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## Economic Commission for Europe

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**

**Fourth joint session**

Geneva, 10-14 September 2018

Item 14 (b) of the provisional agenda

**Progress in emissions inventories and other emissions-  
related issues: improvement of emission data**

### **Emission inventories and projections**

#### **Report by the Co-Chairs of the Task Force on Emission Inventories and Projections**

##### *Summary*

The Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) is mandated to provide sound scientific support to the Convention on Long-range Transboundary Air Pollution, inter alia, in emission inventories and projections (see ECE/EB.AIR/68, annex III, appendix III). To help EMEP to fulfil that mandate, the Task Force on Emission Inventories and Projections reports annually to the EMEP Steering Body on progress in the area, providing policy-relevant messages and recommendations.

The present report contains a summary of the discussions at and outcomes of the Task Force's thirty-first meeting (Sofia, 25–27 April 2018), where participants considered progress in Task Force activities under the 2018–2019 workplan for the implementation of the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/140/Add.1) and activities set out in the informal document submitted to the Executive Body for the Convention at its thirty-seventh session entitled “Draft revised mandates for scientific task forces and centres under the Convention”. They also discussed the planning of future

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activities.

Annexed to the meeting report is a summary of the conclusions of the workshop on the verification of emissions inventories, held in Sofia on 25 April 2018.

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## I. Introduction

1. The Task Force on Emission Inventories and Projections under the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) assists EMEP in providing sound scientific support for the Convention on Long-range Transboundary Air Pollution in the area of emissions inventories and projections. The work of the Task Force is organized and led by the co-Chairs, Mr. Chris Dore (United Kingdom of Great Britain and Northern Ireland), Mr. Martin Adams (European Environment Agency (EEA) and Ms. Kristina Saarinen (Finland). In addition, expert panel leaders coordinate work relating to emissions in four specific technical areas: (a) combustion and industry; (b) transport and mobile machinery; (c) agriculture and nature; and (d) emission projections. The goal of this work is to support the Convention's Parties in reporting air pollutant emissions and projections data and to capture relevant information for maintenance and improvement of the *EMEP/EEA air pollutant emission inventory guidebook* (EMEP/EEA Guidebook 2016).<sup>1</sup>
2. The annual meeting constitutes the Task Force's main annual output.

## II. 2018 annual meeting of the Task Force

### A. Organization and planning

3. The thirty-first meeting of the EMEP Task Force on Emission Inventories and Projections, a subsidiary body of the United Nations Economic Commission for Europe (ECE) Convention on Long-range Transboundary Air Pollution, was held in Sofia on 25, 26 and 27 May 2018.<sup>2</sup> It was preceded on 25 April 2018 by a scientific workshop on the verification of emissions inventories (see annex).
4. The meeting was hosted by the Executive Environment Agency in the Ministry of Environment and Water of Bulgaria with organizational support from Ms. Tanya Vladimirova, Bulgaria's National Focal Point for the European Environment Information and Observation Network (EIONET).
5. The Co-Chairs jointly chaired the meeting and the expert panel leaders chaired the technical sessions in the four defined technical work areas (see para. 1).

### B. Attendance

6. The meeting was attended by 123 participants representing 48 countries and international organizations, including the EMEP Centre on Emission Inventories and Projections (CEIP) and the European Commission's Joint Research Centre. EEA was represented by staff members from its headquarters and its European Topic Centre for Air Pollution and Climate Change Mitigation. Several industry representatives also attended.

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<sup>1</sup> The most recent edition is the *EMEP/EEA air pollutant emission inventory guidebook 2016*, available at <http://www.eea.europa.eu/publications/emep-eea-guidebook-2016>.

<sup>2</sup> Presentations and documents from the Task Force meeting and the workshop are available at <http://www.tfeip-secretariat.org/meetings/>.

### **C. Opening address**

7. Dr. Valeri Serafimov, Acting Executive Director of the Executive Environment Agency in Bulgaria's Ministry of Environment and Water, made an opening address and the Co-Chairs welcomed the participants.

