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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)

Thirty-sixth session
Geneva, 17–19 September 2012
Item 7 (a) of the provisional agenda
Progress in activities in 2012 and future work: measurements and modelling (acidification, eutrophication, photo-oxidants, heavy metals, particulate matter and persistent organic pollutants)

Measurements and Modelling

Summary

By its decision 1999/2, the Executive Body for the Convention on Long-range Transboundary Air Pollution requested the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) to provide it with sound scientific support, inter alia, in the area of atmospheric monitoring and modelling (ECE/EB.AIR/68, annex III, appendix III). In that connection, the EMEP Steering Body is tasked with providing the Executive Body and other subsidiary bodies annually with an overall analysis of transboundary air pollution (ibid., para. 4 (a)).

In line with that mandate, the present report presents the results of the thirteenth meeting of the Task Force on Measurements and Modelling, held from 17 to 19 April 2012 in Gozo, Malta, and in accordance with item 2.2 of the 2012–2013 workplan for the Convention (ECE/EB.AIR/109/Add.2).

Contents

I. Introduction

1. The present report presents the results of the thirteenth meeting of the Task Force on Measurements and Modelling, held on 17 to 19 April 2012 in Gozo, Malta. It describes progress in the heavy metals pilot study and in the implementation of the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) monitoring strategy (including preparation of field campaigns), as well as ongoing work on modelling aspects.

2. Sixty experts from the following Parties to the Convention on Long-range Transboundary Air Pollution attended the meeting of the Task Force: Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Italy, Malta, Netherlands, Norway, Portugal, Romania, Russian Federation, Serbia, Slovakia, Spain, Sweden, Switzerland, Ukraine and United Kingdom of Great Britain and Northern Ireland. Also present were representatives from the Chemical Coordinating Centre (CCC), the Meteorological Synthesizing Centre-East (MSC-E), the Meteorological Synthesizing Centre-West (MSC-W), the International Institute for Applied Systems Analysis (IIASA), the European Commission Joint Research Centre (JRC), the World Meteorological Organization (WMO) and the oil companies' European association for environment, health and safety in refining and distribution (CONCAWE).

3. Ms. L. Rouïl (France) and Ms. O. Tarasova (WMO) chaired the meeting, which was hosted by the University of Malta.

4. Ms. Sonja Vidic, Chair of the EMEP Steering Body, presented the Long-term Strategy for the Convention (see ECE/EB.AIR/106/Add.1, decision 2010/18) and the Action Plan for its Implementation (ECE/EB.AIR/109/Add.1, decision 2011/14). Priorities of the Strategy should inform the Task Force activities and were related to the following issues: prioritizing work and increasing the efficiency of operations of the Convention; improving ratification and compliance; defining future directions for the Convention's protocols; establishing links with climate change; and developing outreach activities and communication. Important topics related to the future of the Convention that were strategic included: improvement of reporting of persistent organic pollutants (POPs) emissions according to decision 2011/13 of the Executive Body for the Convention; improvement of cooperation between the EMEP Steering Body and the Working Group on Effects; the new mandate of the Task Force on Hemispheric Transport of Air Pollution and possible cooperation with other task forces; and synergies with European Union (EU) policies and other United Nations conventions.

5. Finally, as an introduction, Ms. Rouïl gave a short presentation outlining the agreed workplan for 2012 for the Convention with regard to the ongoing revision of the Convention's protocols.

II. Implementation of the EMEP monitoring strategy

A. General issues and simultaneous implementation of the EMEP strategy and the European Union Air Quality Directive monitoring requirements

6. As an introduction, a representative of CCC gave a presentation on the status of its activities with the implementation of the EMEP monitoring strategy. Although it could have economic advantages, it appeared to be challenging to implement operational issues

and level 2 activities through the EU infrastructures, which were more research and development oriented. There had been a good progress regarding the number of Parties submitting data (34) with good development of level 2 sites. He reported on how the European Commission set up the consultation process for the revision of the EU Air Quality Directive.[1] The Convention was one of the stakeholders of the revision process, as was the AQUILA network.[2] The European Commission was currently working on the elaboration of an assessment report of results from EU research projects in support of the air quality legislation, which was expected to be released by the end of 2012. A list of questions the European Commission wanted to address in that report and which could be of interest for the Convention was presented. Finally, the CCC representative expressed some conclusions on possible links between the EMEP programme and the reviewed Air Quality Directive monitoring strategy:

(a) The collaboration between the EMEP programme and the EU seemed to work and there was no longer an issue of consistency between the two processes;

(b) Climate change was currently driving the political agenda;

(c) Current studies were to support political decisions and actions rather than to understand atmospheric processes (more application-driven research);

(d) There was a chaotic situation, with numerous programmes on air quality providing diverse information to policymakers; hence, the research had to be more coordinated internally.

