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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

Sixth joint session

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Item 12 (a) (ii) of the provisional agenda

**Progress in activities of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe in 2020 and future work: improvement and reporting of emission data and adjustments under the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone: improvement and reporting 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, among other things, in emission inventories and projections (see ECE/EB.AIR/68, annex III, appendix III, para. 1). To help ensure the fulfilment of 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-third meeting (online, 11–14 May 2020), where participants considered progress in Task Force activities under the 2020–2021 workplan for the implementation of the Convention (ECE/EB.AIR/144/Add.2), in particular, the priorities for future updates to the *EMEP/European Environment Agency air pollutant emission inventory guidebook* and contributions to the review of the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol), as amended in 2012 (Executive Body decision 2019/4).<sup>1</sup>

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<sup>1</sup> Available at [www.unece.org/env/lrtap/executivebody/eb\\_decision.html](http://www.unece.org/env/lrtap/executivebody/eb_decision.html).

Annexed to the meeting report is a summary of a workshop organized and hosted by the Task Force on the 11 May 2020, entitled “The Task Force on Emission Inventories and Projections for Newcomers”.

## 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); 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;
- (d) Emission projections.

2. 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/European Environment Agency air pollutant emission inventory guidebook* (the Guidebook).<sup>2</sup>

3. The outcome of the annual meeting constitutes the Task Force's main annual output.

## II. Task Force 2020 annual meeting

### A. Organization and planning

4. The thirty-third meeting of the 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 as a web conference, from 11 to 14 May 2020.<sup>3</sup> It was held jointly with a meeting of the European Environment Agency European Environment Information and Observation Network air pollution mitigation representatives. The meeting was preceded by a workshop entitled "The Task Force on Emission Inventories and Projections for Newcomers" on the morning of 11 May (see annex to present document).

5. Due to the ongoing coronavirus disease (COVID-19) pandemic, the workshop and meeting were hosted online by the Task Force's Co-Chairs and secretariat, using a web conferencing platform.

6. 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 above).

### B. Attendance

7. The meeting sessions were held sequentially, with no parallel sessions. The meeting attendance peaked at over 150 participants representing approximately 40 countries and international organizations, including the Centre on Emission Inventories and Projections and the European Environment Agency European Topic Centre on Air Pollution and Climate Change Mitigation. Several industry representatives also attended.

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<sup>2</sup> The most recent edition (2019) is available at [www.eea.europa.eu/publications/emep-eea-guidebook-2019](http://www.eea.europa.eu/publications/emep-eea-guidebook-2019).

<sup>3</sup> Presentations and documents from the Task Force meeting and the workshop are available at <http://www.tfeip-secretariat.org/meetings-2/>.

### **C. Opening address**

8. The Task Force Co-Chairs delivered an opening address and welcomed the participants.

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

9. Mr. Chris Dore (Co-Chair) presented the most recent information on activities under the Convention, informed by updates received from the Chair of the EMEP Steering Body and the Convention secretariat, noting that the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) would be reviewed, (Executive Body decision 2019/4) providing an opportunity to reflect upon potential future change and improvements to emissions reporting requirements, including adjustment procedures. It was expected that the review would assess opportunities to increase focus on black carbon, condensables and the quality of emission inventories. In due course, the Task Force would consider how it might best support that and other aims of the Convention.

10. Mr. Chris Dore (Co-Chair) presented the findings of a workshop on condensables, held as a web conference from 17 to 19 March 2020, organized by the Norwegian Meteorological Institute and supported by the Nordic Council of Ministers. The workshop had reviewed ongoing work on condensables, with a report expected in autumn 2020. Those attending the workshop had agreed that there continued to be an immediate need for greater transparency regarding what was included in national emission inventories. Several long-term aims had been discussed in the workshop, including a review of the Guidebook contents, and development to align the information to support Parties with reporting commitments to the Convention.