### **D. Review of related work under the Convention**

8. Dr. Chris Dore (Task Force co-Chair) presented the latest information on activities under the Convention and on the longer-term strategic planning that is under way; this includes strengthening the Task Force's connections with the modelling community, continuing to support countries in Eastern Europe, the Caucasus and Central Asia in ratification of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol), and developing methodologies to better address uncertainty. The lack of EMEP funding for the EMEP/EEA Guidebook was flagged as an anomaly of the Convention; however, EMEP is conducting a wide-ranging review of activities and priorities and there may be opportunities for change.

9. A representative of CEIP provided an overview of results from the latest emission reporting cycle, including the submission of gridded data at  $0.1^\circ \times 0.1^\circ$  resolution, and said that some Parties were still not making complete data submissions.

10. The Task Force Co-Chairs presented the current programme of work and the timetable for updating the EMEP/EEA Guidebook, which will finalize the updated chapters in time for endorsement at the annual meeting of the Task Force in 2019.

### **E. Annex I reporting template**

11. CEIP introduced a draft of the updated Annex I reporting template for discussion. The following points were raised:

(a) Excel remains the preferred platform for the time being, mainly for reasons relating to resources, transparency and the ability of different countries to report using other systems. There was interest in emissions reporting tools and open source could be a viable option for future reporting.

(b) There was support for a template that could be used by member States of the European Union in reporting their totals simultaneously under both the Convention and the National Emission Ceilings Directive.

(c) It was agreed that the inclusion of road transport emissions on a fuel-used basis in the Nomenclature for Reporting (NFR) system, while important, should be separate from the main Annex I table that is reserved for mandatory reporting.

(d) The introduction of voluntary reporting of emissions by fuel type was not supported.

(e) The question of whether the columns should represent years or pollutants was discussed, but there was no strong support for change. Both proposals have their respective benefits, ranging from trend analysis to the identification of missing pollutants.

12. The Task Force agreed to form an ad hoc group to revise the current draft of the Annex I template and report on progress by 1 August 2018 (in advance of the EMEP Steering Body's session). An invitation to participate will be sent to Parties. The Task Force also requested that the EMEP Steering Body provide funding for a project that will develop and deliver software or a tool for emissions reporting.

## F. Review of emissions inventories

13. On behalf of the European Commission, Mr. Martin Adams (EEA) presented information on developments under the European Union National Emission Ceilings Directive NECD<sup>3</sup> and, in particular, the proposed revised approach to adjustment applications whereby adjustments would not be reported or reviewed for historical years if the Member State had been compliant in the most recent year. The Task Force largely supported the proposal on the grounds of resource savings; however, some Parties stated that they would still like to submit recalculated adjustments for historical years for presentational purposes. The Task Force agreed that the topic should be raised for discussion at a meeting of the EMEP Steering Body.

## G. Emissions from selected sources

14. The following technical presentations were given during the parallel expert panel sessions:

(a) *Combustion and Industry*: New approaches to calculating emissions from quarries were presented by a representative of France, and a representative of the Netherlands described the results of a study on the calculation of new emission factors for the handling of dry agricultural products. The issue of whether to include the condensable component of small-scale combustion was discussed. While the advantage of inclusion for users was acknowledged, there were several issues to be addressed, including the difficulty of estimating emission factors that include the condensable component for historical years and the question of whether to include only filterable country-specific emission factors.

(b) *Transport*: The United Kingdom's updated shipping methodology and a Nordic programme involving the development of emissions inventories for heavy metals and persistent organic pollutants were presented. The new chapter of the EMEP/EEA Guidebook on the aviation sector was approved, despite the pending information on a few aircraft types. It was agreed that emission factors from the Nordic programme and for motorcycles, electrified vehicles and non-exhaust particulate matter should be incorporated into the EMEP/EEA Guidebook update. The allocation of emissions from the combustion of engine lube oil was discussed and it was proposed that the emissions from four-stroke engines should be allocated to chapter 2.G (Other product use: Use of Lubricants) rather than grouping it with road transport issues. This would ensure consistency with the approach taken for greenhouse gas inventories.

