UNITED NATIONS **E**

Economic and Social Council

Distr.
GENERAL

EB.AIR/2004/3
21 September 2004

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

EXECUTIVE BODY FOR THE CONVENTION ON
LONG-RANGE TRANSBOUNDARY AIR POLLUTION

Twenty-second session
(Geneva, 29 November – 3 December 2004)
Item 11 of the provisional agenda

DRAFT WORK-PLAN FOR THE IMPLEMENTATION OF THE CONVENTION ON LONG-RANGE TRANSBOUNDARY AIR POLLUTION IN 2005

Note by the secretariat

1. In preparing the draft work-plan, the secretariat has taken into consideration the current work-plan (ECE/EB.AIR/79/Add.2, annex XII), as well as the decisions taken by the Working Group on Strategies and Review at its thirty-sixth session (EB.AIR/WG.5/78), the Implementation Committee at its thirteenth and fourteenth meetings (EB.AIR/2004/6 and Add.1), the Working Group on Effects at its twenty-third session (EB.AIR/WG.1/2004/2), and the Steering Body to the Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP) at its twenty-eighth session (EB.AIR/GE.1/2004/2).

2005 WORK-PLAN FOR THE IMPLEMENTATION OF THE CONVENTION

1. STRATEGIES AND POLICIES

1.1 STRATEGIES AND REVIEW

Description/objective: Assessment of ongoing scientific and technical activities in view of the potential need to revise existing protocols or prepare new ones; negotiating revisions to protocols, including their annexes; promoting the exchange of technology; preparing proposals for any strategic developments under the Convention. The Working Group on Strategies and Review will assist the Executive Body in all policy-related issues.

Main activities and time schedules: Taking into account the relevant activities under EMEP and the Working Group on Effects, as well as the initiatives of the European Community and other Parties, and on the basis of information received from its expert groups, the Working Group on Strategies and Review will, in particular:

(a) Assess work in preparation for a review of the 1999 Gothenburg Protocol, including progress in reducing acidification, eutrophication and ground-level ozone and the pollutants responsible for these effects, including work carried out under items 1.4 (economic assessment) and 1.9 (ammonia abatement). It will also review work on particulate matter (PM) pollution, taking into account proposals for further action and work on PM (item 1.11), as well as work carried out under items 2.3 (integrated assessment modelling). It will present a proposal for further action and required input for a review of the Protocol to the Executive Body;

(b) Assess work in preparation of a review of the Protocol on Heavy Metals, taking into account progress under item 1.6 below, including information on the pollutants scheduled for re-evaluation in the Protocol and on pollutants that are candidates for future inclusion. It will prepare proposals for further action and required inputs for review of the Protocol;

(c) Assess work on the review of the Protocol on Persistent Organic Pollutants (POPs), taking into account progress under item 1.5 below, including information on the pollutants scheduled for re-evaluation in the Protocol, on the review of sufficiency and effectiveness of the Protocol and on procedures for dealing with pollutants that are candidates for future inclusion. It will prepare proposals for further action and required inputs for review of the Protocol;

(d) Review progress in the exchange of information and technology, including the work on techno-economic issues carried out under item 1.7 below, information received on product-related measures to reduce emissions of volatile organic compounds (VOCs), POPs and heavy metals and progress in work carried out under item 1.8 below.

The thirty-seventh session of the Working Group on Strategies and Review will take place from 26 to 30 September 2005.

1.2 COMPLIANCE REVIEW

Description/objectives: Review of compliance by the Parties with their obligations under the Protocols to the Convention.

Main activities and time schedule: Any submission or referral made under paragraph 3 (b) of the

Committee's functions will be dealt with as a priority and the Committee may have to adjust its work-plan and time schedule accordingly. In this regard, the Committee will continue to review the progress made by the Parties in response to decisions taken by the Executive Body based upon the Committee's recommendations as well as the need for possible additional measures for dealing with non-compliance on a case-by-case basis. The Implementation Committee will also evaluate the reporting by the Parties on their emissions data and their strategies and policies, including the reporting on technology-related obligations. It will continue and complete its in-depth review of compliance by the Parties with the 1998 Protocol on POPs. The Committee will continue its dialogue with appropriate bodies and experts. It will also continue consideration of compliance issues related to obligations in the protocols that are not subject to specific reporting requirements, such as provisions dealing with research and monitoring.

(a) Fifteenth meeting of the Implementation Committee in Berlin, 13-15 April 2005;

(b) Sixteenth meeting of the Implementation Committee in Geneva, 25-27 July 2005;

(c) Eighth report by the Implementation Committee to the Executive Body at its twenty-third session.

