

**Economic Commission for Europe****Executive Body for the Convention on Long-range
Transboundary Air Pollution****Thirty-eighth session**

Geneva, 10–14 December 2018

Item 7 of the provisional agenda

Revised mandates of task forces and centres under the Convention**Revised mandates for the centres under the Steering Body to
the Cooperative Programme for Monitoring and Evaluation
of the Long-range Transmission of Air Pollutants in Europe
(EMEP)*****Submitted by the Steering Body to EMEP***Summary*

The mandates for the centres under the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) are proposed for revision with the aim to continue to align the work of centres under the Convention with its strategic priorities taking into consideration the policy response to the 2016 scientific assessment of the Convention, as contained in the current document.

The Executive Body at its thirty-seventh session (Geneva, 11–14 December 2017) took note of the draft revised mandates under the Steering Body to EMEP and the Working Group on Effects and requested that the final version be submitted for its consideration at the thirty-eighth session. The EMEP Steering Body discussed the draft revised mandates of its task forces and centres at the fourth joint session of the Working Group on Effects and the Steering Body to EMEP (Geneva, 10–14 September 2018) compiled by the Chair of the Steering Body with support from the secretariat. It agreed to submit to the Executive Body for its consideration a version revised by the Chair of the EMEP Steering Body, the Chair of the Working Group on Effects, the heads of the EMEP centres and the Bureau of the Executive Body in line with discussions and comments received.

* The present document is being issued without formal editing.

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Revised mandates for the centres under the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)

A. Revised mandate for the Chemical Coordinating Centre

1. Introduction

1. The Chemical Coordinating Centre has been in operation since 1979 - the beginning of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP). The Centre has been carrying out its functions as one of three cooperating international centres of EMEP as indicated in Article 1 of the Protocol on Long-term Financing of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP Protocol). It is responsible for coordinating the measurement programme of EMEP. The centre contributes to scientific assessment of past trends and current status in air pollution throughout the United Nations Economic Commission for Europe (ECE) region and to evaluation of the implementation of the Protocols of the Convention.

2. Within the period of its existence, the Centre has supported the Parties to the Convention and EMEP, inter alia, through the following actions:

(a) Developed and updated the EMEP monitoring strategy (including quality assurance framework) and supporting the Parties in ~~its~~ implementation to ensure availability of high quality comparable data on air pollution throughout the ECERegion;

(b) Promoted and disseminated best practices available and recommendations for implementation of the EMEP monitoring strategy, in particular thanks to the provision of the EMEP Manual for Sampling and Chemical Analysis;

(c) Contributed to the improvement of the scientific understanding of the processes that control European air pollution levels through regular intensive measurement campaigns;

(d) Participated to the elaboration of assessment report and trend analyses of air pollution concentrations and deposition in the EMEP domain over the past 40 years;

(e) Developed and maintained the database hosting observation data of atmospheric chemical composition and physical properties (EBAS) which collects, gathers, checks and publishes all observations and measurements ~~realized-performed~~ by the Parties to the Convention;

(f) Supported and assisted Parties for running new observation sites, especially in the Eastern Europe, the Caucasus and Central Asia.

3. The mandates for the EMEP centres ~~need to be arc being~~ revised and updated to ensure that they are consistent with the provisions of the amended protocols to the Convention, ~~as well as its and to take into account~~ strategic priorities ~~as~~ set out in the following documents:

(a) Revised Long-term Strategy for the Convention on Long-range Transboundary Air Pollution (~~ECE/EB.AIR/2018/4~~);

Commented [US1]: To be updated after adoption of the LTS

- (b) The 2016 scientific assessment of the Convention;¹ and;
 - (c) Policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3, ECE/EB.AIR/WG.5/2017/3/Corr.1 and ECE/EB.AIR/2017/4).
4. The Centre is responsible for communicating with national experts, for maintaining an up-to-date webpage that includes information on Centre's work, and for other organizational arrangements in accordance with the biennial workplan.
5. The Centre is responsible for carrying out the work assigned to it in the biennial workplans approved by the Executive Body, and reporting thereon, as well as for keeping other relevant bodies apprised of its work.

