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## Economic Commission for Europe

Executive Body for the Convention on Long-range  
Transboundary Air Pollution

### Working Group on Strategies and Review

#### Fifty-fourth session

Geneva, 13 and 14 December 2016

Item 3 of the provisional agenda

#### Progress in the implementation of the 2016–2017 workplan

## Report of the Task Force on Techno-economic Issues

### *Summary*

At its thirty-third session (Geneva, 8–11 December 2014), the Executive Body for the Convention on Long-range Transboundary Air Pollution adopted decision 2014/2 (see ECE/EB.AIR/127/Add.1), upgrading the Expert Group on Techno-economic Issues to the Task Force on Techno-economic Issues. In accordance with the mandate set out in the annex to decision 2014/2, the Task Force is required to report on progress in its work to the Working Group on Strategies and Review.

The enclosed report by the Task Force on Techno-economic Issues contains information on the progress in the implementation of the 2016–2017 workplan for the implementation of the Convention with respect to activities relevant to the Task Force, as well as the outcomes of the second annual meeting of the Task Force (Catania, Italy, 20 May 2016).

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## I. Introduction

1. The second annual meeting of the Task Force on Techno-economic Issues was held on 20 May 2016 in Catania, Italy, back to back with the first meeting of the Clearing House Evaluation Committee, held on 19 May at the same venue. As per decision 2014/2 of the Executive Body for the Convention on Long-range Transboundary Air Pollution, the Task Force is tasked with creating and maintaining a clearing house of control technology information for primary emissions of nitrogen oxides (NO<sub>x</sub>), sulphur dioxide (SO<sub>2</sub>), volatile organic compounds (VOCs) and particulate matter (PM), including short-lived climate pollutants (SLCPs), heavy metals and persistent organic pollutants (POPs) (clearing house).
2. The present document contains information on the second annual meeting of the Task Force and on the progress made in the implementation of the 2016–2017 workplan for the Convention (ECE/EB.AIR/133/Add.1) with respect to activities relevant to the Task Force.

### A. Attendance

3. The Task Force meeting gathered together 27 experts, including representatives from 12 Parties to the Convention: Azerbaijan, Belarus, Croatia, Finland, France, Germany, Italy, Netherlands, Portugal, Russian Federation, Serbia and Sweden.
4. Representatives of the the Federal Environment Agency of Germany, the French Environment and Energy Management Agency, the French-German Institute for Environmental Research at the Karlsruhe Institute of Technology and the Inter-professional Technical Centre for Studies on Air Pollution, in their capacity as members of the technical secretariat of the Task Force, attended the meetings. A representative of the United Nations Economic Commission for Europe (ECE) secretariat also participated. A representative of the European Integrated Pollution Prevention and Control (IPPC) Bureau established under the European Union Joint Research Centre was also present. The following organizations were also represented: the Energy Research Centre of the Netherlands; the European Association of Metals (Eurometaux); the European Automobile Manufacturers' Association; and the European Solvents Industry Group. The meetings were also attended by two experts from private companies.
5. Simultaneous English-Russian interpretation was provided by France to facilitate the participation of the Russian-speaking experts. The participation of three experts from the countries of Eastern Europe, the Caucasus and Central Asia and the representative of the secretariat was financially supported by France. All presentations delivered at the meetings, as well as other relevant documents, are available on the new Task Force website.<sup>1</sup>

### B. Organization of work

6. Tiziano Pignatelli (Italy) and Jean-Guy Bartaire (France), co-Chairs of the Task Force on Techno-Economic Issues, chaired the Task Force's second annual meeting. Emmanuel Fiani (France) chaired the preceding meeting of the Clearinghouse Evaluation Committee.
7. The Director of the Department of Physics and Astronomy of the University of Catania, which hosted the meeting, welcomed the participants in an opening address. A

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<sup>1</sup> Available from: <http://tftci.citepa.org/en/2nd-tftci-meeting>.

representative of the ECE secretariat presented the main outcomes of the thirty-fifth session of the Executive Body for the Convention (Geneva, 2–4 May 2016).