1.3 REVIEWS OF STRATEGIES AND POLICIES FOR AIR POLLUTION ABATEMENT

Description/objectives: Overview of air pollution abatement in the UNECE region, giving a comprehensive description of national and international strategies and policies, including legislation in force and emission levels. Provide, together with emission data, a basis for the Implementation Committee to review compliance by Parties with their obligations under the protocols to the Convention. Reviews for purposes of compliance are carried out every two years; a general policy review is carried out every four years.

Main activities and time schedule: The replies to the 2004 questionnaire will be made available on the Convention's web site and information provided to the Implementation Committee as needed. On the basis of feedback from the Executive Body, the Committee and Parties, the secretariat will propose draft questions for the 2006 questionnaire, including a general policy section, to the Executive Body at its twenty-third session. Once agreed, the 2006 questionnaire will be made available to Parties in January 2006.

1.4 ECONOMIC ASSESSMENT OF BENEFITS FROM AIR POLLUTION ABATEMENT AND ECONOMIC INSTRUMENTS

Description/objectives: To develop further the economic work on benefits and economic instruments and to enable economic considerations to be taken into account in the discussion/review of the protocols to the Convention. Future workshops will cover the use of economic instruments to reduce transboundary air pollution and economic evaluation of damage to materials.

Main activities and time schedule: The Network of Experts on Benefits and Economic Instruments (NEBEI), led by the United Kingdom and with Norway as rapporteur, will provide the framework and expertise for a series of workshops. NEBEI will meet only on the occasion of planned workshops and include not only economists but also representatives from other specialist groups. It will collaborate closely with the Task Force on the Health Aspects of Air Pollution, the Working Group on Effects and the Task Force on Integrated Assessment Modelling. A third

workshop is tentatively scheduled for spring 2005 in Italy on the subject of damage to materials including cultural heritage.

1.5 REVIEW AND REASSESSMENT OF PERSISTENT ORGANIC POLLUTANTS

Description/objectives: To continue work on the review of the 1998 Protocol on POPs including the reassessments of production and use for annexes I, II and III to the Protocol as specified in its annexes, and the review of effectiveness and sufficiency as specified in article 10 of the Protocol; to begin the technical review of officially submitted dossiers of new substances proposed by Parties for inclusion into annexes I, II and III to the Protocol.

Main activities and time schedule: The Task Force on POPs will continue its work on the preparation of the technical components of the first sufficiency and effectiveness review of the Protocol, as well as on the technical reviews of new substances proposed for addition to the Protocol. The Working Group on Effects and the EMEP Steering Body are requested to contribute to and participate in this work. The Task Force will hold one meeting in 2005 and informal meetings as needed.

1.6 REVIEW OF INFORMATION ON HEAVY METALS

Description/objectives: To begin work on the review of the 1998 Protocol on Heavy Metals including the scheduled evaluations of limit values, review of sufficiency and effectiveness and review of additional heavy metals, product control measures or products/product groups, taking into account work of the relevant bodies under the Convention and synergies with the abatement of particulate matter (PM) and the work carried out under item 1.7 (techno-economic issues) below.

Main activities and time schedule: As agreed by the Executive Body at its twenty-second session and the Parties to the Protocol on Heavy Metals at that session, the Task Force on Heavy Metals, led by Germany, will:

(a) Initiate the technical work necessary for the scheduled evaluations of emission limit values (no later than two years after the date of entry into force of the Protocol) for existing chlor-alkali plants (annex V, para. 19) and medical waste incineration (annex V, para. 23 (c));

(b) Initiate the technical work necessary for the review of sufficiency and effectiveness of the Protocol taking into account the best available scientific information on the effects of depositions of heavy metals, assessments of technological developments and changing economic conditions;

(c) Prepare annotated chapter headings for the technical components of the review of sufficiency and effectiveness;

(d) Initiate the technical work necessary to assess the extent to which a satisfactory basis exists for the application of an effects-based approach;

(e) Prepare generic guidelines and/or procedures for the technical review of additional heavy metals, product control measures or products/product groups that may be proposed by Parties for inclusion in the Protocol.

The first meeting of the Task Force on Heavy Metals will be held in March 2005 in Germany. Progress reports will be prepared for consideration at the thirty-seventh session of the Working

Group on Strategies and Review. The Working Group on Effects and the EMEP Steering Body are requested to contribute to and participate in this work. The Working Group on Strategies and Review will report to the Executive Body at its twenty-third session on this work.

1.7 TECHNO-ECONOMIC ISSUES

Description/objectives: To further explore best available techniques (BAT) for emission abatement, their efficiency and costs; to continue the development of a techno-economic database (ECODAT) and methodologies for evaluating uncertainties and to draw up draft revisions of techno-economic issues in annexes to protocols.