7. A representative of JRC presented the status of the work delivered by the AQUILA network within the revision process of the Air Quality Directive. AQUILA was a network of 37 air quality reference laboratories in charge of quality assurance and quality control of observations within the implementation of the Air Quality Directive. A document had been prepared by the AQUILA group (currently in review) for the revision of the Directive, with 17 strategic items and recommendations, 7 of which were relevant for EMEP:

(a) *Inter-laboratory comparison*: AQUILA insisted on participation in inter-comparison studies with national reference laboratories;

(b) *Ions in particulate matter (PM)*: in the absence of European Standard (EN)[3] measurement standards, member States were requested to use the methods described in the EMEP reports, European Committee for Standardization (CEN) technical reports[4] and/or other international standards;

(c) *Volatile organic compounds (VOCs)*: the main conclusion was that observations were heterogeneous. They had to be developed in urban and suburban areas according to the Air Quality Directive; that was outside the scope of EMEP objectives. However, there was a need for common guidance in terms of data capture and target measurement uncertainty and for the development of EN standards. Cooperation with international and national programmes should be improved;

(d) *Heavy metals*: Mercury speciation measurements were needed at rural background sites (as requested at EMEP level 3 stations), but should not be mandatory in the Air Quality Directive. Total gaseous mercury, however, should be measured at industrial and urban sites (not compliant with EMEP). No measurement standard existed

[1] Directive 2008/50/EC of the European Parliament and of the Council of 21 May 2008 on ambient air quality and cleaner air for Europe.

[2] See http://www.eea.europa.eu/themes/air/links/networks/aquila-network.

[3] http://www.cen.eu/cen/Products/EN/Pages/default.aspx.

[4] http://www.cen.eu/cen/Products/TR/Pages/default.aspx.

yet and it was proposed that a CEN method could be developed soon (should be detailed for the revision);

(e) *Elemental/organic carbon (EC/OC)*: AQUILA proposed to set recommendations for "measurements of particulate matter — PM composition". In the annexes to the Air Quality Directive, measurements at urban locations were required (for the Average Exposure Indicator), but those were not proposed to be included directly in the Directive, hence the EMEP sites could be used for the Directive. There was a need for a CEN total carbon standard method. The European Supersites for Atmospheric Aerosol Research (EUSAAR)[5] method could just be mentioned as a possible approach (but not a standard). Black carbon (BC) measurement was problematic and method-dependent (AQUILA), so there was a need to standardize BC measurements before they could be proposed for regulatory monitoring;

(f) *Deposition of heavy metals and polycyclic aromatic hydrocarbons (PAHs)*: harmonization was needed. Guidance should be developed and more coordination with the EMEP Programme should be established;

(g) *Atmospheric concentrations of PAHS*: PAHs in gas phase would not be included in the directive update.

8. On behalf of the project coordinator, a representative of JRC presented the Aerosols, Clouds, and Trace gases Research InfraStructure Network (ACTRIS)[6] research infrastructure to be developed up to 2015. The aim was to integrate different observational platforms and harmonize observational methods. It should enhance collaboration within climate and Air Quality Directive communities, and maintain the state of the art in technological development (and fill in some gaps). It had the mandate to support existing operational networks like Global Atmosphere Watch[7] and EMEP, and to develop new integration tools for the calibration/validation of spatial sensors and regional models. Eighteen stations of the ACTRIS project were EMEP stations.

9. Representatives of the Czech Republic and the United Kingdom reported on their contribution to the ACTRIS project and the link they had established with the EMEP monitoring strategy.

