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Executive Body for the Convention on Long-range
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**Steering Body to the Cooperative Programme for
Monitoring and Evaluation of the Long-range
Transmission of Air Pollutants in Europe**

Working Group on Effects

Seventh joint session

Geneva, 13–16 September 2021

Item 6 of the provisional agenda

**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**

Activities of the Bureaux 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

Note by the secretariat

Summary

The present note provides a report of the discussions at and outcomes of the meeting of the Bureaux and the Extended Bureaux 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 held online from 1 to 4 March 2021.



I. Introduction

1. The present note details the activities of the Bureau (comprised of the Chair and the Vice-Chairs) of the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) and of the Bureau of the Working Group on Effects under the United Nations Economic Commission for Europe (ECE) Convention on Long-range Transboundary Air Pollution (Convention). The two Bureaux, together with the respective Extended Bureaux (comprised of the Chairs and Co-Chairs of centres and task forces), held their joint meeting online from 1 to 4 March 2021.

A. Attendance

2. The following EMEP Steering Body Bureau members attended the meeting: Ms. Laurence Rouïl (France), Chair of the Steering Body, Mr. Xavier Querol (Spain), Vice-Chair of the Steering Body, Ms. Joanna Struzewska (Poland), Vice-Chair of the Steering Body, and Mr. Mike Holland (United Kingdom of Great Britain and Northern Ireland), Vice-Chair of the Steering Body. All the members of the Working Group on Effects Bureau attended the meeting: Ms. Isaura Rabago (Spain), Chair of the Working Group on Effects, Ms. Sabine Augustin (Switzerland), Mr. Jesper Bak (Denmark), Mr. Thomas Dirnböck (Austria),

Ms. Alessandra De Marco (Italy) and Ms. Gudrun Schuetze (Germany). Ms. Jennifer Kerr (Canada), Chair of the Working Group on Strategies and Review to the Convention, Ms. Dominique Pritula (Canada), Vice-Chair of the Working Group on Strategies and Review, Mr. Tiziano Pignatelli, Co-Chair of the Task Force on Techno-economic Issues, Ms. Susanne Lindahl and Mr. Martin Schneekloth (European Commission) also attended.

3. The meeting was attended by representatives of the following EMEP centres: the Chemical Coordinating Centre (CCC); the Centre on Emission Inventories and Projections (CEIP); the Centre for Integrated Assessment Modelling (CIAM); the Meteorological Synthesizing Centre-East (MSC-East); and the Meteorological Synthesizing Centre-West (MSC-West). Representatives of the following EMEP task forces participated: the Task Force on Emission Inventories and Projections; the Task Force on Hemispheric Transport of Air Pollution (TFHTAP); the Task Force on Integrated Assessment Modelling; and the Task Force on Measurements and Modelling (TFMM). Representatives of the following scientific centres and task forces 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) and the Centre for Dynamic Modelling (CDM); 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). Representatives of the World Health Organization (WHO) and its Regional Office for Europe, the World Meteorological Organization (WMO) and the Convention secretariat also attended. The meeting agenda is available online.¹

¹ Available at <https://unece.org/environmental-policy/events/emepwge-extended-bureaux-meeting-online>.

B. Organization of work

4. The meeting was chaired by Ms. Rabago and Ms. Rouil. Participants of the meeting expressed gratitude to Ms. Rouil and the French National Institute for Industrial Environment and Risks for organizing the part of the online meeting held on 2 March 2021². The meeting had originally been planned to be held in Geneva; however, due to travel restrictions imposed throughout Europe owing to the coronavirus disease (COVID-19) pandemic, it was decided to hold the meeting online instead.

5. The format of the annual joint meeting of the respective Bureaux and the Extended Bureaux was similar to that of the meeting held in 2020 (online, 24 to 26 March), with parts of the meeting dedicated specifically to effects-oriented issues under the Working Group on Effect and EMEP issues. The middle part of the meeting was dedicated to the joint activities of the two scientific communities. The key issues discussed were the:

- (a) Progress in the implementation of the science part of the 2020–2021 workplan for the implementation of the Convention (ECE/EB.AIR/144/Add.2);
- (b) Ecosystems monitoring under the Convention;
- (c) General discussion on the condensables;
- (d) Contribution to the review of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol), as amended in 2012, launched by the Executive Body at its thirty-ninth session (Geneva, 9–13 December 2019) (Executive Body decision 2019/4);³
- (e) Update of the strategies for EMEP⁴ and the Working Group on Effects;⁵
- (f) Agenda of the seventh joint session of the Steering Body to EMEP and the Working Group on Effects, to be held in Geneva, from 13 to 17 September 2021 (ECE/EB.AIR/GE.1/2021/1–ECE/EB.AIR/WG.1/2021/1);
- (g) Financial issues related to the Steering Body to EMEP and the Working Group on Effects.