Main activities and time schedule:

(a) The Expert Group on Techno-economic Issues, with France as lead country, will continue to collect and store techno-economic data on emission control options and abatement techniques in the selected sectors, their costs and ranges of uncertainties;

(b) Data will be collected according to the nomenclature for reporting (NFR) in the Guidelines for Estimating and Reporting Emission Data;

(c) Validated data on reference installations and control technologies, investment and operational costs, etc., will be transmitted to the Centre for Integrated Assessment Modelling (CIAM) to be aggregated for inclusion in RAINS;

(d) Data will be made available for future consideration of revision of technical annexes to protocols;

(e) The Expert Group will meet in January 2005 in Laxenburg (Austria) together with the Task Force on Integrated Assessment Modelling.

1.8 EXCHANGE OF INFORMATION AND TECHNOLOGY

Description/objectives: To create favourable conditions for implementing technology-related obligations of the Convention and its protocols, to facilitate the implementation of existing protocols and the accession of non-Parties, particularly countries with economies in transition; to examine the needs for updating technical annexes and guidance documents to the protocols.

Main activities and time schedule:

(a) The secretariat will make contact with Parties that may wish to support a training workshop in the Eastern European, Caucasian and Central Asian (EECCA) region on the implementation of the Convention's protocols, especially the Protocols on POPs and Heavy Metals;

(b) The secretariat will explore ways and means, including finding the necessary resources, to complete implementation guides to recent protocols and have them translated into Russian;

(c) Possibilities for convening other workshops on techniques and technologies for emissions from stationary sources, including economic aspects, focused on particulate matter or other topics, will be explored, should host countries come forward;

(d) The secretariat will follow progress on the project on capacity-building for air quality management and the application of clean-coal combustion technologies in Central Asia (CAPACT), funded by the United Nations Development Account, and report to the Working Group on Strategies and Review at its thirty-seventh session;

(e) The secretariat will continue to collect information from Parties and international

institutions on control technologies and product management practices for pollutants covered by the protocols and collaborate with other international bodies, e.g. European Integrated Pollution Prevention and Control Bureau in Seville (Spain).

1.9 AMMONIA ABATEMENT

Description/Objectives: To promote the use of the Framework Advisory Code of Good Agricultural Practice for Reducing Ammonia Emissions, prepared by the Expert Group on Ammonia Abatement led by the United Kingdom, as a basis for Parties to draw up national codes and to quantify relationships between recommended control options/techniques and resulting ammonia emissions (EB.AIR/WG.5/2002/3); to improve emission inventories and projections of ammonia. The work will be done in collaboration with the agricultural panel of the Task Force on Emissions Inventories and Projections, the Task Force on Measurements and Modelling and the Expert Group on Techno-economic Issues. Efforts should be made to strengthen links with EECCA countries, encouraging their participation in meetings and workshops.

Main activities and time schedule:

The Expert Group on Ammonia Abatement will:

(a) Continue work towards improving the quality of ammonia emission inventories and projections from both agricultural and non-agricultural sources;

(b) Continue proposed revisions to the Guidance Document on Control Techniques for Preventing and Abating Emissions of Ammonia (EB.AIR/1999/2, chap. V), taking into account the Framework Advisory Code of Good Agricultural Practice for Reducing Ammonia Emissions and the European Union Integrated Pollution Prevention and Control Best Available Technology (BAT) reference document for pigs and poultry as well as other relevant BAT reference (BREF) documents;

(c) Invite CIAM to report the results of its questionnaire on farm practices and agricultural ammonia abatement techniques to it at its next meeting;

(d) Further consider non-agricultural ammonia emissions that may be underreported by Parties, in collaboration with the Task Force on Emission Inventories and Projections and the Task Force on Measurement and Modelling; consider ways to improve the quality of reporting of ammonia emissions and measurements;

(e) Review, in cooperation with the Task Force on Measurement and Modelling, strategies to measure emissions of nitrogen compounds and consider a future workshop comparing measurement and modelling techniques used in Europe.

The next meeting of the Expert Group on Ammonia Abatement will be held in April/May 2005 in Segovia (Spain).

1.10 COMMUNICATION STRATEGY FOR THE CONVENTION

Description/Objectives: To enhance communications concerning the work and successes of the Convention to the public and the press; to increase awareness about air pollution and to improve the dialogue on its abatement between Parties, non-governmental organizations and the public. Follow up on recommendations made at the workshop on a communication strategy for the Convention (EB.AIR/WG.5/2003/7).

Main activities and time schedule:

(a) Continued consideration of the implementation of the recommendations of the workshop on communications through a task force, expert group, network of experts and/or workshops;

(b) Continued consideration of issues of outreach especially with regard to the possible development of a global forum on air pollution;

(c) The secretariat will continue to develop and rationalize the Convention's web site ensuring it is easy to use and fit for purpose.

1.11 PARTICULATE MATTER

Objectives: Improved technical understanding of the abatement options and the technical possibilities to reduce concentrations of particulate matter under the Convention.