(c) *Agriculture*: An analysis of measurement data for fertilizers and manures found unexplainable differences between studies, suggesting a need to standardize measurement methods. Revisions are planned for chapters 3.B (Manure Management), 3.D (Agricultural Soils) and 5.B.2 (Biogas Production) of the EMEP/EEA Guidebook, taking the Intergovernmental Panel on Climate Change refinements into consideration. A calculation tool will also be developed. There has been progress in developing a methodology for estimating emissions from chapter 5.B.2 (Biogas production) and in linking nitrogen flows to chapters 3.B (Manure management) and 3.D (Emissions from soil). A workshop on direct ammonia emissions from crops should be held so that consensus can be reached and a methodology for the Guidebook proposed. The Task Force

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<sup>3</sup> 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, 2016 O.J. (L 344), pp. 1–31.

agreed to recommend the adoption of the revised methodology for emissions of hexachlorobenzene (3.D.f).

## H. Projections Expert Panel

15. This year's projection expert panel was held in the plenary rather than in parallel to the other expert panel sessions, enabling more participants to attend. The presentations included, among others:

- (a) Development of the National Air Pollution Control Programme (NAPCP) reporting tool (EEA briefing);
- (b) Compilation of emission projections in Wallonia and in Belgium as a whole;
- (c) Compilation of emission projections in Croatia in preparation for the initial NAPCP submission.

## I. European Environment Information and Observation Network

16. After an overview of EEA activities, representatives from the Agency and its European Topic Centre for Air Pollution and Climate Change Mitigation presented recent project work on shipping emissions relevant to EIONET, including:

- (a) An overview of the United Kingdom's revised shipping methodology;
- (b) A presentation by the Finnish Meteorological Institute on "Shipping emissions – from emissions to policy".

## J. Future work

17. The Task Force discussed and agreed the remaining work schedule for 2018 and the workplan for 2018–2019. A number of actions were agreed with priority given to the following:

- (a) Standing items:**
  - (i) Holding an annual Task Force meeting and workshop to support development of the EMEP/EEA Guidebook and share best practice
  - (ii) Acting as a focal point for technical discussions on emission estimates relating to the Convention and managing associated communication channels (including dissemination and maintaining website services)
  - (iii) Promoting and supporting efforts to provide updated information for the EMEP/EEA Guidebook by sourcing data from the literature and coordinating with other projects, Task Forces and Centres under the Convention, as resources allowed
- (b) Other core workplan items:**
  - (i) In the long term, the Task Force would aim to secure an annual budget or funding to support the development of the EMEP/EEA Guidebook.
  - (ii) It would also continue to recommend that improvements be made to the format of the EMEP workplan and budget allocations with a view to greater transparency and improved access to information.

(c) **The Task Force would continue to compile and distribute a prioritized list of improvement activities for the EMEP/EEA Guidebook, bearing in mind that these do not have secured funding.**

## **K. Other business**

18. The Task Force thanked Parties and, in particular, the European Union (through EEA) for supporting its work. It also expressed its sincere appreciation to its host, the Executive Environment Agency in the Ministry of Environment and Water of Bulgaria, with organizational support from Ms. Tanya Vladimirova, Bulgaria's National Focal Point for EIONET.

## Annex

### Workshop on Emissions Verification

1. The Task Force arranged a half-day workshop on the verification of emissions, which opened with a presentation from the co-Chairs on the importance of verification studies, and the observation that the number of studies undertaken to verify emissions inventories has substantially decreased across the last decade.
  2. The Meteorological Synthesizing Centre-West showed the benefits to modelling of using the emissions mapped with the higher resolution EMEP grid, and the contribution that Copernicus Atmosphere Monitoring Service is making to the gridding of shipping emissions. The co-Chairs strongly encouraged Parties to report gridded emissions on time using the higher resolution EMEP grid.
  3. The Meteorological Synthesizing Centre-East (MSC-E) showed a prioritised list of improvements that Parties can make to their reporting, the highest priority is reporting gridded emissions of heavy metals and persistent organic pollutants. They also flagged the need for information on the chemical composition of emissions of mercury, dioxins and furans and polychlorinated biphenyls, as well as better emissions data on benzo[a]pyrene. The co-Chairs encouraged Parties to provide any relevant data to MSC-E.
  4. Mr. Mark Gibbs (Aether) provided an in-depth assessment of point source verification and how this can be used in national emissions inventories. Mr. Jeroen Kuenen (TNO) showed the value of comparing national emissions estimates with emissions from European-wide research projects. Ms. Laurence Rouil (INERIS) provided a review of what satellite measurements are currently able to offer in terms of supporting emissions inventory verification.
  5. The presentations were followed by a discussion session before the workshop was closed.
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