II. Progress in the implementation of the 2020–2021 workplan

A. Highlights of the 2020–2021 workplan - Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe activities

6. The representatives of EMEP task forces and centres presented and discussed the key activities included in the science part of the 2020–2021 workplan for the implementation of the Convention. The purpose was to identify issues important in both the short- and the long-term. The proposed activities and deliverables for the 2022–2023 workplan were also presented. The participants welcomed the information provided and noted the following highlights:

² On 2 March, the meeting was split into two sessions that ran parallelly one focused on EMEP issues managed and moderated by Ms. Rouil and the other one focused on WGE issues was organized by the secretariat and moderated by Ms. Rabago. All the other parts of the meeting were organized by the secretariat.

³ All Executive Body decisions referred to in the present document are available at <https://unece.org/fr/node/4188>.

⁴ Available at www.unece.org/fileadmin/DAM/env/documents/2012/EB/Informal_document_no_20_Revised_Strategy_for_EMEP_for_2010-2019_clean_text.pdf.

⁵ Available at www.unece.org/fileadmin/DAM/env/documents/2012/EB/Informal_document_no_18_Revised_Long-term_Strategy_of_the_effects-oriented_activities_clean_text.pdf.

(a) Progress on black carbon (BC) emissions (absolute emission factors rather than percentage of particulate matter (PM)), coordination with the United Nations Framework Convention on Climate Change; planning for the next update of the *EMEP/EEA air pollutant emission inventory guidebook: Technical guidance to prepare national emission inventories* (EMEP/EEA Guidebook);⁶ contribution to the review of the Gothenburg Protocol (Ad Hoc group established); reporting of condensable part of PM and need to improve Guidebook content; contribution to the new 10-year strategy for EMEP (improving the science and the emission reporting (reported by the Task Force on Emission Inventories and Projections));

(b) In-depth review in 2021 (Bosnia and Herzegovina, Kazakhstan, Liechtenstein, Monaco and Montenegro); for the 2022 review, CEIP suggested a new sector-oriented approach (rather than country-oriented) for all Parties, the residential heating and road transport sectors could be reviewed with a focus on reporting of the inclusion of condensable emissions in PM inventories; for the review of condensable emissions, a Guidance document for reviewers had to be developed; the process would be further harmonized with the European Union National Emissions reduction Commitments Directive⁷ inventory review; emission data set for modellers 2021; review of adjustment applications in 2021 and plans for 2022; revision of annex II to the reporting guidelines (recommended structure of the Informative Inventory Report); questions in review of the Gothenburg Review (Centre on Emission Inventories and Projections);

(c) Results of the Eurodelta-Carb multi-model exercise (in collaboration with Copernicus Atmosphere Monitoring Service) demonstrated the benefit of including condensables in reporting residential emissions in terms of chemistry-transport model results; the average relative bias had been reduced by 20 per cent over Europe; validation of model results also benefited from the joint Intensive Measurement Period jointly organized by CCC and the European Union Research Infrastructure Aerosol, Clouds and Trace Gases Research Infrastructure Network/Chemical OnLine cOmpoSition and Source Apportionment of fine aerosol Cost Action (ACTRIS and COLOSSAL); results of a new trend assessment based on EMEP but also the European Environment Agency Air Quality e-Reporting database for the period 2000–2017 illustrated the benefit of mitigation actions in the context of the Review of the Gothenburg Protocol; mismatch between decline of emission reductions and magnitude of ozone peaks showed that understanding ozone trends constituted a real challenge; key topics to be discussed at the twenty-second meeting of the Task Force on Measurements and Modelling (10–12 May 2021) (Task Force on Measurements and Modelling);

