at UNESCO sites presented in the current year included a study on the application of Swiss models with increased resolution and the predicted damage at selected UNESCO sites located in Switzerland.

57. The Steering Body and the Working Group:

(a) Expressed their appreciation for the ICP Materials work on costs assessments for selected monuments;

(b) Agreed on the draft workplan for 2024–2025.

(ii) Air pollution effects on vegetation

58. A representative of ICP Vegetation reported on its activities, including the results of its thirty-sixth Task Force meeting (Geneva (online), 13–15 February 2023) and the content of the draft workplan for 2024–2025. She noted that the task of coordinating the moss survey, including data analysis and the writing of the report on the 2020–2022 survey, had been transferred back to the Programme Coordination Centre (PCC). The main metals included in the 2020–2022 survey had been aluminium, antimony, arsenic, barium, Cd, chromium, cobalt, copper, iron, Pb, manganese, mercury, molybdenum, nickel, phosphorus, strontium, titanium and zinc. Nitrogen and/or POPs and/or microplastics had also been measured at some sites. Additional moss samples had been collected in 2022–2023 for a centrally analysed pilot study on microplastic content due to airborne deposition.

59. She highlighted that ICP Vegetation data had been used to parameterize wheat models, which would allow for improved predictions of combined impacts of ozone and climate change. Experimental data had shown effects of ozone on nutritional quality, including micronutrient content, in addition to effects on crop yield.

60. She highlighted the continued outreach activities to raise awareness and to share skills and expertise, which had resulted in improved modelling of ozone impacts in India and Africa.

61. The Steering Body and the Working Group:

(a) Took note of the transfer of the moss survey from the Russian Federation to the United Kingdom of Great Britain and Northern Ireland as per agreement by the ICP Vegetation participants;

(b) Expressed their appreciation of the work carried out in 2023 and agreed on the draft workplan for 2024–2025.

(iii) Air pollution effects on forests

62. The Head of the PCC of ICP Forests summarized the highlights of the thirty-ninth Task Force Meeting and the Tenth Forest Ecosystem Monitoring Conference – held concurrently online, from 6 to 8 June 2023 – presented the key deliverables of the PCC, and outlined activities in the workplan for 2024–2025.

63. He reported on the status and trends of nitrogen levels in European forests in 2021. He also presented the ICP Forest Technical Report 2023, which included the results of the 2022 crown condition survey, the atmospheric throughfall deposition in European forests in 2021, an analysis of meteorological conditions measured on ICP Forests plots in 2021, and member States' views on the current ICP Forest strategy and future activities based on the answers to a questionnaire developed by the PCC for that purpose. He highlighted the publication of the revised ICP Forests Strategy for 2024−2030.[15]

64. He pointed out the strong participation of ICP Forests partners in Horizon Europe research projects[16] and highlighted the first call for applications, which had recently been published by the European Forest Institute (project partner in FORWARDS)[17] to fund climate-smart forestry and forest restoration pilots in Europe.

65. He informed participants that a dialogue between ICP Forests and the European Commission had been initiated in early 2023, which had the following two main directions:

(a) Promoting the role of ICP Forests within the new European Union Framework for Forest Monitoring and Strategic Plans: at the thirty-ninth meeting of the Task Force, the Chair, the PCC and the Programme Coordinating Group had been encouraged to explore opportunities for formal cooperation. The PCC and the relevant expert panels had also been encouraged to consider and discuss possible adjustments in the Manual that might emerge. The latter process would follow the well-established internal procedure for the revision of the Manual and the outcome would be subject to approval by the Task Force;

(b) Cooperation agreement with European Commission Joint Research Centre (JRC) to: (i) promote joint research and joint publications; (ii) enable potential and mutual exchange of scientific staff; and (iii) facilitate mutual access to data.

66. The Steering Body and the Working Group:

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024–2025;

[15] Available at http ://icp-forests.net/.
[16] See www.nibio.no/en/projects/pathfinder and https://forwards-project.eu/.
[17] See https://efi.int/grants-training/grants/G-04-2023.

(b) Took note of the ICP Forests publications[18] and ICP Forests Technical Report 2023;

(c) Welcomed the dialogue between ICP Forests and the European Commission Directorate-General for Environment and encouraged further exploration of opportunities for formal cooperation;

(d) Agreed that ICP Forests would consider and discuss possible adjustments in the ICP Forests Manual that might emerge from subparagraph (c) above;

(e) Welcomed the dialogue between ICP Forests and JRC, and supported the exploration of a mutually acceptable cooperation agreement;

(f) Recommended explicitly including collaboration with EMEP MSC-W on deposition data to be included in the 2024–2025 workplan.