8. The main objective of the meeting was to report on progress in the implementation of the workplan and to share updates on the work carried out by the technical secretariat, namely the development of the new website of the Task Force and the clearing house, as well as the activities related to the costs of mitigation of emissions of VOCs, and the related tool and techniques for the measurement and calculation of those emissions. Other issues considered included the draft guidelines for estimation and measurement of emissions of VOCs and developments regarding the implementation of best available techniques (BAT) in the countries of Eastern Europe, the Caucasus and Central Asia and the Russian Federation. A number of representatives from the European associations representing different industrial sectors provided additional information at the meeting.

## II. Progress in the implementation of the 2016–2017 workplan for the Convention

9. This section summarizes the status of progress in the implementation of activities assigned to the Task Force in the 2016–2017 workplan for the implementation of the Convention. The summaries are provided by workplan item.<sup>2</sup>

### **Item 2.2.1: Workshops to promote awareness and understanding of guidance documents under the Convention, in particular in countries of Eastern Europe, the Caucasus and Central Asia**

10. A workshop to promote the understanding and implementation of BAT across the ECE region with a focus on countries in transition (Berlin, 20–22 April 2016) was organized under the aegis of the Task Force. The workshop sought to increase awareness of the control techniques for emissions from stationary sources and mobile sources, in particular in countries of Eastern Europe, the Caucasus and Central Asia, and to strengthen the capacity of those countries to implement the latest, amended protocols to the Convention.<sup>3</sup>

### **Item 2.2.2: Further development of a techno-economic tool as an evolution of the methodologies for evaluating costs in the large combustion plants sector**

11. The technical secretariat of the Task Force presented the evolution of the methodology developed for estimating costs in the large combustion plants (LCPs) sector, by applying the Emission Reduction Investment and Cost Calculation (ERICCa\_LCP) tool for NO<sub>x</sub>, SO<sub>2</sub> and PM to LCPs larger than 50 megawatts (MW). The tool, which had been upgraded with regard to some features, fully implemented the methodology. It was now available for download from the Task Force website, along with a user manual, examples and other technical documentation. The technical secretariat expected to deliver demonstrations of the tools for its promotion in technical meetings and conferences in the near future. The Russian experts attending the meeting invited Task Force experts to demonstrate the methodology and the tool at a technical workshop to be held in the Russian Federation on a date and at a venue yet to be determined.

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<sup>2</sup> In several cases the titles abbreviate or summarize much longer workplan items. For the full text of each item, see ECE/EB.AIR/133/Add.1.

<sup>3</sup> The content and outcome of the workshop are reported in a separate document prepared for the consideration of the Working Group on Strategies and Review (ECE/EB.AIR/WG.5/2016/3).

**Item 2.2.3: Promote the methodology and related tool for analysis of GAINS scenarios in countries of Eastern Europe, the Caucasus and Central Asia**

12. The methodology for the analysis of the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) scenarios was presented at past meetings of the Task Force. The Italian co-Chair envisaged the opportunity to fully explain the features of the GAINS methodology, along with examples of its applications and demonstration of the related tool, during the joint meeting of the Task Force with the coordinating group on the promotion of actions towards implementation of the Convention in Eastern Europe, the Caucasus and Central Asia (Coordinating Group) in Saint Petersburg in October 2016. The discussion with and feedback from experts from Eastern Europe, the Caucasus and Central Asia would be essential for the consolidation, improvement and dissemination of the methodology and the related tool.

**Item 2.2.4: Collect and provide up-to-date data for cost modelling for BAT**

13. The Task Force collects data on costs for the implementation of BAT on a regular basis. At times, ad hoc technical meetings are organized with the experts of the International Institute for Applied Systems Analysis (IIASA) to provide new data on abatement technologies and related costs of implementation that could be implemented in the GAINS modelling process.

**Item 2.2.7: Continue to develop and promote the regional clearing house of control technology**

14. The Chair of the Clearing House Evaluation Committee presented the progress made in developing the clearing house. The ultimate objective was to provide a common platform for the dissemination of information on BAT, including latest developments on emission reduction techniques, operating experience and feedback from plant operators. He described the organization of the clearing house and introduced the features of the platform. The clearing house would be accessible through a web page to experts and others who were interested.<sup>4</sup> The widest participation of experts from industrial sectors concerned with the implementation of emission abatement measures was envisaged in the Clearing House Evaluation Committee, with the aim of populating the clearing house with relevant documentation on abatement techniques. Experts were invited to submit new documents on abatement techniques for their review by the Evaluation Committee.