Main activities and time schedule: As agreed by the Executive Body at its twenty-second session, the Expert Group on Particulate Matter, with [Germany] as lead country [and XXX as a co-chair], will hold [a] meeting[s] in 2005. The Expert Group will:

(a) Assess the degree of control of pollutants contributing to the formation of PM already provided by existing protocols to the Convention;

(b) Review current work under the Convention on PM, taking also into account the latest results of the forthcoming Thematic Strategy on Air Pollution of the European Community and similar strategies of other Parties;

(c) Review the characteristics of PM as a transboundary pollutant, e.g. contribution to ambient concentrations from local, national, regional and hemispheric sources, and consider the implications of choosing different particle size fractions;

(d) Consider the scientific and technical requirements, as well as non-technical measures, needed for possible options on how to assist Parties in developing further measures to reduce PM;

(e) Give technical support also to other abatement strategies of Parties to the Convention, including the Thematic Strategy on Air Pollution of the European Community;

(f) Carry out such other tasks as the Executive Body may assign to it.

2. COOPERATIVE PROGRAMME FOR MONITORING AND EVALUATION OF THE LONG-RANGE TRANSMISSION OF AIR POLLUTANTS IN EUROPE (EMEP)

All work items listed below will be undertaken in close cooperation with Parties and national experts, and, where relevant, with other bodies under the Convention. Wherever relevant and possible, the EMEP centres (Chemical Coordinating Centre (CCC), Centre for Integrated Assessment Modelling (CIAM), Meteorological Synthesizing Centre-East (MSC-E) and Meteorological Synthesizing Centre-West (MSC-W)) will cooperate with other organizations, programmes and projects, including the Arctic Monitoring and Assessment Programme (AMAP), the East Asian Acid Deposition Network (EANET), the European Commission's Clean Air for Europe (CAFE) programme, the European Environment Agency (EEA) (including its European Topic Centre for Air and Climate Change (ETC/ACC)), the International Geosphere-Biosphere Programme (IGBP) and its International Global Atmospheric Chemistry (IGAC) activity, the marine commissions, the United Nations Environment Programme (UNEP), the World

Meteorological Organization (WMO), including its Global Atmosphere Watch (GAW) programme, and the European Centre for Medium-range Weather Forecasts (ECMWF).

2.1 EMISSIONS

Description/objectives: Further develop the EMEP emission inventory, based on data submitted by Parties, improve the quality, transparency, consistency, completeness and comparability of reported emission and projection data, support the review of compliance and assist Parties to fulfil their reporting tasks. The Task Force on Emission Inventories and Projections, with assistance from the centres and in cooperation with the European Environment Information and Observation Network (EIONET), will provide a technical forum and expert network to share information, harmonize emission factors, establish methodologies for the evaluation of emission data and projections, and identify and resolve problems related to reporting. The Task Force will continue cooperation with other bodies.

Main activities and time schedule:

(a) The Task Force will: work with Parties to improve the quality, consistency and completeness of emission reporting with a focus on validation and implementation of good practice; cooperate with EMEP centres, EEA and the Joint Research Centre (JRC) to facilitate and ensure implementation of the inventory improvement programme; continue to develop and promote the Atmospheric Emission Inventory Guidebook, in collaboration with EEA and JRC; hold its thirteenth meeting jointly with EIONET on 19-20 October 2004 in Milan, Italy, preceded by a workshop on particulate matter emission inventories (18 October, Milan) and followed by a training seminar on data quality assurance (21 October 2004 at JRC, Ispra, Italy) and its fourteenth meeting in spring 2005, with emphasis on data quality and inventory review, and its fifteenth meeting jointly with EIONET in autumn 2005 in Helsinki. MSC-W, with ETC/ACC and CIAM, will support the Task Force's work on emission data review;

(b) The Task Force will: focus on review of reported emissions of heavy metals, POPs and PM; identify actions to improve the inventory; in cooperation with CIAM, CCC, EEA and JRC, it will promote improvements in estimating and reporting PM emissions; initiate discussions on methods and resource requirements for in-depth inventory reviews;

(c) By 15 February 2005, or 1 March 2005 for gridded data, as requested by the secretariat and in accordance with the Emission Reporting Guidelines, Parties should submit 2003 emission data and projections and updates to data for earlier years as summarized in EB.AIR/GE.1/2004/13, table;

(d) MSC-W will compile reported emission data, review data consistency, update the inventory database, making it available at http://webdab.emep.int, evaluate data to ensure the quality of gridded sector emissions. CIAM will support work on projections. MSC-E and CCC will support work on heavy metals and POPs. CCC will support work on PM.

