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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

Second joint session\*

Geneva, 13–16 September 2016

Item 4 of the provisional agenda

**Progress in emissions inventories and other  
emissions-related issues**

### 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 the area of 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 (ECE/EB.AIR/122/Add.2, item 1.4.7).

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



The present report contains a summary of the discussions at and outcomes of the Task Force's twenty-ninth meeting (Zagreb, 17–18 May 2016), where participants considered progress in Task Force activities carried out in the accordance with the 2016–2017 workplan for the implementation of the Convention (ECE/EB.AIR/133/Add.1, items 1.1.1.21, 1.1.2.1, 1.1.2.3, 1.1.2.6, 1.1.2.7 and 3.4) and the informal document submitted to the Executive Body for the Convention at its thirty-fourth session, “Basic and multi-year activities in the 2016–2017 period” (items 1.4.5, 1.4.6, 1.4.7 and 1.5.1).

Annexed to the meeting report is a summary of the conclusions of the workshop on the condensable and semi-volatile components of particulate matter emissions, which was jointly organized with the Task Force on Measurements and Modelling on 16 May 2016 in Zagreb.

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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 to the Convention on Long-range Transboundary Air Pollution in the area of emission 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, namely: (a) combustion and industry; (b) transport and mobile machinery; (c) agriculture and nature; and (d) emission projections. The focus of this work is to support the Convention's Parties in reporting air pollutant emissions and projections data, including capturing relevant information for maintenance and improvement of the *EMEP/EEA air pollutant emission inventory guidebook* (EMEP/EEA Guidebook).<sup>1</sup>

2. The annual meeting constitutes the Task Force's main annual output. However, in 2016, the Task Force also undertook the review of updated chapters of the EMEP/EEA Guidebook, and would continue that work in the remainder of 2016, as described in sections E and H below.

## II. 2016 annual meeting of the Task Force

### A. Organization and planning

3. The twenty-ninth meeting of the EMEP Task Force on Emission Inventories and Projections was held in Zagreb on 17 and 18 May 2016.<sup>2</sup> The meeting of the Task Force, a subsidiary body of the United Nations Economic Commission for Europe (ECE) Convention on Long-range Transboundary Air Pollution, was held jointly with a meeting of the EEA European Environment Information and Observation Network (Eionet). It was preceded by a scientific workshop on 16 May, held jointly with the Task Force on Measurements and Modelling, where emissions of the condensable and semi-volatile components of particulate matter (PM) emissions were presented and discussed (see annex).

4. The co-Chairs jointly chaired the meeting and expert panel leaders chaired the technical sessions in the four defined technical work areas (see para. 1).

### B. Attendance

5. Over 110 participants attended the annual Task Force meeting, representing 37 countries and international organizations, including the Centre for Integrated Assessment Modelling, the EMEP Centre on Emission Inventories and Projections, the Task Force on Measurements and Modelling and the Task Force on Reactive Nitrogen. EEA was represented by several members of its staff as well as by staff from its European Topic

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<sup>1</sup> The most recent edition is the *EMEP/EEA air pollutant emission inventory guidebook 2013*, EEA Technical report No. 12/2013 (Luxembourg, Publication Office of the European Union, 2013). Available from <http://www.eea.europa.eu/publications/emep-eea-guidebook-2013>.

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

Centre for Air Pollution and Climate Change Mitigation. Several representatives from industry also attended.

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

6. The Chair of the EMEP Steering Body provided information on recent developments under the Convention, and the Task Force co-Chairs presented the Task Force's contributions to recent sessions of the EMEP Steering Body and the Executive Body for the Convention. Information was also presented on the European Commission's recent activities relating to the National Emission Ceilings Directive.<sup>3</sup>

### **D. Emissions reporting and scientific reviews**

7. A representative from the Centre on Emission Inventories and Projections presented a summary of the emissions reporting in 2016. While there had been improvements in quality in recent years, some significant quality problems remained evident in the reported emissions data. That had been a persistent issue that had already been raised with the Steering Body, and initiatives were being undertaken by both the Task Force and the Steering Body to try to improve the quality of reporting. For example, a Task Force co-Chair had held face-to-face meetings with selected national representatives, and Parties were being invited to explain barriers to improvements at the 2016 joint session of the EMEP Steering Body and the Working Group on Effects.