**Item 2.2.8: Promote the Guidance document for estimation and measurement of VOCs emissions from activities covered by annex VI to the Gothenburg Protocol**

15. The technical secretariat presented its work on the review of the guidelines for estimation and measurement of emissions of VOCs. It reported on the comments and questions received from Belarus, which had been discussed in the margins of the thirty-fifth session of the Executive Body, and their analysis, which was in progress by the ad hoc drafting group established by the Task Force, per the request of the Working Group on Strategies and Review at its fifty-third session (Geneva, 15–17 December 2015; ECE/EB.AIR/WG.5/114, para. 9). Once the work was completed, the clarity of the guidelines was expected to be improved, where needed and appropriate. The questions posed by Belarus would be answered in the most comprehensive way possible before the summer break. The revised guidelines would be available for the consideration and adoption by the Working Group on Strategies and Review at its fifty-fourth session

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<sup>4</sup> See <http://ftei.citepa.org/en/clearing-house-home>.

(ECE/EB.AIR/WG.5/2016/4). Their eventual adoption by the Executive Body was expected at its thirty-sixth session (Geneva, 15–16 December 2016).

**Item 2.2.9: Continue the work on the analysis of costs of VOCs emission reduction techniques in large industrial users of solvents**

16. The technical secretariat of the Task Force presented the work on the cost estimation of abatement technologies for VOCs. The work focused initially on two sectors: car manufacturing (painting); and packaging printing. The methodology developed was illustrated for both sectors. An ad hoc version of the ERICCa-VOC tool had been developed to implement the methodology and carry out the cost calculation. The ERICCa-VOC tool provided the total annual costs of emission abatement, total emissions abated and specific abatement costs (per kilogram VOCs abated).

### III. Other relevant discussion points at the meeting

17. In addition to the discussion on the workplan items, a number of other issues were discussed. The following paragraphs capture the main issues presented and discussed at the meeting.

18. Representatives of the Russian Federation, representing the Russian BAT Bureau and the All-Russian Research Institute for Environmental Protection (VNII Ekologiya, Moscow), illustrated the medium- to long-term strategy for the implementation of BAT in the Russian industrial system. The step-wise approach aimed at achieving compliance with the BAT requirements within the time horizon until 2040 of about 15,000 enterprises from a number of key industrial sectors, such as fuel and energy, cement, ceramics, glass, chemical and petrochemical industry, metallurgy, pulp and paper, as well as food production and livestock farming. BAT was being implemented through the development and publication of industry-specific BAT reference documents (BREFs). At the same time, a legal framework for the transition to BAT-based State permitting and regulation was progressively being developed and introduced. The Russian BAT Bureau acted as an interface between the ministerial authorities and the technical bodies developing the BREFs.

19. The representative of the Russian Federation, Chair of the Coordinating Group, presented the results of the pilot mercury release inventory in the Russian Federation. In the context of the Minamata Convention on Mercury, which the Government had signed in September 2014, the project sought to protect human health and the environment from adverse toxic influences of mercury. It had the ultimate objective of strengthening national capacity for the identification of mercury sources and their quantification, the monitoring of mercury releases and the development of priority actions to address relevant mercury issues. The main figures of the inventory in some key industrial sectors and from consumer products were provided.

20. The representative of Belarus spoke about POPs emissions in Belarus, highlighting relevant sources, regulation and provisions for the implementation of BAT — in particular the relevant emissions and the distribution of sources in the inventory for the main POPs covered by annexes II and III of the Protocol on POPs. Those included polychlorinated biphenyl (PCB), hexachlorobenzene (HCB), polychlorinated dibenzodioxins (PCDD), polychlorinated dibenzofurans (PCDF), and polycyclic aromatic hydrocarbon (PAH). A national POPs management system had been elaborated and its implementation was in progress. Nevertheless, improvements were necessary in order to assess progress in the implementation of the Protocol on POPs, in particular with regard to reporting and estimating POPs releases from stocks, which was difficult owing to the lack of a

methodological procedure. There was also a need for an update of the Guidance Document on Best Available Techniques to Control Emissions of POPs from Major Stationary Sources (ECE/EB.AIR/2009/14).