2. Revised mandate for the Chemical Coordinating Centre (CCC)

6. The Chemical Coordinating Centre hosted by the Norwegian Institute for Air Research (NILU), is responsible for providing scientific support to the Convention with information on measurements of all pollutants and precursors addressed by the Convention.
7. The Chemical Coordinating Centre reports on its activities and deliverables to the Steering Body to EMEP.
8. The annual costs of the EMEP Centres are financed in accordance with the 1984 Protocol on long-term financing of EMEP, from contributions by the Parties to the Convention on the basis of the budget approved by the Executive Body for the Convention upon the recommendation of the Steering Body to EMEP⁷. The functions of the Centre are to:
- (a) Develop and coordinate of the observation activities required to assess air pollution across the EMEP geographical domain:
 - (b) Secure and improve the quality and representativeness of observations:
 - (i) Develop adequate methodology to support EMEP needs where not available elsewhere, harmonization with Comité Européen de Normalization (CEN), the International Standardization Organization (ISO) and the metrology community etc.;
 - (ii) Develop and update the measurement guidelines and standard operation procedures in co-operation with the Task Force on Measurements and Modelling, World Meteorological Organization (WMO)/Global Atmosphere Watch and others;
 - (iii) Organize training courses and undertake site visits (selection of new sites, audits) and laboratory audits;
 - (iv) Arrange regular laboratory intercomparisons for all variables required by the EMEP monitoring strategy, and link results to data usage and interpretation;
 - (v) Arrange field intercomparisons; assess the representativeness of observations.
 - (c) Carry out quality assurance and quality control of data submitted by Parties:
 - (i) Development of data reporting templates allowing sufficient meta-data provision;
 - (ii) Training and assistance to personnel involved in data reporting;

¹ See Rob Maas and Peringe Grennfelt, eds., *Towards Cleaner Air: Scientific Assessment Report 2016* (Oslo, 2016) and United States Environmental Protection Agency and Environment and Climate Change Canada, *Towards Cleaner Air: Scientific Assessment Report 2016 – North America* (2016).

- (iii) Technical handling of data flow; checking of individual datasets submitted, including statistical methods, visual inspection of time series plots, consistency in time and space; bi-lateral discussions, corrections and re-submissions with data originators;
- (d) Archive and disseminate observation data and associated meta-data to users²

including development and operational support of the underlying IT-infrastructure used to host data and provision of access to data for operational users (other EMEP centers, external modeling groups, external users (European Environment Agency (EEA), WMO/Global Atmosphere Watch, Copernicus Atmosphere Monitoring Service, others);

- (e) Improve the timeliness of observation data to users (EMEP Near-Real-Time);
- (f) Assess data and provide information to stakeholders about results from monitoring activities;
- (g) Support Parties, EMEP centres and others in data assessments and interpretations; provide expert advice in the use of data, taking into account knowledge about data quality and other metadata; prepare data reports providing status of observations and main findings;
- (h) Contribute to the EMEP Status reports prepared for the EMEP Steering Body; serve the interest of EMEP monitoring activities towards relevant activities under other frameworks to ensure harmonization, efficient use of resources and multiple use of data; promote the use of EMEP observations in supporting European scale assessment of air pollution and source apportionment with respect to monitoring required in response to the European Union directives; maintain links to external bodies addressing similar issues within Europe (EEA, the Baltic Marine Environment Protection Commission (HELCOM), the Commission for the Protection of the Marine Environment of the North-East Atlantic (OSPAR Commission), others; maintain links to external bodies addressing similar issues outside Europe (Arctic Monitoring and Assessment Programme (AMAP), WMO/Global Atmosphere Watch, Stockholm Convention on Persistent Organic Pollutants, Minamata Convention on Mercury, regional programs in Northern America, South East Asia and elsewhere (in collaboration with the Task Force on Hemispheric Transport of Air Pollution); Promote EMEP observations as a contribution to Copernicus Atmosphere Monitoring Service and the Global Earth Observation System of Systems; Encourage the involvement of research groups to ensure implementation of EMEP Level 2 and Level 3 monitoring activities;
- (i) Carry out other tasks assigned to it by the EMEP Steering Body and the Executive Body.