(d) Continued work on condensables organic; a set of sectoral runs for 2018 had been added on to the EMEP Trend interface;⁸ importance of the residential heating sector for PM_{2.5} increased substantially when condensables were consistently taken into account; a report from the expert workshop on condensables (March 2020) was published;⁹ as a follow-up, continued discussion among MSC-W, CEIP, the Netherlands Organization for applied scientific research (TNO) and TFMM and on how to prepare emission data for the EMEP/MSW model runs in 2021; results from a study on the efficiency of reducing ammonia emissions to curb PM_{2.5} during the years 2005–2017–2030 was presented; advances in multiscale EMEP modelling and downscaling of PM_{2.5} for countries of Eastern Europe, the Caucasus and Central Asia (EECCA) performed with available data; trend runs showed that development of better emission inventories EECCA countries was necessary in order to give reasonable results for air pollution in those countries; active cooperation with MSC-W focusing primarily on the dry deposition (and soil moisture limitations) of ozone (Meteorological Synthesizing Centre-West);

(e) BC assessment in cooperation with the Arctic Monitoring and Assessment Programme (AMAP); investigations on the monitoring of chemicals of emerging concern;

⁶ See www.eea.europa.eu/publications/emep-eea-guidebook-2019.

⁷ 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, *Official Journal of the European Union*, L 344 (2016), pp. 1–31.

⁸ See <https://aerocom-trends.met.no/EMEP>.

⁹ See https://emep.int/publ/reports/2020/emep_mscw_technical_report_4_2020.pdf.

collaboration with other organizations, including the Copernicus Atmosphere Monitoring Service; suggestions on the implementation of a data licence, as well as the status for implementation of digital object identifiers to ensure data findability, accessibility, interoperability and reusability; suggestions for a future intensive campaigns and an effort to address microplastics (Chemical Coordinating Centre);

(f) Evaluation of toxic components of atmospheric aerosol from the residential combustion sector as a contribution to the TFMM/EuroDelta-Carb project; focus on in-depth analysis of polycyclic aromatic hydrocarbon (PAH) levels on a country-scale level performed as a part of a case study for Poland; work on attribution of long-term trends of mercury (Hg) and persistent organic pollutants (POPs) in the EMEP region and other regions performed in co-operation with TFHTAP; outreach activities on assessment of Hg pollution of the Arctic and atmospheric loads of heavy metals and POPs to the Baltic Sea and the North Sea performed in collaboration with AMAP, the Baltic Marine Environment Protection Commission (HELCOM) and the Convention for the Protection of the Marine Environment of the North-East Atlantic (OSPAR), respectively; proposed future directions of heavy metal and POP research activities (Meteorological Synthesizing Centre-East);

(g) Key activities 2020–2021: outreach efforts (HEAL, Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention), ECE Transport, Health and Environment Pan-European Programme, Nordic Council of Ministers); second meeting of the Expert Panel on Clean Air in Cities (EPCAC; online, 29 September 2020); reactivation of the Network for National Integrated Assessment Modelling; support to the Gothenburg Protocol review; assessment report on ammonia; prioritization and guidance on PM measures that also reduced BC; outlook for 2020–2029 (Task Force on Integrated Assessment Modelling);

(h) Contribution to prospects for reducing air pollution in Europe up to 2030 and beyond - Second Clean Air Outlook of the European Union; differences between emission reduction commitments and emission projections for 2030; support to the review of the Gothenburg Protocol; further development of multiscale modelling (joint work with MSC-West) building on experience in recent Asian project; Nordic Council-funded project on update of estimates and development of methods to implement condensables (led by MSC-W and TNO); Greenhouse Gas and Air Pollution Interactions and Synergies/EMEP modelling of global PM_{2.5} (Centre for Integrated Assessment Modelling);

(i) Review of the Gothenburg Protocol – draft answers from TFHTAP already available; regional versus extraregional trends of Hg, POPs and other chemicals of emerging concern; assessment needs of the Convention on Long-range Transboundary Air Pollution, the Minamata Convention on Mercury and the Stockholm Convention on Persistent Organic Pollutants; plans for 2022–2023 including Hg and POPs collaborative modelling, continued integration of results into the open-source FAst Scenario Screening Tool and possible exploration of microplastics atmospheric transport (Task Force on Hemispheric Transport of Air Pollution).