B. EMEP Intensive Observation Periods

10. A representative of the CCC presented the status of the Intensive Observation Periods (IOPs) activities within the implementation of the EMEP monitoring strategy. Based on the earlier intensive periods, one reference paper had been submitted (campaigns of 2006 and 2007). Data of the 2008 and 2009 campaigns were nearly collected; EC/OC) ^{14}C (carbon-14 isotope) and tracer data would be available from MSC-W. The next intensive measurements period was planned for 8 June–12 July 2012 and January/February 2013. Twenty-seven sites had expressed their interest in participation for a wide and relevant panel of measured parameters, including PM speciation, VOCs, EC/OC and others. Tracer analysis would be done in collaboration with the ACTRIS project. Links with research projects (CHARMEX[8] throughout the Mediterranean area, PEGASOS[9] over the Po Valley) would be established.

[5] http://www.eusaar.net/index.cfm.
[6] http://www.eusaar.net/actris.cfm.
[7] http://www.wmo.int/pages/prog/arep/gaw/gaw_home_en.html.
[8] http://gsite.univ-provence.fr/gsite/document.php?pagendx=9566&project=lcp-ira.
[9] http://pegasos.iceht.forth.gr/.

11. An expert from Switzerland gave a presentation about the potential interest of Aerosol Mass Spectrometer (AMS) and Aerosol Chemical Speciation Monitor (ACMS) measurements. Both would be employed and tested during intensive measurement periods. The ACSM instrument was interesting because it could work longer unattended, with weekly calibrations (but rather expensive, 150 k$–160 k$). An ACTRIS ACSM campaign would take place in June 2012–May 2013.

12. During the discussion with the Task Force, experts raised several concerns about the use and the specification of the parameters measured during the intensive observation periods. Some Parties requested that the data be released to national experts as soon as possible. Therefore, the objectives of the intensive measurement periods had to be specified well before the campaign, and there was a clear need to establish a list of components recommended for measurements (e.g., list of VOCs/precursors of aerosols) before contribution from observation sites was reviewed. Links with the modelling community should be made stronger in the specification phase. It could express a wish list of components to be measured (e.g., an interest had been expressed to measure semi-VOCs). It was noted that the coverage of Europe with observation in the upcoming campaign was much better than in previous ones. Mineral dust would be partly addressed in the intensive campaign, which had been missing earlier.

C. Measurement methodologies and data assessment

13. A representative of the JRC presented the inter-comparison exercise organized jointly by ACTRIS and EMEP. Seventeen laboratories participated (twelve of them followed the EUSAAR-2 protocol) to check total carbon concentration measurements and EC/OC measurements. Total carbon observations were instrument independent and all observations fell within data quality objectives. EC/OC observations were method-dependent results of observation using different protocols and had to be compared separately. Assessment of repeatability and reproducibility indicators that could significantly vary with the site location (e.g., discrepancy in Ispra, Italy) was necessary.

14. As a follow-up to some discussions from the previous Task Force meeting, a representative from JRC presented some insights about BC monitoring, when used for model evaluation. Actually, the term “black carbon” was used by modellers to express results of simulations, but emission inventories utilized in those simulations were based on EC (Vignati, ACP, 2010)[10]. Emission inventories were based on “optical methods”. Currently, models overestimated EC up to 80%,, but model absorption was output generally at 550 nm, while measurements used other wavelengths.

15. The WMO representative reported on the conclusions of the Scientific Advisory Group (SAG) on Black Carbon. It said that BC was a useful qualitative description that was, however, unsuitable for quantitative determination. Therefore it was recommended to use more precise terminology, with the directly measured variables of different instruments being “light absorption coefficient” and “elemental carbon mass concentration”. EC concentration could be a regulatory parameter, measured by thermo-optical methods; it was more closely linked to emission inventories. However, no reference method existed and meta-data about methods should be well documented. Sun/sky radiometer absorption measurements to define BC should be considered as derived products. No standard reference method existed yet (uncertainties too high) for a light absorption coefficient, but the photo-acoustic and/or extinction-minus-scattering techniques were likely candidates. “Equivalent black carbon” (EBC) should be used instead of BC as a term for measurements

[10] http://www.atmos-chem-phys.net/10/2595/2010/acp-10-2595-2010.html

derived from optical methods. Great care had to be taken in deriving EBC from light absorption measurements. "Equivalent refractory carbon" (ERC) should be used instead of BC as a term for measurement derived from incandescence methods.