2.2 ATMOSPHERIC MEASUREMENTS AND MODELLING

Description/objectives: Assess results of implementing protocols to the Convention, provide measurement and modelling tools for international air pollution abatement policies, including review of protocols, and compile and evaluate information on transboundary air pollution. The Task Force on Measurements and Modelling, led by the United Kingdom and co-chaired by WMO, with the assistance of the centres, supports the Steering Body by: (i) reviewing and

assessing activities of EMEP related to monitoring and modelling; (ii) evaluating their contribution to the implementation and further development of protocols; and (iii) drawing up specific proposals. It provides for closer collaboration among the Parties, the centres, other Convention bodies, international bodies and the scientific community to strengthen scientific communication and cooperation.

Main activities and time schedule:

(a) The Parties will report to CCC monitoring results for 2004 by 1 October 2005 in accordance with the monitoring strategy (EB.AIR/GE.1/2004/5). CCC will: store data in the EMEP database; make data available via the Internet once checked; evaluate data and report to the Task Force focusing on policy-relevant aspects; inform the Task Force of progress in further harmonizing reporting with other international organizations;

(b) CCC, in consultation with the Task Force, will continue work to improve the EMEP Manual for Sampling and Chemical Analysis, update the Manual's assurance (QA) quality control (QC) section and expand the QA information available through the Internet;

(c) The Task Force, supported by CCC, will: assist Parties to implement the monitoring strategy, taking into account the workshop on this topic, hosted by the Norwegian Institute for Air Research (NILU) in autumn 2004; in cooperation with MSC-E and MSC-W, continue to examine approaches to combine modelling data with observations; collaborate with national and international programmes to implement the 'level' approach of the strategy; provide training and guidance to Parties to establish level 2 and level 3 monitoring sites. Parties, supported by CCC, will continue efforts to improve the network in the Mediterranean region and in Central and Eastern Europe. The Task Force will hold its sixth meeting in spring 2005 hosted by the Meteorological and Hydrological Service of Croatia, and report on progress to the Steering Body at its twenty-ninth session;

(d) The Task Force will, in close collaboration with experts from Parties and the EMEP centres, prepare for the evaluation of the MSC-East modelling of heavy metals and POPs. MSC-E will host a workshop on the review in autumn 2005;

(e) The Task Force, in collaboration with interested Parties and the centres, will continue to assist MSC-W in the further development of the unified Eulerian model with respect to particulate matter, taking into account the recommendations of the review meeting which took place on 3-5 November 2003 in Oslo (EB.AIR/GE.1/2004/6);

(f) The centres, in consultation with the Task Force, will collaborate with networks outside the EMEP area to link regional and hemispheric measurements and to extend modelling work over the Northern hemisphere. They will explore interactions between the work of EMEP and initiatives such as Global Monitoring for Environment and Security (GMES);

(g) MSC-W will explore the possibilities for increasing the spatial resolution of the unified Eulerian model;

(h) The centres, in consultation with the Task Force and in cooperation with EEA and JRC, will further assess the links between regional pollution and urban and local pollution, in particular for PM and ozone, and will report their findings to the EMEP Steering Body.

2.3 INTEGRATED ASSESSMENT MODELLING

Description/objectives: Analyse scenarios on cost-effective reduction of acidification, eutrophication, tropospheric ozone, particulate matter (PM) pollution and related phenomena, and the links between regional air pollution and climate change and explore

possibilities for the development of emission projections for POPs and heavy metals. Modelling will cover: (i) abatement options for reducing sulphur, nitrogen oxides, ammonia, VOCs and primary PM, including structural measures in energy, transport and agriculture, and their costs; (ii) projections of emissions; (iii) assessments of the atmospheric transport of substances (including hemispheric transport); and (iv) analyses and quantification of environmental and health effects and benefits of emission reductions. Modelling will draw upon the results from other subsidiary bodies. The Task Force on Integrated Assessment Modelling, led by the Netherlands, will guide the work of CIAM at the International Institute for Applied Systems Analysis (IIASA). All activities will be conducted in close collaboration with related work led by the European Commission.

Main activities and time schedule:

(a) The Task Force on Integrated Assessment Modelling will: discuss modelling work by CIAM and other national and international initiatives; review progress in preparing baseline scenarios for the review of the Gothenburg Protocol; encourage and support national modelling activities by its National Focal Points; promote sharing of data and experience with integrated assessment modelling outside the EMEP region; hold a workshop on the progress of the RAINS model in January 2005 in Laxenburg (Austria); hold its thirtieth meeting in May 2005 and its thirty-first meeting later in the year if appropriate;

(b) CIAM will pursue work on the baseline scenarios covering all Parties in the EMEP region, including an assessment of uncertainties. Work in collaboration with MSC-W will focus on uncertainties in atmospheric transport models and related non-linearities in source-receptor relationships as well as the inter-annual variability of source-receptor relationships;