B. Highlights of the 2020–2021 workplan - Working Group on Effects activities

7. The representatives of the Working Group on Effects task forces and centres presented and discussed the key activities included in the science part of the 2020–2021 workplan for the implementation of the Convention. The purpose was to identify issues important in both the short- and the long-term. The proposed activities and deliverables for the 2022–2023 workplan were also presented. The participants welcomed the information provided and noted the following highlights:

(a) Update of the WHO Global Air Quality Guidelines; systematic review of evidence; progress on the report on “Human Health Effects of Polycyclic Aromatic Hydrocarbons (PAHs) as Air Pollutants”; cooperation with Parties, including subregional capacity-building training sessions in the Western Balkans and the Caucasus, while the 2020 subregional training for Central Asia had been postponed due to COVID-19 restrictions (Task Force on Health);

(b) Update on the ongoing exposure for trend analysis (limestone exposure delayed due to the pandemic, status of the case studies on United Nations Educational, Scientific and Cultural Organization (UNESCO) cultural heritage sites and the revision of the Manual to include non-transparent materials, painted steel, white plastic, polycarbonate membrane and transparent modern glass (ICP Materials);

(c) Update on the 2020 trend report and a report on nitrogen (N) that would cover two topics: (i) trends and spatial patterns in concentration of N species in water; (ii) biological responses – a literature review and a data analysis (phytoplankton response to N availability). Topic 2 was also meant to give background for the revision of the empirical critical loads for N; information on the follow-up on the European Union National Emission Ceilings Directive and a new project on capacity-building and reporting tools; contribution to effect-based monitoring under the Minamata Convention; planned publications inter alia on biological recovery, on water chemical records at 500 sites in Europe and North America and on N trends in deposition and surface waters in cooperation with EMEP (ICP Waters);

(d) Proposal to extend “Integrated Monitoring (IM) network to new types of ecosystems and different levels of monitoring intensity; continued work on Hg and other heavy metals; continued work on critical load exceedances and empirical ecosystem impact indicators; migration of ICP IM database from the Finnish Environment Institute to the Swedish University of Agricultural Science; minor revision of the ICP Integrated Monitoring Manual on epiphytic lichens to be decided by the Task Force (ICP Integrated Monitoring);

(e) The moss survey call for data was extended to 2022 due to the pandemic (that should not affect the delivery of the final report); state-of-knowledge reports and fact sheets completed and published on the website; some were related to the ECE region, and some were specifically aimed at outreach beyond the ECE region; a range of scientific and methodological advances were in progress to improve risk assessment of ozone impacts, and predictions of impacts in a range of climate conditions including interactions with climate change (ICP Vegetation);

(f) Update on the study on heavy metals in forest floors and topsoils of level I plots; effects of the pandemic: no major issues but some field and laboratory works slowed down, resulting in some delay in data submissions, problems in organizing ringtests and intercalibration courses (crown survey) were cancelled; forthcoming publications: Technical Report 2020 ICP Forests Brief 4 and information on the upcoming meetings in 2021 (ICP Forests);

(g) Update on communication actions towards National Focal Centres; the newsletter published twice a year since 2019; CCE briefed on finalized update and revision of the European background database of Critical Loads for eutrophication and acidification and the ongoing process of revision of empirical Critical Loads; crucial input to the review of the Gothenburg Protocol with the ongoing collation of updated national Critical Loads under the current call for data (2019–2021); CDM reported on its main achieved tasks with the launching of its web page and on progress made regarding its report on review of the dynamic modelling work under the Convention (ICP Modelling and Mapping, CCE and CDM).

C. Highlights of the 2020–2021 workplan – cross-cutting issues

8. Participants took note of the oral reports from the EMEP and Working Group on Effects centres and task forces on the key activities and priorities for science in the 2020–2021 workplan. The following key cross-cutting issues were reconfirmed:

(a) Support to Parties, for example, with regard to national research (national emission inventories and projections, air pollution and its effects monitoring, other effects-related work, local and subregional modelling, country case studies), easy access to monitoring and modelled data and technical knowledge, development of tools, etc.;

(b) Cooperation with internal and external partners within and beyond the ECE region;

(c) Depending on particular national needs, continuation and, where needed, extension of the technical support to countries in Eastern and South-Eastern Europe, the Caucasus and Central Asia.