16. The Task Force agreed it would provide the EMEP Steering Body with a short note setting out its recommendations about the BC monitoring issues. They would be based on the WMO-SAG analysis that had been approved by the Task Force experts.

17. A representative of the United Kingdom presented an assessment of ozone trends in Europe. He ranked 78 observation sites along the 8-h rolling mean and calculated a linear slope for 20 years (1990–2009). Among his conclusions were that the most negative trends had been observed at the stations with the highest ozone levels at the beginning of the data set. The sites with lowest ozone concentrations had the highest exposure to hemispheric transport, hence an increase in hemispheric background ozone counteracted to the reaction on VOC/nitrogen oxide (NO_x) emissions decrease and no trend could be highlighted. The United Nations Economic Commission for Europe (ECE) Protocol to Abate Acidification, Eutrophication and Ground-level Ozone (Gothenburg Protocol) and other EU air quality legislation had led to a reduction in episodic peak ozone levels of between 15 ppb–40 ppb over the 1990–2009 period. However, that effect was offset by hemispheric transport of ozone. Decadal averaged 2000–2009 highest eight-hour mean ozone levels at all EMEP monitoring stations exceeded the World Health Organization eight-hour ozone Air Quality Guideline, despite all the actions taken to reduce VOC and NO_x emissions under the Gothenburg Protocol and other legislation.

18. An expert from Switzerland presented trends in coarse PM (PM_{10}) and fine PM ($PM_{2.5}$) in Switzerland. He used the data of five rural, one suburban and one urban station over 10 years. Fifty to sixty-five per cent of variability could be explained by variations in meteorological conditions and the sensitivity to the site location. Therefore, it was recommended to implement collocated meteorological observations at PM monitoring sites. In recent decades, a negative concentration trend had been observed in PM_{10} and $PM_{2.5}$ (average of -0.4 $\mu g/m^3$ per year). In the 1990s, the trend was stronger than in the 2000s. On weekdays, about 70% of coarse mode aerosol came from traffic. That figure fell to 53% during weekends.

19. An expert from Germany presented the progress on the implementation of the Online Monitor for AeRosols and GAses in ambient air instrument (MARGA) at the Melpitz site in Germany. The instrument allowed for a wide spectrum of measurements (in gas and aerosol phase). An intensive comparison of the instrument with the standard methods and other instruments (AMS) was performed. Comparisons with the ISORROPIA[11] thermodynamic model were presented as well.

20. A representative of Spain gave a presentation on an observational network in Spain of 71 stations (32 sites with EC/OC observations) to study PM. EBC was measured at six sites. Measurements showed that secondary organic aerosol was an important contributor to OC at the rural sites. The economic crisis had led to an EC concentration decrease at urban sites in Spain.

21. A representative of Sweden presented results of ammonia and particulate ammonia observations at eight stations in Sweden. Analysis showed that particulate ammonia had decreased (by about 30% to 50%), while ammonia had increased in parallel at most of sites (especially in the 1990s). Changes in atmospheric content did not correspond to emission changes (about -20%). Deposition and long-range transport were determining parameters in ammonia/ammonium chemistry.

[11] http://www.atmos-chem-phys-discuss.net/7/1893/2007/acpd-7-1893-2007.pdf.

22. Three brief reports on EMEP-related activities were presented by the representatives from Ukraine, the Russian Federation and Bulgaria.

III. The heavy metal case study

23. A representative of MSC-E presented the rationale and the progress in the heavy metal test-case studies launched in 2010 for an in-depth investigation of the inconsistencies between heavy metal emissions, measurement and modelling in several European countries. Currently, three countries (Croatia, the Czech Republic and the Netherlands) were participating in the study. Countries were requested to provide a number of input parameters, as well as heavy metal and supporting observations. Each of them presented their contribution to the case study.

24. For Croatia emissions were provided at 10 x 10 km resolution. Better meteorological fields had helped to resolve precipitation small-scale patterns (more precipitation and hence more deposition), which was critical for complex terrain. The influence of the transboundary transport was highlighted during the study.

25. For the Netherlands, emissions were provided on a 5 x 5 km grid. Simulations on the standard 50 x 50 km grid overestimated aim lead more than two times. The study showed that the use of 5 x 5 km grid gave very close agreement with observations. “Urban re-suspension” gave a too high contribution and remained a problem in the model.