(iv) Air pollution effects on waters

67. A representative of ICP Waters reported on its activities, including the results of its thirty-ninth Task Force meeting, held jointly with the thirty-first Task Force meeting of ICP Integrated Monitoring (Lunz, Austria, 9–11 May 2023). She also outlined activities in the workplan for 2024–2025, which would focus on the update of the ICP Waters Manual and an assessment of dose-response relationships between water chemistry and biology. In addition, possibilities for open data sharing would be explored. The 2024 Task Force meeting was planned to be held jointly with ICP Integrated Monitoring and hosted by Czechia in May.

68. She highlighted the following main conclusions from the Task Force meeting: (i) chemical and biological recovery was observed, however trends for nitrogen and biota were more variable than for sulfate; (ii) climate change impacts were increasingly important as deposition declined; (iii) understanding recovery processes was vital for dynamic modelling and predictions; (iv) long-term monitoring was of great value to the effects work; and (v) open data policy was supported and work towards increased openness would be continued.

69. She stated that the report *Responses of benthic invertebrates to chemical recovery from acidification*[19] had been published, and highlighted the following conclusions: the work of the Working Group on Effects demonstrated widespread increases in species diversity of aquatic insects in acidified rivers and lakes in Europe from 1990s onwards, which was a biological response to chemical recovery from reduced sulfur deposition. She emphasized that integrated biological and water chemical monitoring programmes were essential for documentation of biological responses to air pollution.

70. She also referred to the base cation report, currently under preparation, which tentatively concluded that there were some surprising upward trends of calcium in ICP Waters sites that were among the lesser acid-sensitive and acidified surface waters, which was possibly a consequence of climate-induced increased weathering rates. She noted that a better understanding of the extent of that phenomenon, and its driving mechanisms was important for predicting chemical recovery of surface waters under reduced air pollution and climate change.

71. The Steering Body and the Working Group:

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024–2025;

[18] Available at http://icp-forests.net/.

[19] Gaute Velle and others, ICP Waters Report 153/2023 (Bergen, Norwegian Institute for Water Research, 2023).

(b) Took note of the report *Responses of benthic invertebrates to chemical recovery from acidification*.

(v) Integrated monitoring of air pollution effects on ecosystems

72. The Chair of ICP Integrated Monitoring reported on its activities, including the results of its thirty-first Task Force meeting held jointly with the thirty-fifth meeting of the ICP Waters Task Force (Lunz, Austria, 8-11 May). He reported that the Task Force meeting discussed making the Integrated Monitoring database openly available under FAIR principles and was generally positive in that regard. He also noted that the Integrated Monitoring Manual needed updating and an ad-hoc group would be formed to begin that process. He then presented key points from a scientific paper on trends in HM concentrations in water courses, recently submitted for publication: (i) most of the water courses had no significant trends in mercury concentrations during 2000–2020, but in those with significant decreasing trends of mercury, those trends were mainly observed during 2000–2005; (ii) concentrations of Pb and Cd decreased in 35 percent and 70 percent of the water courses, respectively, however, the concentrations of those elements had flattened out after 2005; (iii) long-term trends in organic carbon did not coincide with the trends of HMs in those water courses. He also stated that a study modelling biodiversity recovery after acidification at the Swedish Integrated Monitoring sites was underway, with the aim being to finish a report by the end of the year.

73. He also summarized activities in the workplan for 2024–2025, including a scientific paper on vegetation community resilience over time; a report on trends in HM fluxes across ICP Integrated Monitoring sites; an assessment of the mercury data gathered by the newly installed passive samplers; making the ICP Integrated Monitoring database accessible according to FAIR principles; revision of the Integrated Monitoring Manual; and elaboration of proof of concept for development of above-ground vegetation monitoring in ICP Integrated Monitoring sites using drone remote sensing.

74. Lastly, he gave an update on discussions with the Integrated European Long-term Ecosystem, Critical Zone and Socioecological Research (eLTER) and suggested potential lines of cooperation, which could be included in the 2024–2025 workplan, highlighting as particularly relevant the harmonization of the proposed eLTER standard observations with ICP protocols (e.g., ICP Forests, ICP Integrated Monitoring and ICP Waters Manuals).