21. The Eurometaux representative outlined the association's activities on scientific and regulatory issues related to metals in the environment. There was a scientific basis underlying the technical work of Eurometaux, promoting science-based risk and hazard assessments. She described the structure of the draft European Union BAT conclusions for the non-ferrous metals industries,<sup>5</sup> and presented the activities to improve the related BREF, carried out together with the Industrial Emissions Alliance. Those activities comprised a proposal for a methodology to derive BAT-associated emission levels. She also illustrated, through a case study, the attempt to link the European Union regulations concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH)<sup>6</sup> and Classification, Labelling and Packaging<sup>7</sup> with the Industrial Emissions Directive<sup>8</sup> by using the information from REACH to ensure the safe use of chemicals. Furthermore, she noted that diffuse sources had recently been the subject of discussion in the Organization for Economic Cooperation and Development with regard to their inclusion in pollutant release and transfer registers.

22. The representative of the European Automobile Manufacturers' Association detailed the use of solvents and the implementation of BAT in motor vehicle paint shops. He described the process of coating in car manufacturing, highlighting that less than 0.5 per cent of the total non-methane VOC emissions in the European Union were caused by vehicle coating and that such emissions had shown a continuously decreasing trend in the past 10 years. Regarding emission abatement in the coating process, the substitution of water-based for solvent-based paints was considered to be a fundamental change. He evaluated the different VOCs reduction measures in terms of their advantages and trade-offs, but concluded that, while VOCs emissions had been halved in the past 10 years, achievable emission reductions were different for existing and new installations, so further reductions of VOCs emissions were likely to be slow and very costly.

23. The representative of the European Solvents Industry Group said the Group's activities were coordinated with a number of other European associations dealing with solvents in several industry sectors. In particular, the Group was involved in the preparation of position papers, the preparation of VOCs inventories for solvents, working with individual EU member States to improve the quality of their national inventories, and the preparation of proposals for European Union directives, such as the EU Directive on

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<sup>5</sup> Following the meeting, Commission implementing decision (EU) 2016/1032 of 13 June 2016 establishing BAT best available techniques (BAT) conclusions, under Directive 2010/75/EU of the European Parliament and of the Council, for the non-ferrous metals industries, were issued.

<sup>6</sup> Regulation (EC) No 1907/2006 of the European Parliament and of the Council of 18 December 2006 concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH), establishing a European Chemicals Agency, amending Directive 1999/45/EC and repealing Council Regulation (EEC) No 793/93 and Commission Regulation (EC) No 1488/94 as well as Council Directive 76/769/EEC and Commission Directives 91/155/EEC, 93/67/EEC, 93/105/EC and 2000/21/EC.

<sup>7</sup> Regulation (EC) No. 1272/2008 of the European Parliament and of the Council of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No. 1907/2006.

<sup>8</sup> Directive 2010/75/EU of the European Parliament and of the Council of 24 November 2010 on industrial emissions (integrated pollution prevention and control).

Decorative Paints.<sup>9</sup> The Group intended to cooperate actively with the Task Force and other technical bodies established under the Convention, like the Task Force on Emission Inventories and Projections and the Centre for Integrated Assessment Modelling. In particular, further cooperation with the Task Force would be developed with regard to costs of implementing emission controls. It was planned to provide a link from the Group's website to the Task Force website. The Task Force co-Chairs and technical secretariat had been invited to participate in the meeting of the European Solvents VOCs Coordination Group to present and present the relevant activities of the Task Force.<sup>10</sup>

24. The technical secretariat presented progress on the revision of the European Union BREF document on surface treatment using organic solvents, along with the timetable for the document's revision. In the BREF, the main sectors and sub-sectors were listed along with the new activities, like polyurethane (PU) and polyvinyl chloride (PVC) textile or fabric coating and impregnation using N,N-dimethylformamide (DMF), other coating processes for the production of self-adhesive labels, lamination film, paper foil and synthetic film. The review process would make use of plant-specific questionnaires, with a view to gathering the necessary data and information, including on: emissions to air; VOCs as part of total emissions, in waste gases and as fugitive emissions; dust, where relevant; substances of very high concern (SVHC); NO<sub>x</sub> and carbon monoxide from thermal waste gas treatment; VOCs emissions to water SVHC and metals; water and energy consumption. The review process was ultimately aimed at updating the currently available information on abatement techniques.