B. Revised mandate for the Centre for Integrated Assessment Modelling

1. Introduction

9. In 1999, the Centre for Integrated Assessment Modelling was established by a decision of Executive Body ECE/EB.AIR/68) to offer to the Parties, the scientific task forces and centres under the Convention and other international organizations, scientific support in development of cost-effective emission control strategies. It is responsible for integrated assessment modelling of EMEP. The centre contributes to scientific assessment of past trends and status in air pollution throughout the ECE region and to evaluation of the implementation of the Protocols of the Convention.

² <http://ebas.nilu.no>.

10. Within the period of its existence, the Centre has supported the Parties to the Convention and EMEP, inter alia, through the following actions:

- (a) Contributed to the improvement of the scientific understanding of the processes that control European air pollution levels through development and regular updating the Greenhouse Gas Air Pollution Interactions and Synergies (GAINS) model – a modelling tool for advanced integrated assessment of climate change and air pollution;
- (b) Participated in the elaboration of assessment report and trend analyses of air pollution concentrations and deposition in the EMEP domain over the past 40 years;
- (c) Incorporated the results of the Meteorological Synthesizing Centre-West (MSC-W) atmospheric dispersion model as well as the latest information on critical loads and ozone fluxes into the GAINS model;
- (d) Cooperated with the Task Force on Health to maintain the health impact assessment in GAINS in line with latest scientific findings;
- (e) Conducted analyses of the likely future health and ecosystems impacts resulting from the current trends in energy use, agricultural activities, industrial production, considering the effects of the already agreed emission control measures;
- (f) Explored the cost-effectiveness of further emission controls, in view on their impacts on human health and ecosystems.

11. The mandates for the EMEP centres ~~need to be~~ are being revised and updated to ensure that they are consistent with the provisions of the amended protocols to the Convention, ~~as well as its and to take into account the findings and~~ strategic priorities ~~as~~ set out in the following documents:

- (a) Revised Long-term Strategy for the Convention on Long-range Transboundary Air Pollution (~~ECE/EB.AIR/2018/4~~);
- (b) The 2016 scientific assessment of the Convention; and
- (c) Policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3, ECE/EB.AIR/WG.5/2017/3/Corr.1 and ECE/EB.AIR/2017/4).

12. The Centre is responsible for communicating with national experts, for maintaining an up-to-date webpage that includes information on Centre's work, and for other organizational arrangements in accordance with the biennial workplan.

13. The Centre is responsible for carrying out the work assigned to it in the biennial workplans approved by the Executive Body, and reporting thereon, as well as for keeping other relevant bodies apprised of its work.

2. Revised mandate for the Centre for Integrated Assessment Modelling (CIAM)

14. The Centre for Integrated Assessment Modelling (CIAM) hosted by the International Institute for Applied Systems Analysis (Austria), is responsible for providing scientific support to the Convention on the development of cost-effective emission control strategies that protect human health and vegetation from the adverse effects of air pollution. The Centre continues to develop an integrated assessment modelling tool for scientific assessment of past and future trends in air pollution throughout the ECE region.

15. The Centre reports on its activities and deliverables to the Steering Body to EMEP.

16. The annual costs of the EMEP Centres are financed in accordance with the 1984 Protocol on long-term financing of EMEP, from contributions by the Parties to the Convention on the basis of the budget approved by the Executive Body for the Convention upon the recommendation of the Steering Body to EMEP.

17. The functions of the Centre are to:

(a) Maintain, develop further and harmonize common methods and tools for the scientific assessment of cost-effective emission control strategies and to explore the distributions of costs and benefits across Parties;

(b) Maintain the GAINS model as 'state-of-the-art' tool for convention analyses, integrate information from of the various scientific bodies under EMEP and WGE in the GAINS model and organize ex post analyses by these scientific bodies:

(i) Improve methodologies and understanding of processes, parametrizations, and linkages to climate, biodiversity and vegetation impacts;

(ii) Enhance the modelling of multi-scale air quality management approaches, integrating from the urban to the hemispheric scale.