75. The Steering Body and the Working Group:

(a) Noted the progress made in 2022–2023 and agreed on the draft workplan items for 2024–2025;

(b) Encouraged the further development of cooperation with eLTER and agreed to include proposed lines of cooperation in the 2024–2025 workplan.

(c) Critical loads and other issues related to modelling and mapping

76. The Chair of ICP Modelling and Mapping, the Head of CCE and the Head of CDM reported on their activities, including the results of the thirty-ninth meeting of the ICP Modelling and Mapping Task Force, the thirtieth meeting of CCE and the fourth meeting of CDM (Prague, 28–30 March 2023).

77. The Head of CCE presented the latest review and update of scientific knowledge on ammonia effects on vegetation, carried out jointly by ICP Modelling and Mapping and ICP Vegetation, particularly referring to the report *Review of internationally proposed critical levels for ammonia: Proceedings of an expert workshop held in Dessau and online on 28/29*

March,[20] and to the draft revised version of chapter III on critical levels for NH_3 in the Mapping Manual,[21] approved by the ICP Modelling and Mapping meeting in Prague.

78. He also presented the updated harmonized receptor map for the calculation of the critical loads for terrestrial ecosystems throughout Europe, and reported that the database was available for other bodies of the Convention upon request.

79. Lastly, he reported that the latest exceedance calculations of critical loads published in the EMEP Status report 2023[22] showed that acidification had declined to 4 per cent of the receptor area, whereas eutrophication remained a risk for more than 60 per cent of the European ecosystems.

80. The Head of CDM presented conclusions from the Expert workshop on modelling interactions between air pollution and climate change: nitrogen and carbon (Prague, 28 March 2023).

81. The Steering Body and the Working Group:

(a) Expressed their appreciation for the work carried out in 2023 and agreed on the draft workplan for 2024–2025;

(b) Welcomed the latest review and update of scientific knowledge on ammonia effects on vegetation, carried out jointly by ICP Modelling and Mapping and ICP Vegetation;

(c) Expressed their concern at the large area of sensitive ecosystems at risk of eutrophication throughout Europe, and asked ICP Modelling and Mapping to further analyse and explain uncertainties in the data related to cross-border differences and data gaps;

(d) Took note of the update of chapter III.2.3 on critical levels for NH_3 of the Mapping Manual as presented at the meeting;

(e) Also took note of the report *Review of internationally proposed critical levels for ammonia: Proceedings of an expert workshop held in Dessau and online on 28/29 March*;

(f) Further took note of the continuing efforts towards including modelling of biodiversity change as one of the options to set critical loads for sulfur and nitrogen.

82. The Head of CCE presented a concept note on e-learning[23] and the outcomes of discussions with international cooperative programmes.

83. The Steering Body and the Working Group welcomed the international cooperative programmes' cooperation on the development of an e-learning course and supported the inclusion of the relevant activity in the draft workplan for 2024–2025. An outline of the e-learning course would be shared with relevant stakeholders, including the European Comission, to avoid duplication of efforts.

(d) Common website of the Working Group on Effects

84. Representative of CDM reported on the status of development of the common Working Group on Effects website.

[20] Jürgen Franzaring and Julia Kösler, Report No. 31/2023 (n.p., German Environment Agency, 2023).

[21] See https://unece.org/environment/documents/2023/08/working-documents/mapping-critical-levels-vegetation-track-changes.

[22] See https://emep.int/publ/reports/2023/EMEP_Status_Report_1_2023.pdf

[23] Available at https://unece.org/environment/documents/2023/07/working-documents/concept-development-e-learning-course-air-pollution.

85. The Steering Body and the Working Group welcomed and took note of the newly launched Working Group on Effects website.

VII. Joint thematic session

(a) Air pollution effects on biodiversity

86. Representatives of ICP Modelling and Mapping and of ICP Integrated Monitoring led a discussion on air pollution effects on biodiversity, which had been identified as a cross-cutting priority to be addressed under the Convention at the EMEP Steering Body and Working Group on Effects Extended Bureaux meeting (Uppsala, Sweden, 24−26 April, 2023). Representatives of international cooperative programmes highlighted: (i) linkages between air pollution, climate and biodiversity; (ii) monitoring needs and gaps; (iii) existing suitable indicators in the Convention on Biological Diversity and the Air Convention and possible future indicators; and (iv) the future focus, including an outlook on biodiversity-related tasks on the upcoming workplan (e.g., item 1.1.1.22).