8. The EMEP Steering Body had tasked the Task Force with reviewing and updating the guidance for emissions inventory technical review within the Convention. The co-Chairs had updated the methods and procedures for the technical review of air pollutant emission inventories reported under the Convention and its Protocols (ECE/EB.AIR/GE.1/2007/16) together with the Centre on Emission Inventories and Projections, and had circulated the revised draft as a meeting paper. At the meeting, the Task Force agreed a final version of the document for forwarding to the EMEP Steering Body.

### **E. The EMEP/EEA air pollutant emission inventory guidebook**

9. A European Commission-funded project had been undertaken to update a number of EMEP/EEA Guidebook chapters. Work had also been funded by EEA and Germany to update other Guidebook chapters. The Task Force had reviewed those Guidebook chapters ahead of the meeting. An overview of those activities was presented.

10. Detailed discussions about the updated Guidebook chapters were held in expert panel meetings to establish the current status and determine whether any further work was required. The Task Force agreed that updated chapters were either adequate, required some minor additions, or required further work. Where further work was required, ad hoc groups were formed. Work was planned to ensure that the Task Force would be able to grant technical approval of all updated Guidebook chapters ahead of the second joint session of the EMEP Steering Body and the Working Group on Effects in September 2016, where the EMEP Steering Body would consider the text for endorsement.

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<sup>3</sup> Directive 2001/81/EC of the European Parliament and of the Council of 23 October 2001 on national emission ceilings for certain atmospheric pollutants.

## **F. Emissions from selected sources**

11. A number of technical presentations were given, including on:

(a) *Shipping*: An expert from Finland presented detailed methodologies for estimating emissions from international shipping. The use of detailed movement data and information on engines at the vessel level allowed for significant improvements in the accuracy of emission estimates;

(b) *Aviation*: A representative of Eurocontrol presented the spreadsheet tools that were now available for estimating emissions from aviation. Data was available on a large number of different aircraft types, allowing accurate emission estimates to be made;

(c) *Road transport*: A representative of the European Topic Centre for Air Pollution and Climate Change Mitigation presented the COmputer Programme to calculate Emissions from Road Transport (COPERT) version 5, which would shortly be available, highlighting the improvements to the model;

(d) *Ammonia from agriculture*: An expert from Germany presented results from an international project assessing ammonia emissions from mineral fertilizers;

(e) *Nitrogen modelling*: An expert from the Netherlands presented a modelling system that linked emissions, local air quality and nitrogen deposition.

## **G. European Environment Information and Observation Network**

12. Representatives from EEA and its European Topic Centre for Air Pollution and Climate Change Mitigation presented recent project work and activities relevant to Eionet in general, including:

(a) The latest news on EEA- and Eionet-related activities;

(b) Emissions from residential combustion and the resulting impacts on air quality;

(c) A proposal to amend the method of gap-filling used in the European Union emissions inventory submitted to the Convention.

## **H. Future work**

13. The Task Force discussed and agreed the remaining work scheduled for 2016, and the Workplan for 2017–2018. A number of actions were agreed, with priority items being:

(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 work that provides updated information for use in the EMEP/EEA Guidebook by sourcing data from the literature and liaising with other projects, Task Forces and Centres within the Convention, as resources allow;

- (b) Other core workplan items:
  - (i) Activities to finalize updated chapters of the EMEP/EEA Guidebook for 2016, and supporting EEA with the publication of the updated version of the Guidebook;
  - (ii) Developing a new Tier 1 methodology for estimating emissions from small-scale or domestic combustion that is technology-specific (see annex);
  - (iii) Supporting the Centre on Emission Inventories and Projections in designing and issuing a questionnaire for Parties to gather information on methodologies for estimating PM emissions, thereby providing information on the extent to which the condensable and semi-volatile components of PM are currently included in national reporting (see annex);
  - (iv) Drafting a guidance document for the emissions inventory community on the condensables and semi-volatile components of PM emissions and the planned development work in that technical area (see annex);
  - (v) Supporting the EMEP Steering Body in deciding how to assign the emissions inventory development budget. Also, updating the Emissions Inventory Maintenance and Improvement Programme in order to attract potential sources of funding;
- (c) Aspirational work items: for example, provision of support to Parties, particularly in improving the completeness and transparency of reporting national emissions estimates under the Convention. Aspirational items are currently unfunded and will be undertaken to the extent that existing funding allows.

