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**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 (EMEP)

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THE PRESENT STATE OF EMISSION DATA*

Prepared by the EMEP Meteorological Synthesizing Centre – West
in consultation with the secretariat

INTRODUCTION

1. This report reflects progress in emission reporting under the Convention in the 2006 reporting round (2004 emission data) and summarizes the main conclusions of the technical review and assessment of the quality of air emission inventories carried out under EMEP in accordance with the methods and procedures adopted by the Steering Body at its twenty-ninth session (EB.AIR/GE.1/2005/7, annex III).

2. In accordance with the guidelines given by the Executive Body at its twenty-second session, in order to streamline documentation and make better use of the Internet to disseminate information (ECE/EB.AIR/83, para. 56(i)) and as agreed by the Bureau of the EMEP Steering

* This document was submitted on the above date because of processing delays.

Body in February 2005, officially submitted data from the 2006 reporting round have been available on the EMEP website since mid-June 2006 at <http://webdab.emep.int/>.

3. The review process currently consists of two stages: stage 1 assesses the timeliness, format and completeness of reported data, and stage 2 considers the consistency and comparability of the data and evaluates the extent and scope of recalculations. Methods and procedures for in-depth (stage 3) reviews are currently being developed by the Task Force on Emission Inventories and Projections and will be submitted to the Steering Body at its thirty-first session. The stage 3 reviews are intended to build on results from stages 1 and 2 and aim to assess several aspects of inventory quality, including accuracy. A trial stage 3 review was carried out on 11 countries in February 2006 on a voluntary basis (see ECE/EB.AIR/GE.1/2006/7, para. 12).

I. THE 2006 ROUND OF EMISSION REPORTING

4. The Executive Body, at its twenty-third session, urged all Parties to report emission data on main pollutants, persistent organic pollutants (POPs), heavy metals and particulate matter (PM) and make efforts to improve the quality of emission data. It requested Parties to report emission data for 2004 and any necessary revisions to historical data in accordance with the *Emission Reporting Guidelines* (ECE/EB.AIR/80) by 15 February 2005 (ECE/EB.AIR/83, paras. 17(j)–(l)).

5. To facilitate emission reporting, the EMEP Meteorological Synthesizing Centre – West (MSC-West) prepared electronic reporting templates covering both quantitative data and documentation items and made them available at <http://www.emep.int/emis2006/reportinginstructions.html>. As in previous years, Parties were requested to report according to the criteria for reporting in the *Guidelines* and were encouraged to check their submissions for correct formatting, internal consistency and completeness before transmitting them to the secretariat and MSC-West for stage 1 reviews. To facilitate this task, the latest update of the electronic data-checking tool, REPDAB, was available at <http://webdab.emep.int/repdab.html>. About one third of submissions received had been checked with REPDAB before being sent in, and the results suggest that this tool contributed to improving the internal consistency of reported data.

6. A total of 27 Parties reported emission data by the due date of 15 February 2006 – an increase of three Parties over 2005. This figure implied that 55% of Parties reported their submissions in time. By 15 June 2006, the total number of submissions had increased to 35 Parties (71%), an increase of two Parties compared to last year.

7. In the 2006 reporting round, all Parties submitted data according to the format specified in the *Guidelines* using the Nomenclature for Reporting (NFR) for source categories, with the exception of the United States. Reporting in the NFR format has increased dramatically for all Parties since 2002, when the NFR was introduced, and is presently close to 100%. Emission

reporting using the SNAP format, including the intermediate NFR 01 format, is still used for a substantial amount of emission data from the period 1990–2001, because about 70% of Parties have not recalculated their time series using the new recommended (NFR) formats.

8. Only 15 Parties (30%) reported complete time series of main pollutants in the NFR format for 1990–2004, the period relevant for the revision of the Gothenburg Protocol. The completeness of the sector data time series, independent of format, was largest for SO_x and NO_x (about 80%), intermediate for non-methane volatile organic compounds (NMVOC) (75%) and lowest for NH₃ (68%). The completeness of sector data time series for priority heavy metals (cadmium, lead and mercury) varied according to the pollutant and the year and was 29%–50% for lead and cadmium and 37%–61% for mercury. Completeness for priority POPs was even lower – 29%–48% for PCDD/F and PAH – while only eight countries (16%) reported HCB emissions. Reporting of PM began in 2000, and the completeness of the reporting of sector data has been steadily increasing, from 48% in 2000 to about 60% in 2004 emissions.

9. In accordance with paragraph 38 of the *Guidelines*, Parties were encouraged to submit, no later than three months after submitting their emission data report (i.e. by 15 May 2006), an Informative Inventory Report (IIR). The number of IIR reports submitted by Parties has increased significantly since 2004, from seven IIRs in 2004 to 12 in 2005 and 17 IIRs in 2006. The information in these reports includes, *inter alia*, methodologies, uncertainties and recalculations, thus adding to the transparency of the reported data and facilitating the review of emission data for stages 2 and 3.

II. PROGRESS IN THE REVIEW PROCESS

10. Stage 2 reviews are carried out in close cooperation with Parties and their designated emission experts. The 2006 review was performed by MSC-West and the European Topic Centre on Air Quality and Climate Change (ETC/ACC). The initial results of the stage 2 review, which flagged inventory discrepancies, were distributed to Parties as country-specific reports in mid-May. Responses were received from 19 Parties by mid-June. Based on these responses, a comprehensive review report was compiled for the consideration of the Steering Body (EMEP/MSC-W Note 1-2006¹).

11. The internal consistency of the emissions reported to the Convention was generally good. Sectoral emissions, in particular those derived from fuel combustion, transport, agriculture and landfills, were evaluated for different pollutants. With very few exceptions, results from cross-

¹ EMEP/MSC-West Note 1-2006 was prepared by the Meteorological Synthesizing Centre-West, a scientific centre under the Convention, and is not an official United Nations document.

pollutant tests showed that Parties had reported emissions consistently for the different pollutants within a single sector.

12. Recalculation of emissions is often associated with a lack of clear guidance regarding the recommended methodologies for the calculation of emissions and the types of emissions to be included in a specific source category. It is therefore not surprising that the number of recalculations is highest for POPs, like HCB and PAH, and for heavy metals such as cadmium and lead, for which better guidance is needed. The number of recalculations is lowest for main pollutants, and do not exceed 3% of emissions. The only exception is NMVOC, for which recalculations are high, for the reasons identified above.

13. The comparability of inventories from different Parties is presently hampered by a lack of clarity in the *Guidelines* regarding how to allocate emissions by source. Allocation to source categories differ from Party to Party. In many cases emissions are aggregated or assigned to unspecified source categories such as “other”. The revision of the *Guidelines* is intended to increase the comparability and transparency of the requirements so as to better assist Parties in their reporting and to facilitate future reviews.

14. In 2006, results from the project on the “Estimation of willingness to pay to reduce risks of exposure to heavy metals and cost-benefit analysis for reducing heavy metals occurrence in Europe” (ESPROME) have demonstrated that significant gaps and missing sources for heavy metals other than mercury introduce considerable uncertainties into the reported emission data. Officially reported emissions are substantially underestimated for both cadmium and lead. More emphasis should be placed on estimates of emissions during waste disposal, mainly incineration of wastes, as this source category is presently the least accurately estimated. Additionally, heavy metal emissions from natural sources and re-suspension of historical depositions should be further investigated since their contribution to the total emission, in particular with regard to the dust suspension process, heavy metal accumulation in soil and other compartments, dynamical redistribution between the surface and subsoil layers and availability for wind erosion, can be significant.