87. The international cooperative programmes drew the following conclusions from the joint thematic session:

(a) Models of air pollution impact on biodiversity existed, but needed further development and testing;

(b) In order to assess air pollution impact on biodiversity, there was a need for more targeted data collection and monitoring;

(c) Further development of biodiversity indicators and metrics for use in the ECE region was needed;

(d) When addressing biodiversity loss, cumulative effects of climate change, air pollution and land use change should be included in scenario assesment;

(e) The range of the different approaches to set critical loads had, with the update of empirical loads, become better aligned. However, the concept of modelled critical loads for biodiversity needed to be developed further;

(f) The work of the Working Group on Effects demonstrated a widespread increase in species diversity of aquatic insects in acidified rivers and lakes in Europe from the 1990s onwards. Said increase was a biological response to chemical recovery from reduced sulfur deposition;

(g) Integrated biological and water chemical monitoring programmes were essential for documentation of biological responses to air pollution;

(h) Reduced deposition below critical load did not necessarily lead to immediate and complete biological recovery, as lag times, constraints on recolonization and other factors such as nutrient accumulation and other chemical changes caused by earlier deposition were also important confounding factors.

88. The Steering Body and the Working Group:

(a) Recommended that the Executive Body consider formally endorsing the Kunming-Montreal Global Biodiversity Framework to encourage collaboration between the Convention on Biological Diversity and the Air Convention;

(b) Recommended to the Executive Body that biodiversity loss be considered as an indicator in the revision of the Gothenburg Protocol;

(c) Noted that the Air Convention work clearly showed negative effects of ozone on biodiversity and highlighted the need to consider ozone in the work on air pollution and biodiversity for both the Working Group on Effects and EMEP;

(d) Noted that using critical loads was a well-established method to address air pollution effects on ecosystems. The updated emprical critical loads for nitrogen were expected to be better linked to biodiversity than mass balance-based critical loads and were going to be used for European Assessment;

(e) Requested the Working Group on Effects Extended Bureau to discuss coordination on biodiversity and nominate a representative for coordinating work on biodiversity together with CDM;

(f) Agreed to include a new item on cooperation with the Convention on Biological Diversity in the workplan for 2024–2025.

(b) Methane

89. Representatives of TFEIP, TFHTAP and CIAM facilitated a discussion on another important cross-cutting issue prioritized at the Extended Bureaux meeting – the relevance of CH_4 for achieving the ozone-related air quality goals of the Air Convention. Subsequently, the Steering Body and the Working Group on Effects held discussions on: (i) the current and future impact of CH_4 on ground-level ozone and the benefits of emission reductions; (ii) the status of CH_4 emission reporting; and (iii) CH_4 mitigation potential and policies that could enable respective reductions.

90. The Steering Body and the Working Group:

(a) Concluded that there was sufficient scientific understanding of the role of CH4 as an ozone precursor and that current assessment tools were adequate to support policymaking;

(b) Noted that ambitious ozone reduction targets would become more dependent on global cooperation to reduce ozone precursors, including CH4; recognizing the leadership potential of the Convention in controlling emissions of ozone precursors;

(c) Recommended that the Executive Body consider CH4 in the revision of the Gothenburg Protocol, such as the specifying of binding targets for CH4 emission reductions consistent with the Global Methane Pledge in the future version of the Gothenburg Protocol;

(d) Highlighted the importance of improving the understanding of the emission mitigation potential and costs, as well as of enabling policies for non-technical measures;

(e) Noted that the draft workplan of the Convention for 2024–2025 required minor revisions to include the assessment of the impacts of ozone on ecosystems.

(c) Heavy metals

91. The Chairs of the EMEP Steering Body and of the Working Group on Effects presented a summary of discussion on HMs that had taken place at the Extended Bureaux meeting in Uppsala, Sweden (24–26 April, 2023).

92. The Steering Body and the Working Group:

(a) Noted that HMs constituted an important issue that should be considered as a topic for collaboration between the EMEP Steering Body and the Working Group on Effects, and agreed to inform the Executive Body in that regard;

(b) Acknowledged that HMs were included in a number of activities in the workplan for 2024–2025;

(c) Concluded that collaboration with the Minamata Convention should continue.

VIII. Outreach activities, information-sharing and cooperation with other organizations and programmes

93. A representative of the Climate and Clean Air Coalition presented the Clean Air Flagship initiative, which aimed to drive the clean air agenda via the Coalition's integrated approach to climate and clean air action.