(c) Update the GAINS databases on energy and agricultural statistics, activity projections, emission inventories, emission control options and their costs taking into account latest national and international data sources, and consult with experts from Parties on these data;

(d) Facilitate the use of the GAINS model by Parties, e.g. by providing on-line access to the model and its databases over the Internet and providing training courses for GAINS model users;

(e) Provide support and facilitate involvement of Parties in Eastern Europe, the Caucasus and Central Asia, e.g. by model training courses, support on the use of GAINS data and tools; and, to the extent funding allows, national versions of the GAINS model; Assess future scenarios and the cost-effectiveness of abatement strategies as upon the request of the WGSR;

(f) Perform model simulations to trace progress towards the existing emission control protocol and support the design of new or revised Protocols, when necessary;

(g) Closely collaborate with:

(i) The Task Force on Emission Inventories and Projections and the Centre on Emission Inventories and Projections to improve emission estimates and projections;

(ii) MSC-W and the Task Force on Measurements and Modelling to use the latest version of the EMEP model for source-receptor relationships and the development of a methodology to assess local exposure;

(iii) The Task Force on Health and the International Cooperative Programme on Modelling and Mapping of Critical Levels and Loads and Air Pollution Effects, Risks and Trends (ICP Modelling and Mapping) to use the latest findings on exposure response relationships and impacts on biodiversity;

(iv) The Task Force on Hemispheric Transport of Air Pollution to assess cost-effective abatement strategies at the hemispheric scale.

(h) Exchange information with AMAP, the Climate and Clean Air Coalition (CCAC), the Organization for Economic Co-operation and Development (OECD), United Nations Environment Programme (UNEP), the World Health Organization (WHO) and the World Bank to encourage cost-effective strategies for health and ecosystems at a global scale; Cooperate with CCAC on short-lived climate pollutants, with UNEP on hemispheric and global emission scenarios, the European Commission for in-depth analyses for the Member States of the European Union, the Arctic Council and AMAP on modelling pollution controls that benefit the Arctic and the modelling of short-lived climate pollutant (SLCP) impacts, HELCOM and OSPAR on the modelling of emissions from shipping;

- (i) Carry out other tasks assigned to it by the EMEP Steering Body and the Executive Body.

C. Revised mandate for the Centre on Emission Inventories and Projections

1. Introduction

18. In 2007, the Centre on Emission Inventories and Projections was established by a decision of Executive Body (ECE/EB.AIR/91) to offer to the Parties, the EMEP task forces and centres and other international organizations, its expertise, databases and tools related to air pollutant emission inventories. It is responsible for coordinating the emission related work of EMEP. The centre contributes to scientific assessment of past trends and current status ~~in~~ air pollution throughout the ECE region and to evaluation of the implementation of the Protocols of the Convention.

19. Within the period of its existence, the Centre has supported the Parties to the Convention and EMEP, inter alia, through the following actions:

(a) All emission data reported by Parties are stored in a database and publicly accessible via the CEIP website. In addition, the emission data are presented in interactive data viewers;

(b) Results of the initial checks (Stage1 and Stage2) are provided to Parties and EMEP annually. CEIP organized two cycles of in-depth reviews of emission inventories since 2008. Up to 10 Parties are reviewed annually, 44 in a five-year cycle. In addition, CEIP developed a system for the annual review of adjustment applications and is managing the process since 2015. Reported applications are assessed by two independent reviewers. Recommendations of the expert review team are submitted to the EMEP Steering Body in a status report and published on the CEIP website;

(c) A module based gridding system with detailed spatial resolution of 0.1° x 0.1° (longitude/latitude) is in place and data for modellers are provided annually. Technical reports on methodologies used for gap filling and information on discrepancies between reported and expert emission estimates of the main pollutants, particulate matters, heavy metals and persistent organic pollutants were published.