11. The Co-Chairs presented the current programme of work and reviewed the 2019 update of the Guidebook.

### **E. Review of emissions inventories**

12. Mr. Zlatko Kregar (European Commission) provided an update on developments within the European Union regarding emission inventories and work associated with its National Emission Ceilings Directive,<sup>4</sup> in particular presenting summary findings from the 2019 Air Emission Inventory Review<sup>5</sup>, and highlighting plans for future years. Primary emission trends were presented for the years 2005–2018: collectively, the European Union had been below the required emission ceilings for all pollutants in every year since 2010. Activities in 2020 included a review of historical emission estimates, emission projections and national air pollution control programmes reported by the European Union member States. The European Commission National Emission Ceilings implementation report was planned for the second quarter of 2020 and would consider all National Emission Ceilings Directive requirements.

13. Ms. Sabine Schindlbacher (Centre for Emission Inventories and Projections) presented an overview of emission inventories submitted in 2020. The completeness of time series reporting had improved compared to the previous year, but there remained certain challenges identified with gridded and large point source emissions. The in-depth inventory review for 2020 would be held as a web conference between 25 and 28 June, and would review submissions from the European Union, Iceland, Kazakhstan, Kyrgyzstan, Liechtenstein, Monaco, North Macedonia and Switzerland.

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<sup>4</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, *Official Journal of the European Union*, L 344 (2016), pp. 1–31

<sup>5</sup> [https://ec.europa.eu/environment/air/documents/NECReview2019horizontal-report\\_FINAL.doc](https://ec.europa.eu/environment/air/documents/NECReview2019horizontal-report_FINAL.doc).

## **F. News from other Task Forces under the Convention**

14. Mr. Tim Butler (Institute for Advanced Sustainability Studies (Potsdam, Germany)) presented the EDGAR-HTAPv3 Emissions Mosaic developed by the Task Force on Hemispheric Transport of Air Pollution. The model would aim to implement a longer time series, improved sectoral resolution and additional regional inventories. The Task Force hoped to support that work and provide additional resources. A meeting between the Task Force and the Task Force on Emission Inventories and Projections had been arranged to discuss future collaboration.

## **G. Projections Expert Panel**

15. The Projections Expert Panel (12 May) was attended by 115 participants. Presentations were given on several topics, including:

(a) Updates to the projections chapter in the 2019 version of the Guidebook, carried out by an ad hoc group of Party representatives, as well as the Expert Panel leaders;

(b) The impact of the COVID-19 lockdown on European Union member States' 2020 compliance under the National Emissions Ceilings Directive and the Convention commitments;

(c) The impact of the lockdown on 2020 energy consumption in France.

16. The Expert Panel leaders facilitated a discussion on the expected impact of the lockdown on 2020 emission inventory results and projections.

17. The Expert Panel agreed to review the annex IV projections reporting template,<sup>6</sup> by creating a separate ad hoc group. The current template lacked transparency due to the level of detail provided.

## **H. Agriculture and Nature Expert Panel**

18. The Agriculture and Nature Expert Panel (12 May) was attended by 90 participants. Technical presentations were given on several topics, including:

(a) Updates to the agriculture and nature chapter in the 2019 version of the Guidebook, and outstanding issues;

(b) Improving national emission inventories for the agricultural sector in Europe;

(c) Progress with the panel's 2019/20 workplan and the workplan for 2020/2021.

19. The Expert Panel leaders facilitated a discussion on the development of a methodology for indirect emissions of nitric oxide from agricultural soils, which would be included in the next update to the Guidebook.

20. The Expert Panel leaders discussed future work for the panel's 2020/21 workplan, including continued cooperation with the Task Force on Reactive Nitrogen, and the European Commission Joint Research Centre for improving emission inventory tools.

21. Following the Expert Panel session, Ms. Rosie Brooke and Mr. Richard German (United Kingdom of Great Britain and Northern Ireland) demonstrated the Nitrogen Flow Tool that currently accompanied the Guidebook.