9. The science-related items contained in the current 2020–2021 workplan and priorities within EMEP and the Working Group on Effects would be discussed during the task force meetings between March and June 2021 and would be presented and discussed during the seventh joint session in September 2021.

D. Cooperation with LifeWatch European Research Infrastructure Consortium

10. The Chair of the Working Group on Effects gave a briefing on developments under LifeWatch European Research Infrastructure Consortium, reporting on the outcome of the 2019 call for projects regarding ecosystem functioning and biodiversity. Unfortunately, there had been major delays in the process and finally the Guadalquivir Hydrographic Confederation – project leader– declined to participate due to the lack of time to properly address project commitments. Therefore, several ICPs that had helped to develop the project proposal and planned to participate, would not take part in the project either.

E. Possibility for cooperation between the Working Group on Effects and the integrated European Long-Term Ecosystem, critical zone and socio-ecological Research Infrastructure

11. The Chair of the Working Group on Effects reported on recent contacts with the integrated European Long-Term Ecosystem, critical zone and socio-ecological Research Infrastructure (eLTER RI) and possibilities for future cooperation. Various elements of potential cooperation had been discussed, including the framework, scope and funding needs and possibilities. The discussion on cooperation would continue during the remaining part of 2021. Information on progress in that regard would be provided during the seventh joint session.

F. Cooperation and information-sharing with partner organizations and other regions

12. Several of the Convention centres and task forces reported on ongoing and planned activities in cooperation with countries in other regions, partner organizations and other international projects and bodies within (for example, European Union research projects) and beyond the ECE region. Several opportunities for increased cooperation, communication and information-sharing were mentioned, in particular in relation to work on:

(a) Development and reviews of national emission inventories; atmospheric and ecosystem monitoring and modelling (the European Union, the Copernicus Atmosphere Monitoring Service, eLTER RI; various research projects and studies, for example, ACTRIS and COLOSSAL, EuroDelta-Carb);

(b) BC emissions, monitoring and modelling (the Arctic Council/AMAP; the Intergovernmental Panel on Climate Change; the WMO-Global Atmosphere Watch Programme);

(c) POPs and Hg (AMAP, European Union, the Minamata Convention and the Stockholm Convention, the United Nations Environment Programme);

(d) Protection of marine ecosystems (HELCOM and OSPAR).

13. Participants welcomed the various outreach activities and information-sharing efforts and encouraged all the centres, task forces, groups and the secretariat to continue such actions, pointing to the need for activities at various levels (individual experts, research groups, task forces, centres and bodies under the Convention). Participants reaffirmed that outreach activities should be beneficial for both sides. The scientific cooperation and

outreach efforts beyond the ECE region could contribute to the activities of the recently launched forum for international cooperation on air pollution (Executive Body decision 2019/5).

G. Improving cooperation between the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe and the Working Group on Effects

14. The participants confirmed the need to further improve cooperation between EMEP and the Working Group on Effects. The Convention had been set up to govern policy on air pollution mitigation based on effects (ecosystem effects: acidification, eutrophication, biodiversity and health effects). In particular, in 2021–2022, cooperation between EMEP and the Working Group on Effects should help to prepare substantial input of the two scientific bodies to the Gothenburg Protocol review.

15. The participants welcomed the information provided and recommended that discussions on the improvement of cooperation should continue during the seventh joint session.

III. Review of the Gothenburg Protocol

16. At its thirty-ninth session, the Executive Body had decided (decision 2019/4) to initiate the review of the Gothenburg Protocol, as amended in 2012. At its fortieth session (Geneva, 18 December 2020), the Executive Body had adopted decision 2020/2 on the plan for undertaking the review of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, as amended in 2012, pursuant to its article 10. In operative paragraph 2 of that decision, it requested that the Convention’s subsidiary bodies consider the tasks contained in annex I to the document entitled “Preparations for the review of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone as amended in 2012” (ECE/EB.AIR/2020/3–ECE/EB.AIR/WG.5/2020/3) to be carried out to support the review of the Gothenburg Protocol, and also requested that implicated bodies submit to the secretariat, by 1 February 2021, timelines for completion and initial input, and that any further input from implicated bodies, in consideration of the tasks in annex I to the above-mentioned document, be submitted as informal documents for consideration by the Working Group on Strategies and Review at its fifty-ninth session (Geneva (hybrid), 18–21 May 2021).