94. The Secretary of the Working Group on Pollution and Energy – which looked at minimizing the energy and environmental impact of road vehicles and was a subsidiary body of the World Forum for Harmonization of Vehicle Regulations – presented a new ECE methodology to measure particle emissions from car and van braking systems.

95. A representative of the secretariat provided information on communication and outreach activities under the Convention and encouraged the EMEP Steering Body and the Working Group on Effects to contact the secretariat on communication and outreach related to events, publications, new initiatives and other issues.

IX. Information-sharing by Parties

96. A representative of Switzerland highlighted the study "Nitrogen deposition in forests: Statistical modelling of total deposition from throughfall loads".[24] All data sets had been compiled where nitrogen in canopy throughfall and total nitrogen in deposition had been measured simultaneously. A statistical relationship between the two parameters had been calculated to estimate total nitrogen deposition for forests. Using total deposition instead of only throughfall (which was an unknown part of total deposition) enabled the calculation of realistic and comparable cause-effects relations for nitrogen deposition on forests. The study had been carried out by Czechia, Germany, Spain, Sweden and Switzerland working in collaboration.

X. Summary of 2024–2025 workplan for the implementation of the Convention (science part)

(a) Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe

97. The Steering Body to EMEP discussed elements of the draft 2024–2025 workplan for the implementation of the Convention.

(b) Working Group on Effects

98. The Working Group on Effects discussed elements of the draft 2024–2025 workplan for the implementation of the Convention.

[24] Sabine Braun and others, *Frontiers in Forest and Global Change*, vol. 5 (2022). Available at https://doi.org/10.3389/ffgc.2022.1062223.

99. The Steering Body and the Working Group agreed to forward the workplan for 2024–2025 as revised at the current meeting for consideration and approval by the Executive Body at its forty-third session.

XI. Elections of officers

100. At the eighth joint session of the EMEP Steering Body and the Working Group on Effects (Geneva, 12–16 September 2022), no candidates had been nominated either for the EMEP Steering Body Chair or the Working Group on Effects Chair positions. Therefore, the respective Chairs Ms. Rouîl (France) and Ms. Rábago (Spain) had agreed to remain in their positions for one more year.[25] Ms. Sabine Augustin, a Vice-Chair of the Working Group on Effects, and Ms. Strużewska, a Vice-Chair of the EMEP Steering Body, informed the secretariat that they would not be able to continue in their respective capacities beyond 2023.

101. Therefore, the Working Group on Effects and the EMEP Steering Body conducted elections at their ninth joint session. Following rule 20 (3) of the rules of procedure for sessions of the Executive Body,[26] applying mutatis mutandis to its subsidiary bodies, due to the premature ending of the term, the term of office for the Vice-Chairs should be one year, commencing at the end of the session at which the officer was elected. Consequently:

(a) The EMEP Steering Body elected Ms. Rouîl (France) as its Chair for a term of two years;

(b) The Working Group on Effects elected Mr. Jesper Leth Bak (Denmark) as its Chair for a term of two years;

(c) The Working Group on Effects elected Ms. Zita Ferenczi (Hungary) as its Vice-Chair for a term of one year;

(d) No candidates had been nominated for the position of EMEP Steering Body Vice-Chair.

XII. Other business

102. The Chairs announced that the tenth joint session of the EMEP Steering Body/ Working Group on Effects would take place on 9–13 September 2024 in Geneva, and the next Extended Bureaux Meeting of the EMEP Steering Body/Working Group on Effects would take place on 26 February–1 March 2024 in Geneva.

103. The secretariat delivered a message on behalf of the ECE Senior Gender Advisor, referring to the UNECE Policy for Gender Equality and the Empowerment of Women,[27] noting that ECE remained committed to effectively mainstreaming gender across all areas of the organization's work and offering support to scientific and technical bodies in ensuring that a gender lens was applied to their activities.

XIII. Adoption of the draft report of the ninth joint session

104. The Steering Body and the Working Group:

[25] ECE/EB.AIR/GE.1/2022/2–ECE/EB.AIR/WG.1/2022/2, para. 94.
[26] See https://unece.org/DAM/env/documents/2016/AIR/Decision2010_9and2013_1.pdf.
[27] See https:/unece.org/sites/default/files/2021-07/ECE_INF_2021_2_ECE%20Policy%20on%20GEEW_1.pdf.

(a) Reviewed and adopted the draft report containing decisions taken during the session;

(b) Entrusted the secretariat with the task of finalizing the report of the ninth joint session.

XIV. Closing of the ninth joint session

105. The Chair closed the ninth joint session.