## **I. Combustion and Industry Expert Panel**

22. The Combustion and Industry Expert Panel (13 May) was attended by 115 participants. Presentations were given on several topics, including:

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<sup>6</sup> Available at [www.ceip.at/ms/ceip\\_home1/ceip\\_home/reporting\\_instructions/annexes\\_to\\_guidelines/](http://www.ceip.at/ms/ceip_home1/ceip_home/reporting_instructions/annexes_to_guidelines/).

- (a) An overview of the condensables workshop (detailed in para. 10 above);
- (b) A summary of the European Union Horizon 2020 project “ClairCity”;
- (c) A case study on estimating non-methane volatile organic compound emissions from solvents and other product use in Italy.

23. The Expert Panel leaders facilitated a discussion on the state and changing needs of information on condensable PM emissions.

24. The Expert Panel leaders facilitated a discussion on how Parties could improve their emission estimates of non-methane volatile organic compounds from solvent manufacture and use. It was concluded that improvements could be made by collating country-specific information currently utilized in national inventories and sharing it across the EMEP domain. The Task Force aimed to facilitate that activity.

## **J. Transport Expert Panel**

25. The Transport Expert Panel (13 May) was attended by 115 participants. Presentations were given on several topics, including:

- (a) Gas and liquefied petroleum gas vehicle emission performance;
- (b) The Flanders programme on update of emission factors;
- (c) The upcoming Euro 7 regulation;
- (d) The update of the aviation emission factor annex in the Guidebook.

26. The Expert Panel leaders facilitated a discussion on the panel’s 2019/2020 workplan and the plan for revising the content on black carbon in the Guidebook. Several additional remaining actions that had been included in the 2020/21 workplan included: a revision of non-exhaust emission factors for particulate matter from tyre wear; a review of emission degradation functions for light duty vehicles; a review of Euro 6 emission factors; and the collection of feedback from work on shop emissions and rail and non-exhaust emissions.

## **K. New science and European Environment Information and Observation Network sessions**

27. Mr. Jeroen Kuenen (Netherlands) gave a presentation on developments in European-wide emission inventories.

28. An update was provided on the work carried out by the Task Force’s black carbon working group, a priority action in the Task Force’s 2019/20 workplan. The working group had:

- (a) Divided into small expert teams following a survey in December 2019;
- (b) Analysed original references behind the Guidebook emission factors in order to check and define the current methodologies;
- (c) Identified the possible gaps and improvements needs.

29. A discussion was facilitated by Ms. Kristina Saarinen (Co-Chair) on the next steps for the black carbon working group. Representatives of the Intergovernmental Panel on Climate Change participating in the session informed the Task Force about the Intergovernmental Panel’s work on short-lived climate forcers in the period 2020–2022. The Task Force would support the Panel’s work by providing information on identified improvement needs in the Guidebook and on the applicability of methods in developing countries.

30. An overview of European Environment Agency activities was provided during a session for European Environment Agency European Environment Information and Observation Network participants, followed by presentations on:

- (a) Upcoming releases, including “Air quality in Europe – 2020” and a web page on air quality and health entitled “Healthy environments, healthy lives”;

- (b) Cross-cutting analysis of greenhouse gas and air pollution policies and measures.

## **L. Future work**

31. The Task Force discussed available resources, concluding that it would be necessary to prioritize improvement activities. There was a call for all Parties to support the Expert Panels in improving the Guidebook.

32. The Task Force Co-Chairs presented the core tasks in the 2020/21 workplan that remained to be undertaken. Those tasks were grouped into two categories:

- (a) Expert Panels gathering information on priorities for improving the Guidebook;

- (b) Outreach and communications (meetings, newsletters, website improvements).

33. The outcomes of the condensables workshop (detailed in para. 10 above) were discussed and a number of actions were agreed on, with priority being given to the following:

- (a) National inventory reporting – expected to be discussed at the sixth joint session of the EMEP Steering Body and the Working Group on Effects;

- (b) Improvements to the content of the Guidebook – progress on that action would need to wait until metrics had been decided. Improvements would be heavily reliant on the availability of funding.