## **I. Other business**

14. A summary of the conclusions and outcomes of the workshop on the emissions of condensables and semi-volatile components of PM, held jointly with the Task Force on Measurements and Modelling, was presented (see annex).
15. The Task Force on Emission Inventories and Projections discussed and agreed upon an updated mandate (terms of reference) document, as requested by the Bureau of the EMEP Steering Body.
16. The Task Force thanked Parties for supporting its work, and in particular the European Union (via EEA), Finland and the United Kingdom. The Task Force also expressed its sincere appreciation to their hosts, the Croatian Agency for Environment and Nature, and thanked EEA for providing financial support to allow Eionet representatives to participate in the meeting.

## Annex

### **Conclusions of the joint workshop on the condensable components of particulate matter emissions**

1. The Task Force on Emission Inventories and Projections and the Task Force on Measurements and Modelling held a joint workshop on the condensable and semi-volatile components of PM emissions on 16 May 2016 in Zagreb. The aim was to bring together the two communities to discuss the paper on condensables drafted by the Task Force on Measurements and Modelling, and agree ways of improving the current lack of transparency and inconsistent reporting of the condensables component of PM in Parties' national PM emissions estimates submitted under the Convention. Presentations highlighted the latest information from both the modelling and emissions inventory communities and provided conclusions on research needs, how improved transparency could be brought to the current emissions inventory reporting in the short-term and long-term goals associated with improving the consistency of reporting across Parties. The workshop was hosted by the Croatian Agency for Environment and Nature.

2. A French expert of the Task Force on Measurements and Modelling and other representatives from the modelling community presented the needs of the modellers, the current use of PM emission estimates in modelling, and the current scientific understanding of the condensables component of PM emissions. A number of improvements to the reporting of emission estimates and areas for research were proposed.

3. The EMEP/EEA Guidebook has recently been updated to include information on whether PM emission factors include the condensable component or not. An overview of the information included in the updated Guidebook chapters was presented by the United Kingdom.

4. The results from a Dutch project were presented that showed how PM emission estimates across a European domain, estimated with the condensable component included, differed from the current national reporting under the Convention.

5. An expert from Sweden presented the results from a Nordic Council project to measure the emissions of short-lived climate pollutants from small-scale combustion sources.

6. The co-Chairs of the Task Force on Emission Inventories and Projections presented a paper containing responses to the paper from the Task Force on Measurements and Modelling/Task Force on Emissions Inventories and Projections working group. The co-Chairs then led a discussion session during which the following short-term actions were agreed:

(a) The Task Force on Emission Inventories and Projections will support the Centre on Emission Inventories and Projections in designing and issuing a questionnaire for Parties to gather information on methodologies for estimating PM emissions, thereby providing information on the extent to which the condensable and semi-volatile components of PM are currently included in national reporting;

(b) As it was recognized that the current simple Tier 1 methodology for estimating PM emissions from the domestic combustion sector is inadequate, the Task Force on Emission Inventories and Projections will lead the drafting of a revised Tier 1 methodology that includes appliance-specific information in the methodology, and possibly region-specific defaults;

(c) The Task Force on Emission Inventories and Projections will lead the drafting of a guidance document on emissions of the condensable component of PM, explaining current issues, short-term actions and the proposed longer-term solutions.

7. The Task Force on Emission Inventories and Projections and Task Force on Measurements and Modelling also agreed some longer-term aims and goals, and research needs:

(a) The long-term aim is for Parties to standardize their reporting of PM emissions, including both the filterable and condensable components. This will not only require significant revisions to information in the EMEP/EEA Guidebook, but will be particularly challenging for Parties that use country-specific PM emission factors;

(b) Research is needed to better understand how emissions of the organic matter component of PM may be better measured and estimated.

8. The co-Chairs thanked the Croatian Agency for Environment and Nature for hosting the workshop, and then closed the meeting.

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