17. The Executive Body further requested the Chair of the Working Group on Strategies and Review to: compile the inputs and information received into an annotated outline; undertake the policy-related work of the review, including assessing the policy implications of the information received; and elaborate and prepare the report of the review, including its conclusions (Executive Body decision 2020/2, operative para. 4).

18. Ms. Pritula – a member of the Gothenburg Protocol review group – presented information on the annotated outline of the review. The Gothenburg Protocol review group had been tasked by the Chair of the Working Group on Strategies and Review with developing the preparatory document on the review entitled “Preparations for the review of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone, as amended in 2012” to facilitate the discussion. Annex I to the preparatory document provided a list of questions to the subsidiary bodies under the Convention.¹⁰ The list of questions could be helpful to subsidiary bodies in preparing for the review. The EMEP Steering Body and the Working Group on Effects subsidiary bodies might need to adjust their 2020–2021 workplan activities, as appropriate, to be able to undertake some of the work required for the review. She presented key priorities for the review, actions needed, a draft outline of the review report and the time frame for the review.

¹⁰ See:

https://unece.org/sites/default/files/2021-05/GP%20review%20report_1st%20draft_ks_rm_clean.pdf.

19. The representatives of EMEP and Working Group on Effects Bureaux, centres and task forces held separate sessions (run in parallel) to present and discuss in detail their contributions to the review.

20. The effects community, in particular discussed the answers to questions in section 2 of annex I: Review of progress made towards achieving the environmental and health objectives of the Protocol,¹¹ namely questions: 2.2.b-c, 2.3.a-b, 2.4.a-b; 2.5.a 2.7 and 2.8). For each question, the lead and contributing centres and task forces were identified. The timing for action was also discussed and agreed.

21. Ms. Schütze, supported by Mr. Markus Geupel (German Environment Agency), presented a proposal for an ad-hoc expert group on marine protection (in connection with question 2.8). The idea for such an ad-hoc group had been presented at the fortieth session of the Executive Body. Ms. Schütze presented the objectives for the ad-hoc group, its possible composition and possible next steps.

22. The meeting participants decided to set up an ad-hoc group to address marine ecosystem protection issues. Ms. Schütze and Germany would lead the group and the expected participation would include: ICP Modelling and Mapping, ICP Waters and Integrated Assessment Modelling. The objective of the group would be to explore options on how to consider available marine eutrophication effects indicators in the analysis of optimized emission reduction allocations (with and without) taking into account marine ecosystem protection. The activity would start with HELCOM eutrophication effects indicators/Maximum Allowable Inputs analysis. At a later stage, a similar approach could be taken for OSPAR indicators (if feasible). The discussion on marine ecosystem protection would be continued at the seventh joint session.

23. The EMEP task forces and centers reviewed and discussed a number of questions of the annex I of the draft document, prepared by the Gothenburg Protocol review group, related to emissions (questions 1.1, 1.2, 1.3, 1.4), to black carbon and condensable in PM (questions 4.1, 4.2, 4.3, 4.4), measured and modelled atmospheric concentrations and deposition levels (questions 2.1, 2.2, 2.3.a, 2.6; 2.7, 6.3.c) and hemispheric transport (questions 3.2, 3.3, 3.4). For each question, the lead and contributing centres and task forces were identified. The timing for action was also discussed and agreed.

24. Most of the questions can be answered considering the work carried out by the EMEP task forces and centers and by the national experts. However, the experts also noted that it would be difficult to comply with some requested deadlines since the assessment work was still going on (e.g. trend analysis, modelling exercises). Nevertheless, relevant results would be made available for the Gothenburg Protocol review group and the policy by the first quarter of 2022 the latest.

25. For all topics, a tricky issue discussed in the perspective of the review of the Gothenburg Protocol was the spatial resolution of modelling results. Defining the optimal resolution to deal with policy questions and assess the effects and the impacts of control strategies was essential and should be considered in the protocol objectives, with respect to interlinkages between the scales (urban/regional/global). Answers to this question depend on the pollutants and indicators considered and would drive future measurements and modelling strategies.