20. The mandates for the EMEP centres ~~need to be~~ are being revised and updated to ensure that they are consistent with the provisions of the amended protocols to the Convention, ~~as well as its~~ and to take into account the findings and strategic priorities ~~as~~ set out in the following documents:

(a) Revised Long-term Strategy for the Convention on Long-range Transboundary Air Pollution ~~(ECE/EB.AIR/2018/1)~~;

(b) The 2016 scientific assessment of the Convention; and

(c) Policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3, ECE/EB.AIR/WG.5/2017/3/Corr.1 and ECE/EB.AIR/2017/4).

21. The Centre is responsible for communicating with national experts, for maintaining an up-to-date webpage that includes information on Centre's work, and for other organizational arrangements in accordance with the biennial workplan.

22. The Centre is responsible for carrying out the work assigned to it in the biennial workplans approved by the Executive Body, and reporting thereon, as well as for keeping other relevant bodies apprised of its work.

2. Revised mandate for the Centre on Emission Inventories and Projections (CEIP)

23. The Centre on Emission Inventories and Projections Centre hosted by the Environmental Agency (Austria) assumes principal responsibility for coordinating the emission related work under EMEP.

24. The Centre reports on its activities and deliverables to the Steering Body to EMEP.

25. The annual costs of the EMEP Centres are financed in accordance with the 1984 Protocol on long-term financing of EMEP, from contributions by the Parties to the Convention on the basis of the budget approved by the Executive Body for the Convention upon the recommendation of the Steering Body to EMEP.

26. The functions of the Centre are to:

(a) Compile emission data reported by Parties to the Convention and their import into the CEIP database. Maintain and improve of EMEP/CEIP database system and CEIP website. Adjust the database system (WebDab, RepDab) according to new reporting requirements and reporting formats. Make reported data accessible to public on the web;

(b) Carry out annual quality control of inventories reported under the Convention. Evaluate timeliness, consistency, completeness of submitted data. Plan and organize annual technical in-depth review of submitted inventories. Regularly improve/develop new tests for emission checking. Set up review teams and communicate with Parties. Communicate the results to the Parties and the EMEP Steering Body;

(c) Develop emission data sets for modellers, i.e. develop gridded data of EMEP pollutants for EMEP area. In particular calculate expert estimates for missing data and use "Module based gridding system and proxies for the spatial distribution of gap-filled emission data for the new EMEP grid domain in geographical coordinates ($0.1^\circ \times 0.1^\circ$ longitude/latitude). Develop distribution of emissions for Parties which do not report gridded data. Perform checks of gridded data. In transition period provide gridded data also in resolution 50 x 50km EMEP grid if requested;

(d) Support the secretariat by review compliance with reporting obligations: periodic review of compliance with Parties' reporting obligations, based on emission and projection data submitted to EMEP and available in the WebDab emission database;

(e) Support EMEP by managing review of adjustment applications to emission reduction commitments or inventories and any supporting documentation submitted by Parties in accordance with Executive Body decisions 2012/3, 2012/4 and 2012/12. Set up review teams and communicated with Parties. Maintain the on-line database system for storage and review of approved adjustments and supporting documentation provided by Parties;

(f) Assess emission uncertainties by comparison of Convention data with emission data from other sources - the Joint Research Centre of the European Commission, the International Institute for Applied Systems Analysis (IIASA), United Nations Framework Convention on Climate Change, others - and to the extent possible quantification of the differences;

(g) Cooperate closely with the secretariat, the Task Force on Emission Inventories and Projections and EEA by capacity building activities (trainings, workshops, country visits) in Eastern Europe, the Caucasus and Central Asia. Furthermore, CEIP provides online ad hoc support to technical experts from the region;

(h) Build on the emission related work within EMEP; Cooperate with the other EMEP centers and task forces; AMAP, the Austrian Ministry of Environment, EEA, Joint Research Centre of the European Commission and the European Commission; Participate

in relevant meetings organized by the partner organizations and EMEP bodies; contribute to joint reports with other centres;

(i) Carry out other tasks assigned to it by the EMEP Steering Body and the Executive Body.