26. For the Czech Republic, calculations had been performed for cadmium. Necessary input information had been provided to MSC-E. Eight stations had been used for verification. Some regional features had been detected and described. Steel production remained the cause of the highest pollution.

27. It was recommended to continue and extend the case studies (not limited only to heavy metals). Case studies were acknowledged to be very relevant due to number of reasons:

(a) Parties to the Convention were very deeply involved in that work;

(b) Results of the study could be used for PM analysis at the national level;

(c) Better resolution of model outcome could help countries to take more localized measures on emission regulations;

(d) Different countries had various national focuses (impact of meteorology, geophysical conditions like soils or land use, etc.), hence sensitivity of the EMEP models against the parameters of national interest could be assessed via case study;

(e) Better collaboration was developed within countries as the participants of case studies had to “dig for” information in the country.

28. The Task Force noted that MSC-E would present the results of the pilot studies for those three countries at the thirty-sixth session of the EMEP Steering Body, in September 2012.

IV. Modelling issues

A. EMEP grid transformation

29. As requested during the previous Task Force meeting, a representative of MSC-W presented a proposal of both MSC-W and MSC-E on the EMEP grid transformation.

Several characteristics of the EMEP modelling framework had been addressed: projection (e.g., polar stereographic, latitude-longitude), resolution (e.g.. 50 km x 50 km, 0.2º x 0.2º), domain; and change of emissions inventory resolution according to the model resolution.

30. During the discussion, it was agreed that the proposed resolution could be different for different purposes: for source-receptor calculations, 0.2º–0.4º; for status runs, 0.5º; for regional/local applications, 0.1º. An important issue from discussions related to emission inventories and resolution. Participants discussed if the model resolution should be aligned with other emission inventories from research projects (available at 1/8 or 1/16 degree). But it was agreed that only officially reported emissions should be used in simulations, and countries were encouraged to do their best to provide the best possible emissions

31. The final conclusion was an agreement for the implementation of a better resolution in the EMEP modelling systems for all runs and to switch to a latitude-longitude projection with corresponding update of the current domain. A wider use of the AirBase[12] observation database from the European Environment Agency (EEA) should be promoted for model evaluation.

B. Status of the EMEP modelling system and national contributions

32. A representative of MSC-E presented progress in the development of the Global EMEP Multi-media Modelling System (GLEMOS)[13] modelling chain. That model was multi-scale, with a nesting and works in latitude-longitude projection. Multi-media simulations of POPs and mercury (Hg) fate in the environment were provided at various spatial scales. The oceanic driver was being developed to evaluate oceanic transport of POPs and Hg. Refinement of the soil data to a high resolution database helped to reproduce PM_{10} (due to improved representation of re-suspension of heavy metals contained in dusts). Investigations on inverse modelling (with the development of an adjoint operator) for the improvement of heavy metals emissions were presented as well. GLEMOS model code would be prepared for open dissemination, which the Task Force members welcomed.

33. Representatives of MSC-W presented their latest modelling results, especially those related to PM concentrations' prediction. An update of organic and inorganic chemistry schemes were presented. Modelling results obtained with further improvement of emission data (temporal profiles for the energy sector, emission heights, temperature dependence of emission for residential heating emissions) were commented. The updated model was thoroughly tested to assess the effect of different mechanisms on models performance. Considerable effects were found related to changes in the calculation of cloud water pH (more efficient sulphate (SO_4) production especially in winter), gas/aerosol partitioning modelling, secondary organic aerosols (SOA) implementation (with volatility basic set and four groups in the scheme). In the new model version bias had substantially improved (7%–10%). Ongoing improvements concerned horizontal resolution improvement (7 km x 7 km), and vertical resolution improvement (current surface layer of 90 m would be divided into three sub-layers).