(c) CIAM will continue to develop methods for including the results of dynamic modelling in integrated assessment modelling, in cooperation with the Coordination Center for Effects (CCE), and methods to identify the systematic differences in response to emission changes between regional and urban-scale models in integrated assessment models, in cooperation with MSC-W. It will investigate abatement measures to address urban pollution and report to the Task Force;

(d) The Chairman of the Task Force, in cooperation with CIAM, will explore possibilities for the development of emission projections for certain POPs and heavy metals that can be used in assessing trends in deposition;

(e) CIAM, in cooperation with MSC-W, will use the set of emission projections prepared for the whole Northern hemisphere to examine the effects of hemispheric background pollution on source-receptor relationships in Europe. It will evaluate the cost-effectiveness of measures to reduce regional air pollutants taking into account their impacts on climate change. CIAM will also prepare for an evaluation of sectoral trends and discussion of scenarios of maximum feasible emission reductions taking into account the potential of non-technical measures and new emerging technologies.

2.4 ACIDIFYING AND EUTROPHYING COMPOUNDS

Description/objectives: Provide monitoring and modelling data on concentrations, depositions and transboundary fluxes of sulphur and nitrogen compounds over Europe. Analyse past, present and future exceedances of critical loads of acidifying and eutrophying depositions in Europe. Refine and complete emission data with specific focus on the spatial distribution. Support the preparations for the review of the Gothenburg Protocol.

Main activities and time schedule (see also items 2.1-2.3 above):

(a) MSC-W will calculate the transport of sulphur and nitrogen compounds for 2003. It will revise trends in sulphur and nitrogen air concentrations since 1980 and will further study the influence of co-deposition of ammonia and sulphur dioxide. Together with the other centres, it will present a status report (also covering photo-oxidants) to the Steering Body at its twenty-ninth session;

(b) CCC will arrange for laboratory comparisons of the main components in air and precipitation and continue field comparisons for air chemistry for two or three sites and finalize and evaluate field comparisons for two other sites. CCC will investigate new methods for long-term flux monitoring for sulphur and nitrogen compounds, including dry and total deposition. It will continue to update metadata in the database;

(c) MSC-W will check the model performance with respect to oxidized and reduced nitrogen and will re-examine emissions data with respect to changes in emission patterns (geographical distribution and emission heights). It will also explore possibilities for sub-grid scale modelling of deposition to ecosystems;

(d) MSC-W and CCC, in cooperation with the International Cooperative Programme (ICP) Integrated Monitoring, ICP Modelling and Mapping and ICP Forests, will validate the modelled calculation of total base cation deposition available in December 2004 and evaluate the effects of base cation deposition fields in critical loads calculations.

2.5 PHOTO-OXIDANTS

Description/objectives: Provide monitoring and modelling data on concentrations and transboundary transport of ozone, NOx and VOCs. Evaluate short- and long-term exposures to photochemical oxidants. Refine and complete emission data with specific focus on the spatial distribution. Analyse scenarios of ground-level ozone and exceedances of critical levels. Support the preparations for the review of the Gothenburg Protocol.

Main activities and time schedule (see also items 2.1-2.3 above):

(a) MSC-W will calculate the short- and long-term exposures of vegetation to photochemical oxidants for vegetation growing periods, as well as the rural contribution of ozone levels relevant for human exposure. It will apply the revised ozone level II dry deposition sub-routine and, in cooperation with CIAM and the Working Group on Effects, develop methods to evaluate exceedances of critical levels;

(b) CCC will increase its links with national and other existing monitoring networks to improve the geographic coverage of ozone and VOC monitoring data, including data for trend analysis. It will evaluate the QA/QC procedures and prepare a proposal on parameters to be measured as part of the adopted monitoring strategy. In collaboration with participating laboratories, it will arrange for campaigns with parallel sampling and analyses of VOCs. CCC and MSC-W, as well as other national and international modelling teams, will report on measurements and modelling of VOCs for discussion by the Task Force on Measurements and Modelling at its sixth meeting and will collaborate with VOC monitoring activities established in the European Union (EU) and in other initiatives;

(c) CIAM, in cooperation with MSC-W, will continue to evaluate the effects of control measures on photo-oxidants, paying particular attention to effects of scale and will develop methods to account for the systematic differences in response to emission changes between regional and urban-scale models in integrated assessment models;

(d) The centres will cooperate on extending the modelling work to cover the whole Northern hemisphere. MSC-W will compile the meteorological data for hemispheric modelling and present hemispheric model simulations focusing on the analysis of the influence from the free troposphere on ozone levels in Europe. MSC-E and MSC-W will collaborate with CCE on the extension of land-use information to the Northern hemisphere. CCC will develop a strategy to derive three-dimensional fields of priority substances on the basis of surface and satellite observations, remote sensing and other sensors.