D. Revised mandate for the Meteorological Synthesizing Centre-East

1. Introduction

27. The Meteorological Synthesizing Centre-East has been in operation since 1979 - the beginning of EMEP. The Centre has been carrying out its functions as one of three cooperating international centres of EMEP as indicated in Article 1 of the EMEP Protocol to the Convention. It is responsible for modelling of heavy metals and persistent organic pollutants. The centre contributes to scientific assessment of past trends and status ~~on~~ air pollution throughout the ECE region and to evaluation of the implementation of the Protocols of the Convention.

28. Within the period of its existence the Centre has supported the Parties to the Convention and EMEP, *inter alia*, through the following actions:

(a) Continuously maintained and fostered the development of modelling tools that are essential for the verification of the impact of the actions taken on pollutants emission reduction in the ECE region, in particular for heavy metals and persistent organic pollutants (POPs);

(b) Extended the EMEP model to the global scale to support assessment of the impact of heavy metals and POPs in the Northern hemisphere;

(c) Contributed to the evaluation and improvement of emission data reported by the Parties and supporting the Centre on Emission Inventories and projection in gap filling for heavy metals and POPs emissions not correctly documented;

(d) Participated to the elaboration of assessment report and trend analyses of air pollution concentrations and deposition in the EMEP domain over the past 40 years;

(e) Conducted several pilot studies with national experts to investigate the reasons of discrepancies between emissions, measurements and modelling results in some countries;

(f) Supported sharing, use and evaluation of EMEP models as tools for the assessment of air pollution transport and deposition at national and regional levels by the Parties.

29. The mandates for the EMEP centres ~~need to be~~ are being revised and updated to ensure that they are consistent with the provisions of the amended protocols to the Convention, ~~as well as its and to take into account the finding and~~ -strategic priorities ~~as~~ set out in the following documents:

(a) Revised Long-term Strategy for the Convention on Long-range Transboundary Air Pollution (~~ECE/EB.AIR/2018/1~~);

(b) The 2016 scientific assessment of the Convention; and

(c) Policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3, ECE/EB.AIR/WG.5/2017/3/Corr.1 and ECE/EB.AIR/2017/4).

30. The Centre is responsible for communicating with national experts, for maintaining an up-to-date webpage that includes information on Centre's work, and for other organizational arrangements in accordance with the biennial workplan.

31. The Centre is responsible for carrying out the work assigned to it in the biennial workplans approved by the Executive Body, and reporting thereon, as well as for keeping other relevant bodies apprised of its work.

2. Revised mandate for the Meteorological Synthesizing Centre-East (MSC-E)

32. The Meteorological Synthesizing Centre-East has been carrying out its functions as one of three cooperating international centres of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) as indicated in Article 1 of the EMEP Protocol to the Convention. It is responsible for providing scientific support to the Convention with information on modelling of heavy metals (lead (Pb), cadmium (Cd), and mercury (Hg)) and persistent organic pollutants (POPs, including polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dibenzo-p-dioxins and dibenzofurans (PCDD/Fs), and hexachlorobenzene (HCB)).

33. The Centre reports on its activities and deliverables to the Steering Body to EMEP.

34. The annual costs of the EMEP Centres are financed in accordance with the 1984 Protocol on long-term financing of EMEP, from contributions by the Parties to the Convention on the basis of the budget approved by the Executive Body for the Convention upon the recommendation of the Steering Body to EMEP.