34. Several presentations from national experts on progress in modelling work were given as well:

(a) An expert from the United Kingdom commented results from the high resolution EMEP model version applied throughout the United Kingdom (EMEP4UK

[12] http://www.eea.europa.eu/data-and-maps/data/airbase-the-european-air-quality-database-6.
[13] http://www.msceast.org/index.php?option=com_content&view=article&id=25&Itemid=37.

project),[14] which simulated air pollutant concentrations and deposition over the past decade. Measurements from the Acid Gas and Aerosol Network (AGANet)[15] (30 sites) were used for the evaluation;

(b) An Italian expert presented a comparison of two thermodynamic modules for the computation of inorganic species implemented in the Transport Chemical Aerosol Model (TCAM);[16]

(c) An expert from the Netherlands presented source apportionment studies realized with the MOTOS-EUROS model, and their interest for decision-making;

(d) An expert from France presented recent developments of the CHIMERE model[17] for improving PM mass modelling. Results for Europe modelled with increased spatial resolution (7 km–8 km) were proposed as well.

C. Issues with emission inventories

35. The Task Force Chair reported on the conclusions of a workshop organized by EEA in October 2011 and dedicated to the review of emission inventories development with the availability of new services from the Global Monitoring for Environment and Security (GMES) EU programme. The main recommendations of the workshop could impact the EMEP programme, especially on the following aspects:

(a) The need for increased spatial resolution of emission inventories, even for regulatory purposes;

(b) The need for consistency between available emissions data sets (including national and local inventories);

(c) Emissions temporal resolution should also improve (to satisfy directives and to monitor correctly situations when limit values were exceeded);

(d) Speciation of chemical species should be considered in inventories.

36. Based on the previous presentations about modelling aspects and the discussions that had followed, there was an urgent request from the experts in the Parties in charge of modelling and air quality assessment to get consistent European emission inventories. Indeed the concern was that several initiatives developed for the dissemination of emission data were used for policy purposes and that consistency with officially reported data could be lost. Initiatives for improving the resolution (for modelling purposes) and the quality of the EMEP emission inventory were expected. Finally, the need to seek support from national experts in updating national emissions reporting was discussed.

D. Task Force modelling projects and outreach activities

37. The French expert in charge of its coordination presented the Eurodelata-3 modelling project[18]. Nine modelling teams in Europe had expressed their wish to participate in that comparison (only six models participated in the previous exercise). The aims of the exercise were: (a) the evaluation of model parameterizations, assessing their performances

[14] http://www.ceh.ac.uk/sci_programmes/EMEP4UK.html.
[15] http://uk-air.defra.gov.uk/networks/network-info?view=aganet.
[16] http://www.tau.ac.il/~pinhas/accepted/2011/Carnevale_et_al_STE_2011.pdf.
[17] http://www.lmd.polytechnique.fr/chimere/.
[18] http://www.psi.ch/lac/eurodelta3.

against data from the EMEP field campaigns; (b) to perform retrospective analysis (policy issue) to assess the capacity of current models to reproduce monitored changes in air quality thanks to a retro-analysis 2008–1999–1990. Common sets of input data and domain would be used. The runs for comparison with EMEP intensive measurement periods were planned to be finished by November 2012, and in December 2012 the retrospective runs would start. Currently there were still unresolved problems with emissions of 1990.

38. A representative of IIASA presented some outcomes of the European Consortium for Modelling of Air Pollution and Climate Strategies (EC4MACS) project. Methodologies to correct over urban areas coarse resolution model results available for the whole of Europe were presented. Actually, the EC4MACS methodologies proposed an "urban increment" calculated to correct $PM_{2.5}$ concentration in cities and a "street increment" evaluated to account for nitrogen dioxide (NO_2) hot spots near busy roads. The results obtained were very promising.

39. From those presentations and the modelling session, some questions about the "optimal" spatial model resolution to deal with policy objectives arose. High resolution simulations required high resolved input data (for emissions and meteorology), which was costly to obtain. High resolution runs also had a significant cost in terms of computing power. To evaluate the added value of high resolution runs, a new modelling initiative to be developed under the Task Force umbrella had been proposed.

40. It was proposed that voluntary modelling teams perform four simulations utilizing 7 km x 7 km emissions and European Centre for Medium-Range Weather Forecasts reanalysis (20 km x 20 km resolution) model runs with horizontal resolution 1.0º x 0.5º, 0.5º x 0.25º, 0.25º x 0.125º and 0.125º x 0.0625º. Four teams (among which MSC-W) expressed their interest in that exercise, which would be coordinated by a Dutch expert and the Task Force Chair. Some results would be presented at the EMEP Steering Body meeting in September 2012.