34. The Co-Chairs considered the review of the Gothenburg Protocol, and would provide feedback to the Task Force community on information relating to emission inventories.

35. The Co-Chairs concluded the meeting by discussing points that could be included in the draft 10-year strategy for the Task Force, with items falling under two broad headings:

- (a) Improving emissions inventory reporting:

- (i) Improved targeting of the emissions inventory review process, and improved review follow-up;

- (ii) Options for selective capacity-building, supporting the introduction of stronger institutional arrangements in Parties;

- (iii) Options for reporting software and other tools;

- (iv) The possibility of reporting emissions split by activity or fuel.

- (b) Improving the science:

- (i) Establishing a regular and predictable source of funding for the Guidebook;

- (ii) Improving the ability to respond to topical initiatives across Task Forces within the Convention;

- (iii) Supporting EMEP initiatives to improve clarity over the use of “non-official” data sets in EMEP studies;

- (iv) Consideration of whether it was better to estimate some sources at the EMEP, rather than at the national, level (such as shipping and non-anthropogenic sources);

- (v) The development of emission estimation methodologies that better accounted for climate change (for example, agricultural emissions).

## **M. Other business**

36. The Task Force thanked Parties, and in particular the European Union (through the European Environment Agency), for supporting its work.

## Annex

### Task Force workshop: “The Task Force on Emission Inventories and Projections for Newcomers”

1. The workshop was attended by 85 participants (online, 11 May 2020) and was presented by Co-Chairs Mr. Martin Adams (European Environment Agency) and Mr. Chris Dore (United Kingdom of Great Britain and Northern Ireland), who welcomed the participants and introduced the agenda.
2. Mr. Dore gave an overview of the Task Force including: who typically attended the annual meeting; its purpose; general activities; how work was organized; how the Task Force fitted within the Convention framework; and how outputs from the Task Force contributed to reporting under the Convention.
3. Mr. Adams introduced the 2019 version of the *EMEP/European Environment Agency air pollutant emission inventory guidebook* (the Guidebook),<sup>1</sup> which had been published and which would be used as the basis for assessment of compliance with the 2020 reduction commitments. The chapters updated in the 2019 version of the Guidebook included the:
  - (a) General guidance chapters – updated and, to the extent possible, aligned with the 2019 refinement to the 2006 Intergovernmental Panel on Climate Change Guidelines;<sup>2</sup>
  - (b) Energy chapters – Significant updates had been made to 1.A.1 Energy industries, 1.A.3.b Road transport, 1.A.3.b.v Gasoline evaporation, 1.A.4 Small combustion, and 1.B.2.c Venting and flaring;
  - (c) Industrial Processes and Product Use chapters – Updates had been made to 2.A.5.a Quarrying and mining of minerals other than coal, and 2.D.3.i and 2.G Other solvent and product use;
  - (d) Agriculture chapters – Refinements and additions had been made to 3.B Manure management, 3.D Agricultural soils, 3.D.f and 3.I Use of pesticides and limestone, and 5.B.2 Anaerobic digestion at biogas facilities. A Nitrogen Flow Tool had also been released with the Guidebook.
4. Mr. Dore gave a presentation on national emission inventory management, covering the inventory compilation cycle and considerations when organizing: funding and resources; data flows; and a team. Quality metrics were outlined with an explanation of the “Transparency-Completeness-Consistency-Comparability-Accuracy” principles. Accompanying the session were spreadsheets demonstrating examples of an inventory compilation file and quality assurance/quality control checking.

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<sup>1</sup> Available at [www.eea.europa.eu/publications/emep-eea-guidebook-2019](http://www.eea.europa.eu/publications/emep-eea-guidebook-2019).

<sup>2</sup> Available at [www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/](http://www.ipcc.ch/report/2019-refinement-to-the-2006-ipcc-guidelines-for-national-greenhouse-gas-inventories/).