35. The functions of the Centre are to:

(a) Prepare data on anthropogenic emissions of heavy metals and POPs on regional (EMEP domain) and global scales including auxiliary parameters (e.g. emission height, temporal variation, chemical composition etc.) as input for operational modelling based on gridded emission dataset provided by Centre for Emission Inventories and Projections (CEIP) and expert estimates;

(b) Prepare input data required for modelling of heavy metals and POPs on regional and global scales, including wind suspension of mineral dust as well as atmospheric concentrations of chemical reactants and particulate matter;

(c) Collect and process measurement data for evaluation of model performance from various monitoring networks and databases (e.g. EBAS, AirBase, GMOS, UNEP SC GMP Data Warehouse, etc.);

(d) Update the modelling tools with new findings and improved parameterizations developed by the Centre in its research activities in accordance with the bi-annual work-plan and cooperation with scientific community;

(e) Perform simulations of heavy metals and POPs dispersion on a global scale for evaluation of intercontinental transport of Hg and POPs and its impact on pollution levels in the EMEP countries;

(f) Perform further testing and evaluation of model performance in simulations of air concentration and deposition levels as well as source-receptor relationships of heavy metals and POPs on the new EMEP grid;

(g) Perform operational model assessment of heavy metal (Pb, Cd, and Hg) and POP (PAHs, PCBs, PCDD/Fs, and HCB) pollution levels over the EMEP domain;

(h) Perform quality assurance and quality control of modelling results through evaluation against measurements from the EMEP and other monitoring networks;

(i) Provide support of Parties to the Convention with use of the model assessment results and access to the modeling tools. In particular, present and discuss results of the national scale case studies and other research activities on heavy metal and POP pollution with fine resolution;

(j) Prepare annual Status Reports and individual country reports for the EMEP countries and make results of model calculations available online at the MSC-E website; develop and maintain a website in Russian to facilitate access to information by countries in Eastern Europe, the Caucasus and CentralAsia;

(k) Continue collaboration with ICP-Vegetation on [the](#) evaluation of heavy metal pollution levels in Europe using modeling results and measurements in mosses and develop cooperation with other International Cooperative Programmes; provide support of the Coordination Centre for Effects (CCE) with information on ecosystem-specific deposition heavy metals and POPs for assessment of critical load exceedances; contribute to the Task Force on Health with information on toxic substances (PAHs, PCDD/Fs and others);

(l) Cooperate on dissemination of information and data exchange with international bodies including UNEP, AMAP, Stockholm Convention, Minamata Convention, HELCOM, etc.;

(m) Report on its activities and deliverables to the Steering Body to EMEP and Working Group on Effects and participate in annual meetings of the relevant Task Forces (Task Force on Measurements and Modelling, Task Force on the Hemispheric Transport of Air Pollution);

(n) Carry out other tasks assigned to it by the EMEP Steering Body and the Executive Body.

E. Revised mandate for the Meteorological Synthesizing Centre-West

1. Introduction

36. The Meteorological Synthesizing Centre-West has been in operation since 1979 - the beginning of EMEP. The Centre has been carrying out its functions as one of three cooperating international centres of EMEP as indicated in Article 1 of the EMEP Protocol to the Convention. It is responsible for modelling transboundary fluxes of acidifying and eutrophying air pollution, photochemical oxidants and particulate matter. The centre contributes to scientific assessment of past trends and status in air pollution throughout the ECE region and to evaluation of the implementation of the Protocols of the Convention.

37. Within the period of its existence the Centre has supported the Parties to the Convention and EMEP, *inter alia*, through the following actions:

(a) Continuously maintained and fostered the development of modelling tools that are essential for the verification of the impact of the actions taken on pollutants emission reduction and the assessment of transboundary air pollution fluxes in the ECE region;

(b) Provided the Center on Integrated Assessment Modelling with source/receptor matrices computed annually to feed the GAINS model;

(c) Extended the EMEP model to the global scale to support assessment of source/receptor relationships between regions in the Northern hemisphere;

(d) Contributed to the evaluation of emission data reported by the Parties implementing gridded emission inventories in the EMEP model and evaluating its performances against observations;

(e) Participated to the elaboration of assessment report and trend analyses of air pollution concentrations and deposition in the EMEP domain over the past 40 years;

(f) Investigated methodologies to build up linkages between regional and local air pollution patterns;

(g) Supported sharing, use and evaluation of EMEP models as tools for the assessment of air pollution transport and deposition at national and regional levels by the Parties.