2.6 HEAVY METALS

Description/objectives: Provide monitoring and modelling data on concentrations, depositions and transboundary fluxes of cadmium (Cd), lead (Pb) and mercury (Hg). Develop further the Pb, Cd and Hg transport models in parallel with the development of heavy metal critical limits under the Working Group on Effects. Develop reliable emission data for Cd, Pb and Hg, as well as a preliminary data set for other metals. Support preparatory work for the review of the Protocol on Heavy Metals, in particular the work of the Expert Group on Heavy Metals.

Main activities and time schedule (see also items 2.1-2.3 above):

(a) MSC-E will prepare information for 2003 for Pb, Cd and Hg on: deposition and air concentrations fields in Europe with a resolution of 50 km x 50 km; country-to-country deposition matrices; and deposition to the regional seas. It will compare model results for concentrations in air and precipitation and deposition fluxes with measurements, and study model sensitivity and uncertainty. It will carry out trend analysis of Pb, Cd and Hg pollution (1990-2003) including long-term changes in total deposition to countries and air concentration and deposition fluxes at selected monitoring stations. It will present calculations for Hg dispersion at the hemispheric scale for evaluation of European pollution from global sources and boundary conditions for the regional EMEP modelling;

(b) For the model review, MSC-E will evaluate uncertainties in modelling, measurement and emission data, in cooperation with CCC and the Task Force on Emission Inventories and Projections;

(c) MSC-E will prepare a detailed description of its model and study the model sensitivity and evaluate uncertainties in modelling, measurement and emission data in collaboration with CCC and the Task Force on Emission Inventories and Projections. In close collaboration with CCC and experts from Parties, MCS-E will prepare an extensive evaluation of model performance against long-term measurements, for the model review;

(d) MSC-E will further develop its models and its input databases. It will work on meteorological data and, together with CCC, on the preparation of gridded anthropogenic emission data for regional modelling, based on official emissions and expert estimates, compilation of available data of natural emissions, and measurement data;

(e) Together with MSC-E, CCC will complement EMEP data with data from other international programmes and will carry out a comprehensive comparison of observations with modelling results. CCC will report on the intercomparison for sampling and analytical techniques for seven heavy metals measured in precipitation and it will evaluate the quality of the heavy metals data. CCC, in cooperation with Germany, will organize a field intercomparison of Hg in precipitation.

2.7 PERSISTENT ORGANIC POLLUTANTS (POPs)

Description/objectives: Improve the monitoring and modelling data on concentrations, depositions and transboundary fluxes of selected POPs. Study further the physico-chemical processes of POPs in different environmental compartments, taking into account their transport within the EMEP region and on the hemispheric/global scale. Develop reliable emission data for the POPs listed in the Protocol, as well as a preliminary data set for other substances. Support preparatory work for the review of the Protocol on POPs, and in particular the Task Force on POPs.

Main activities and time schedule (see also items 2.1-2.3 above):

(a) MSC-E will prepare information for 2002 on: evaluation of PAHs (benzo[a]pyrene (BaP), benzo[b]fluoranthene (BbF), benzo[k]fluoranthene (BkF) and indeno[1,2,3-cd]pyrene and PCDD/Fs concentration and deposition fields; evaluation of transboundary transport of BaP in 2002 and pilot assessment of source-receptor relationships for all toxic congeners of PCDD/Fs (country-to-country matrices); trend analysis of environmental contamination by four indicator PAHs and PCDD/Fs in the EMEP domain (1990-2002); and an assessment of the hemispheric pollution by PCBs and HCB. It will analyse contributions from emission sources of the Northern hemisphere to the contamination of the European region in 2000 and the contribution from European sources to the contamination of other regions;

(b) For the model review, MSC-E will evaluate uncertainties in modelling, measurement and emission data, in cooperation with CCC and the Task Force on Emission Inventories and Projections;

(c) MSC-E will further develop its models with respect to: the redistribution between different phases and sedimentation in the marine environment; the gas/aerosol partitioning process in the atmosphere; and the distribution in the atmosphere taking into account spatial and temporal variations of OH radical concentrations. It will complete the second stage of the model intercomparisons and prepare the third stage;

(d) In cooperation with MSC-E, CCC will complement EMEP monitoring data with data from other international and national programmes. It will evaluate data quality and data representativity, and, in cooperation with MSC-E, will compare the observations with model estimates. Both centres will cooperate with UNEP to harmonize the global POPs monitoring strategy with the EMEP strategy;

(e) CCC and MSC-E, in consultation with the Task Force on Emission Inventories and Projections and with Parties, will improve the POPs emission data quality with specific emphasis on PAHs, PCDD/Fs, PCBs and HCB. They will adjust European emission inventories for POPs to the modelling requirements. CCC will develop profiles of chemical species of the selected POPs and collate information on the height of major point sources. It will perform screening studies for new substances.