25. The Portuguese co-Chair of the Task Force on Reactive Nitrogen delivered a presentation on good practices to strengthen the implementation of air pollution-related policies, strategies and measures. She reminded the members of the Task Force on Techno-Economic Issues of the ultimate objective of the Task Force on Reactive Nitrogen, as stated in Executive Body decision 2007/1, namely "the long-term goal of developing technical and scientific information, and options which can be used for strategy development across the ECE to encourage coordination of air pollution policies on nitrogen in the context of the nitrogen cycle." The main topics addressed by the Task Force were the mitigation of agricultural nitrogen, the development of regional nitrogen budgets, the assessment of the relationships between nitrogen and food choices, awareness and knowledge building in countries of Eastern Europe, the Caucasus and Central Asia, and catalytic activity on nitrogen for use by other bodies outside the Convention. She also reported on the status and future perspectives of the ECE Framework Code for Good Agricultural Practice for Reducing Ammonia Emissions (ECE/EB.AIR/129), which would be updated annually to take into account new technology and new information. The Task Force on Reactive Nitrogen hoped to increase cooperation with the Task-Force on Techno-Economic Issues in areas of common interest.

26. A member of the technical secretariat reported on the ongoing discussion within the cross-cutting working group on semi-volatile organic compounds (SVOCs) emissions established under the Task Force on Measurement and Modelling and the Task Force on Emission Inventories and Projections concerning the definition of PM. The condensable fraction of VOCs, which was only partially included in the emission inventories, was the main issue of concern. She warned about the potential consequences of a redefinition of the fractions comprised in PM, considering the comparison with the emission limit values

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<sup>9</sup> Directive 2004/42/EC of the European Parliament and of the Council of 21 April 2004 on the limitation of emissions of volatile organic compounds due to the use of organic solvents in decorative paints and varnishes and vehicle refinishing products and amending Directive 1999/13/EC.

<sup>10</sup> A second presentation on "Solvent VOCs emissions in the European Union 2008–2013 and future work" (not delivered at the meeting) was made available on the Task Force website.

established in the annexes to the Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol). The issue was referred to the attention of the Working Group on Strategies and Review, if deemed relevant to discuss further in that forum.

27. From the discussion held at the second annual meeting and the review of the activities carried out by the Task Force, the following key points can be highlighted:

(a) Countries in Eastern Europe, the Caucasus and Central Asia need further technical support in the framework of the Convention to facilitate their accession to or ratification of the most recent protocols;

(b) Belarus requested the review and update the Guidance Document on Best Available techniques to Control Emissions of POPs from Major Stationary Sources (ECE/EB.AIR/2009/14);

(c) Countries in Eastern Europe, the Caucasus and Central Asia have shown interest in the support offered by the Task Force concerning the implementation of BAT, especially for the implementation of an integrated permitting system in their countries;

(d) Countries in Eastern Europe, the Caucasus and Central Asia and the Russian Federation have shown interest in the clearing house as a platform to share relevant information on technologies;

(e) Industry representatives have demonstrated interest in the development of tools for calculating the costs of implementing control measures or technologies. Related tools supporting cost calculations might facilitate the further implementation of the BAT in the ECE region.

#### **IV. Further implementation of the 2016–2017 workplan**

28. The French co-Chair of the Task Force introduced the key elements for discussion on future priorities for the Task Force activities in the 2016-2017 workplan. There was a need for further work on the following items:

(a) The development of the clearing house;

(b) Training and demonstration projects on BAT and integrated permitting, with due regard to the needs of the countries in Eastern Europe, the Caucasus and Central Asia;

(c) The development of a cost methodology for VOCs and related tools;

(d) Collaboration with the European IPCC Bureau located in Seville, Spain;

(e) Exploring collaboration with other international organizations (outreach activities);

(f) Exploring the potential impact of changes in PM definition on the efficiency of abatement techniques (with the purpose of advising the Working Group on Strategies and Review on potential consequences);

(g) Bringing to the attention of the Working Group on Strategies and Review the request of Belarus for the revision of the Guidance Document on Best Available Techniques to Control Emissions of POPs from Major Stationary Sources;

(h) Maintaining contacts and further collaborating with the Task Force on Reactive Nitrogen and other technical bodies of the Convention.



29. The views of the Task Force members on the above items would be solicited in advance of fifty-fourth session of the Working Group on Strategies and Review and the thirty-sixth session of the Executive Body in December 2016.

## **V. Annual meetings of the Task Force**

30. The next annual meeting of the Task Force will take place at a venue and a time to be decided after consultations with the members.

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