38. The mandates for the EMEP centres ~~need to be~~ are being revised and updated to ensure that they are consistent with the provisions of the amended protocols to the Convention, ~~as well as its~~ and to take into account the findings and –strategic priorities ~~as~~ set out in the following documents:

- (a) Revised Long-term Strategy for the Convention on Long-range Transboundary Air Pollution (~~ECE/EB.AIR/2018/1~~);
- (b) The 2016 scientific assessment of the Convention; and
- (c) Policy response to the 2016 scientific assessment of the Convention (ECE/EB.AIR/WG.5/2017/3, ECE/EB.AIR/WG.5/2017/3/Corr.1 and ECE/EB.AIR/2017/4).

39. The Centre is responsible for communicating with national experts, for maintaining an up-to-date webpage that includes information on Centre's work, and for other organizational arrangements in accordance with the biennial workplan.

40. The Centre is responsible for carrying out the work assigned to it in the biennial workplans approved by the Executive Body, and reporting thereon, as well as for keeping other relevant bodies apprised of its work.

2. Revised mandate for the Meteorological Synthesizing Centre-West (MSC-W)

41. The Meteorological Synthesizing Centre-West hosted by Norwegian Meteorological Institute is responsible for providing scientific support to the Convention on atmospheric modelling of photochemical compounds, sulphur, nitrogen and particulate matter.

42. The Centre reports on its activities and deliverables to the Steering Body to EMEP.

43. The annual costs of the EMEP Centres are financed in accordance with the 1984 Protocol on long-term financing of EMEP, from contributions by the Parties to the Convention on the basis of the budget approved by the Executive Body for the Convention upon the recommendation of the Steering Body to EMEP

44. The functions of the Centre are to:

(a) Perform model simulations to trace progress towards the existing emission control protocol and support the design of new or revised Protocols, when necessary;

(b) Provide annual assessment of transboundary air pollution fluxes inside the EMEP area; source-receptor matrices, air concentrations and deposition fields for the EMEP domain for photochemical compounds, sulphur, nitrogen and particulate matter for the most recent year where emissions are available. Update historic model runs when necessary to keep consistency with previous years;

(c) Maintain the EMEP/MS-CW model as 'state-of-the-art'. Evaluate results of the EMEP/MS-CW model using EMEP data, as well as measurement data from other networks and projects. Improve methodologies and understanding of processes, parametrizations, emissions and linkages to climate and vegetation impacts;

(d) Facilitate the use of the EMEP MS-CW model by Parties, e.g. by maintaining an updated open source code on the web and providing training courses for EMEP/MS-CW model users. Provide annual country reports with model products and web access to model results, including data on high temporal resolution and source-receptor matrices, for use in air quality assessment by Parties;

(e) Provide support and facilitate involvement of Parties in Eastern Europe, the

Caucasus and Central Asia, e.g. by providing country reports in Russian, target country participation to EMEP/MSC-W model training courses, provide support on the use of EMEP data and tools;

(f) Collaborate with EMEP centres and task forces and the Working Group on Effects on (i) interpretation, evaluation and assessment of measured and modelled air pollution, including intercontinental transport; (ii) evaluation and improvement of emission inventories; (iii) use of EMEP/MSC-W model results in integrated assessment; and (iv) risk of air pollution damage to vegetation and health;

(g) Continue cooperation with HELCOM and OSPAR Commission on nitrogen deposition to sea areas, with a specific focus on shipping emissions. Explore options for cooperation between EMEP and the European Union programmes such as Copernicus Atmosphere Monitoring Services, focusing on regional assessments. Support AMAP on modelling of SLCP impacts. Collaborate with the Aerosols Comparisons between Observations and Models (AeroCom) and the Aerosol Chemistry Model Intercomparison Project within CMIP (AerChemMIP 6) on the climate impacts of SLCP's;

(h) Carry out other tasks assigned to it by the EMEP Steering Body and the Executive Body.