26. Following the Extended Bureaux meeting, the initial contribution from the EMEP and the Working Group on Effects communities was forwarded to the Gothenburg Protocol review group and included in an informal document for the fifty-ninth session of the Working Group on Strategies and Review. The informal document was a compilation of inputs from subsidiary bodies received by 9 April 2021 and incorporated into the draft annotated outline of the report on the review of the Gothenburg Protocol (ECE/EB.AIR/WG.5/2021/4). The informal document constituted the Gothenburg Protocol review group working draft of the review. That draft would continue to be elaborated by the Gothenburg Protocol review group throughout the seventh joint session of the EMEP Steering Body and the Working Group on

¹¹ See annex I of document ECE/EB.AIR/2020/3–ECE/EB.AIR/WG.5/2020/3, available at: <https://unece.org/info/Environmental-Policy/Air-Pollution/events/350034>.

Effects and would become an official document for the Executive Body meeting in December 2021. The document was open for further improvements and additions until 15 July 2021. An updated version of that document would be available as an informal document for the seventh joint session.

IV. Update of strategies for the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe and for effects-related activities

27. At their fifth joint session (Geneva, 9–13 September 2019), the EMEP Steering Body and the Working Group on Effects had decided to prepare updates to the EMEP and Working Group strategies – to be elaborated in 2020, for consideration and endorsement at their sixth joint session (Geneva, 14–17 September 2020) – to be forwarded to the Executive Body for its consideration and approval at its fortieth session (ECE/EB.AIR/GE.1/2019/2–ECE/EB.AIR/WG.1/2019/2, para. 72 (b)). Participants agreed that the updated strategies should be formulated in a combined document. The draft updated strategy should be in line with the provisions of the long-term strategy for the Convention on Long-range Transboundary Air Pollution for 2020–2030 and beyond (Executive Body decision 2018/5). The Chairs of the EMEP Steering Body and the Working Group on Effects would take the lead in preparing the draft strategy based on inputs from scientific centres and task forces.

28. Similarly to the discussion held at the 2020 Extended Bureaux meeting, during the joint parts of the 2021 Extended Bureaux meeting, representatives of centres and task forces under the Working Group on Effects presented the key achievements in implementing the Revised long-term strategy of the effects-oriented activities¹² over the past ten years, and proposed elements relevant for the update of the strategy (new priorities, future scientific work and road map). Similarly, representatives of EMEP task forces and centres presented the key achievements in implementing the Revised strategy for EMEP for 2010–2019¹³ and proposed elements relevant for the update of the strategy. The presentations were followed by an extensive discussion that focused on key elements and common and cross-cutting issues among EMEP and Working Group on Effects communities. The key achievements of the scientific centres and task forces under the Convention had been included in their revised mandates (decisions 2019/6–2019/21).

29. The Chairs of the EMEP Steering Body and the Working Group on Effects presented the progress on the updated strategy. The format of the updated strategy document would be inspired by the format of the long-term strategy. It would consist of four major parts: introduction (framework, mandates, objectives); strengths and successes (achievements over the past 10 years for EMEP and the Working Group on Effects); remaining challenges regarding the long-term strategy; and proposed strategies to deal with those challenges. The updated strategy would include approaches to address the identified remaining challenges:

- (a) Improving knowledge on emissions (focus on PM, volatile organic compounds, persistent organic compounds, heavy metals and methane);
- (b) Improving knowledge on pollutants behaviour based on monitoring and modelling;
- (c) Improving knowledge on effects;
- (d) Linking science to policy – impact assessment and mitigation strategies;
- (e) Engagement with Convention Parties and linked with other policy goals.

¹² Available at www.unece.org/fileadmin/DAM/env/documents/2012/EB/Informal_document_no_18_Revised_Long-term_Strategy_of_the_effects-oriented_activities_clean_text.pdf.

¹³ Available at www.unece.org/fileadmin/DAM/env/documents/2012/EB/Informal_document_no_20_Revised_Strategy_for_EMEP_for_2010-2019_clean_text.pdf.

30. Due to the pandemic, the work on the updates to the EMEP and Working Group strategies could not be completed as planned and would continue through 2022. The contributions to and the outcome of the Gothenburg Protocol review would be taken into account but the updated strategy should be conceived in a longer perspective (until 2030).