V. Other business

41. A long discussion developed on the best way to improve visibility of the EMEP programme and communication. Beyond scientific publications (which were reasonably numerous), there was a need for outreach documents in support of EMEP activities. For example, CCC should prepare an EMEP booklet to promote the results of the monitoring programme.

42. Moreover, the Task Force should deliver a 10-year assessment report, which should be a starting point reference document to assess the impact of the implementation of the revised Gothenburg Protocol. The current status, reached after 10 years of the former Protocol, should help in setting assessment indicators for the next 10 years. Parties would be requested to fill in a questionnaire from the Task Force on the implementation and achievements of Gothenburg Protocol as a contribution to that work.

43. Finally, it was agreed that short flyers (an example was presented for POPs) should be elaborated and published to be used for communication to policymakers.

44. WMO requested signature of an agreement aiming at the recognition of EMEP as a contributing network. In spite of the long-term and extremely efficient and mutually beneficial collaboration, an official agreement was never signed. The EMEP Chair would study the proposed document and its applicability.

VI. Future work

45. Following discussion on the activities to be reflected in the 2013 workplan of the EMEP Steering Body, the Task Force agreed to propose the following work items for the remaining part of 2012 and for 2013:

(a) To build up the appropriate framework and support for the implementation of the updated EMEP monitoring strategy, by undertaking the following actions:

(i) Considering possible synergies with the monitoring requirements of the EU Air Quality Directive; (CCC/Task Force/Parties);

(ii) Developing cooperation with the atmospheric composition research community and the existing operational monitoring networks, especially for short-lived climate forcers monitoring (e.g., Global Atmospheric Watch) and the ACTRIS infrastructure;

(b) To contribute to the development and the implementation of the workplan for the next EMEP field campaigns, scheduled for summer and winter periods in 2012 and 2013, respectively, and to present that workplan to the EMEP Steering Body at its thirty-sixth session in 2012; (CCC/Task Force);

(c) To provide guidance and assistance for the implementation of new case studies on heavy metal pollution assessment, which aimed at bringing together the know-how for policy support from emission, measurement and modelling communities; and to assess and analyse the results and overall success of the exercise; (MSC-E/Task Force);

(d) To organize and coordinate the EURODELTA3 follow-up modelling exercise focusing on the evaluation of the ability of models (especially the EMEP model) to simulate fine resolution atmospheric processes, with emphasis on the development of common model inter-comparison protocols, model-to-observation performance indicators and criteria needed for to evaluation of the state of the art of the EMEP model, as well as its ability to reproduce past trends in air pollutant concentrations. First results would be reported to the EMEP Steering Body at its thirty-sixth session in 2012; (Task Force/Parties/MSC-W);

(e) To organize and coordinate a modelling exercise dedicated to the evaluation of the sensitivity of model results to spatial resolution. The EMEP model should be used in that study with other national tools. Results would be reported to the EMEP Steering Body at its thirty-sixth session in 2012; (Task Force/parties/MSC-W);

(f) To organize and coordinate the preparation of a report on the Convention's achievements within the past 10 years, based on monitoring observation data, modelling results and national expertise. As a first step, a questionnaire to assess the results of the implementation of the Gothenburg Protocol would be circulated to countries (Task Force/Parties/MSC-W/MSC-E/CCC);

(g) To improve cooperation with the Working Group on Effects through exchange of results and data dedicated to transboundary air pollution impact assessment. Common work should be organized for the edition of the 10-year assessment report; (Task Force);

(h) To report on progress at the thirty-seventh session of the EMEP Steering Body; (Task Force/MSC-W/CCC/Parties);

(i) To contribute as far as possible to the ongoing EU modelling initiatives (e.g., EC4MACS, the EEA Forum for Air Pollution Modelling (FAIRMODE) and the Air Quality Model Evaluation International Initiative (AQMEII));

(j) To consider options and opportunities for enhancing the visibility and promotion of the work of the Task Force, e.g., by means of newsletters or conferences); (Task Force/Parties/Centres);

(k) To hold its thirteenth meeting in 2013, and to report on its outcomes to the EMEP Steering Body at its thirty-seventh session in 2013; (Task Force).