V. Preparations for the seventh joint session of the Steering Body and the Working Group on Effects

31. The Bureaux discussed the agenda and format for the seventh joint session of the Steering Body and the Working Group on Effects. The draft session agenda would be developed by the secretariat in collaboration with the Chairs of the Steering Body and the Working Group on Effects. The Working Group on Effects-related issues would be taken at the beginning of the session, followed by a joint part (EMEP/Working Group) including the thematic session and followed by EMEP-specific issues. The joint part of the session would include the following issues: the contribution of the Convention scientific bodies to the review of the Gothenburg Protocol; preparation of the science part of the Convention 2022–2023 workplan for the implementation of the Convention and preparation of the updated strategy for EMEP and the Working Group on Effects. The joint thematic session would be held to discuss the contribution of scientific bodies to the review of the Gothenburg Protocol. The session would give EMEP centres, task forces and the international cooperative programmes under the Working Group on Effects the opportunity to present results and conclusions from their work relevant to the review.

32. The Bureaux re-emphasized that the agenda item focusing on information-sharing by Parties on the implementation of EMEP and of effects-oriented activities should continue to be a regular item during the joint sessions. Parties would be invited to present their national experiences, successes (including scientific reports and publications) and challenges in their collaboration with EMEP and Working Group on Effects centres and task forces.

33. The Bureaux noted the information provided by the secretariat that, in view of the measures taken by the Parties and the United Nations in response to the pandemic, the seventh joint session would be held online.

VI. Financial and budgetary matters

A. Status of voluntary cash contributions and payments for centres for work done in 2020

34. The secretariat reported that the amount contributed by Parties in 2020 had been \$635,886, \$144,105 of which had been earmarked for ICP Waters, ICP Forests and CIAM, while the non-earmarked amount had been \$491,781. The total amount of \$635,500 would be distributed among the nine centres under the Working Group on Effects. The Bureaux took note of the information presented by the secretariat.

35. The secretariat reported on the status of payments for work done in 2020 for centres under EMEP and the Working Group. Some payments were still being disbursed. The secretariat further reported that, in early 2021, it had sent out letters requesting Parties to pay their recommended voluntary contributions for 2021.

B. Preparation of contracts for centres in 2021

36. The secretariat recalled the procedure for managing grants to implementing partners introduced at ECE in 2020. Grant agreements for 2021 would be signed under the new procedure. The secretariat noted that the new procedure introduced a new step that required the centres to apply for funding. The required applications would be prepared by the secretariat on behalf of the centres. The secretariat informed that the current memorandums of understanding with the centres would expire on 30 June 2021 and would be extended for

another 5-year period. The secretariat would be in contact with all the centres regarding the next steps.

37. The Bureaux took note of the information provided by the secretariat and requested the secretariat to begin preparations for contracts in 2021 as early as feasible. More details on financial and budgetary issues could be found in the document on financial and budgetary matters for the seventh joint session (ECE/EB.AIR/GE.1/2021/19–ECE/EB.AIR/WG.1/2021/12).

38. Participants of the meeting discussed the International coordination costs for core activities in 2022 not funded through the Protocol on long-term financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe as presented in table 10 of document ECE/EB.AIR/2020/1. It was noted that the table includes estimates of costs (financial needs) for ICP centres, CIAM and Task Force on Health disaggregated by type of activities. Participants noted that if there was a need to discuss and update the estimates, an informal meeting among the centres concerned could be organized to prepare a proposal for an updated version of the table.

C. Proposal for the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe budget in 2022

39. The Bureaux did not discuss the proposal for the EMEP budget in 2022. The Chair and the Vice-Chairs of the Steering Body discussed and prepared the draft EMEP 2022 budget in the weeks following the Extended Bureaux meeting. The total amount of the EMEP budget for the year 2022 would be the same as for the 2021 budget, the main question being budget sharing amongst the EMEP centres with respect to the priorities set in the 2022–2023 workplan. The EMEP Steering Body would discuss the draft proposal at the seventh joint session.

VII. Next joint meeting of the Bureaux and the Extended Bureaux

40. The next joint meeting of the Bureaux and the Extended Bureaux of the EMEP Steering Body and the Working Group on Effects could be held in the week of 22 to 26 March 2022 in Geneva. Alternatively, the meeting could be organized in, for example, Paris or Oslo – according to informal interests announced by Extended Bureaux members from France and Norway, respectively.