2.8 FINE PARTICULATES

Description/objectives: Provide an evaluation of concentrations, transboundary fluxes and cost-effective abatement strategies. Develop a reliable emission inventory for primary PM. Evaluate experience with reporting and review guidance for emission estimation and monitoring of air concentrations. Support the investigations on fine particulates in preparation of the review of the Gothenburg Protocol.

Main activities and time schedule (see also items 2.1-2.3 above):

(a) MSC-W will investigate further the chemical composition of particulate matter in Europe and, in cooperation with CCC, analyse the contribution of organic aerosol to total particulate mass, carry out sensitivity tests on the influence of different assumptions on the chemical composition of emission data, and study the effect of wind-blown PM sources and natural dust in total particulate matter mass. It will further study methods to include effects of re-suspension in urban areas in regional simulations. MSC-W will continue the evaluation of the research aerosol model and report to the Task Force on Measurements and Modelling on the comparison of the model results against observations. MSC-W, in collaboration with CCC, CIAM and the Task Force on Emissions Inventories and Projections, will further investigate size distribution and chemical composition of PM emissions;

(b) CCC will evaluate the status of monitoring and quality assurance activities, in particular with a view to providing input for model validation. It will continue work on source apportionment and chemical mass closure in cooperation with national experts. CCC will further improve the implementation of the PM monitoring strategy by advising Parties on setting up additional sites and applying new methodologies. It will follow up the output from the elemental carbon/organic carbon (EC/OC) measurement campaign and further evaluate the sampling and analytical methods used in order to improve these. CCC will strengthen cooperation with other research projects for level 2 and level 3 monitoring as defined in the PM monitoring programme, including the application of vertically resolved data and optical parameters for model validation;

(c) CIAM, in collaboration with MSC-W, will further develop the framework for integrated assessment modelling of fine particulates, in particular to incorporate advances in atmospheric transport models. The centres will prepare integrated assessment modelling scenarios using agreed health indicators. The centres will present a status report to the Steering Body at its twenty-ninth session.

3. EFFECTS OF MAJOR AIR POLLUTANTS ON HUMAN HEALTH AND THE ENVIRONMENT

3.1 REVIEW OF EFFECTS OF MAJOR AIR POLLUTANTS

Description/objectives: Annual review of activities and results of the ICPs and the Task Force on the Health Aspects of Air Pollution. Preparation of a draft annual joint report based on the information provided by the lead countries and the programme coordinating centres, for consideration by the Working Group on Effects.

Main activities and time schedule:

(a) Submission of relevant information on the ICPs and the Task Force on the Health Aspects of Air Pollution to the secretariat (April/May 2005);

(b) Submission of the 2005 joint report of the ICPs and the Task Force on the Health Aspects of Air Pollution prepared by the secretariat, to the Working Group on Effects in 2005.

3.2 INTERNATIONAL COOPERATIVE PROGRAMME ON EFFECTS OF AIR POLLUTION ON MATERIALS, INCLUDING HISTORIC AND CULTURAL MONUMENTS

Description/objectives: Quantification of the multi-pollutant effects on the corrosion of selected materials under different environmental conditions, inter alia, as a basis for the economic evaluation of air pollution damage. A Programme Task Force led by Sweden and Italy, in cooperation with the Programme's main research centre (Swedish Corrosion Institute, Stockholm), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

(a) Statistical evaluation of results from the multi-pollutant exposure programme;
(b) Further development of dose-response functions based on the multi-pollutant exposure programme and the one-year extension programme;
(c) Apply Programme results for mapping of areas with increased risk of corrosion;
(d) Identify threshold levels for effects of PM on materials;
(e) Develop the activities of the Programme's sub-centre on cultural heritage and stock at risk;
(f) Workshop on material damage to cultural heritage in cooperation with CIAM and the NEBEI (tentatively);
(g) Twenty-first meeting of the Programme Task Force, 4-6 April 2005, Cracow, Poland.

3.3 INTERNATIONAL COOPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF ACIDIFICATION OF RIVERS AND LAKES

Description/objectives: Identification of the state of surface water ecosystems and their long-term changes, with respect to the regional variation and impact of selected air pollutants, and including effects on biota. A Programme Task Force led by Norway, which also provides the Programme's centre (Norwegian Institute for Water Research, Oslo), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

(a) Evaluate sulphate and nitrogen trends in surface waters (with EMEP);
(b) Update critical loads of surface waters at monitoring sites;
(c) Dynamic modelling of surface water chemistry and biology;
(d) Biological recovery trends and links to chemistry;
(e) Assessment of POPs in aquatic biota;
(f) Workshop on confounding factors, 2005/2006 (tentatively);
(g) Twenty-first meeting of the Programme Task Force, October 2005 (tentatively).

3.4 INTERNATIONAL COOPERATIVE PROGRAMME ON ASSESSMENT AND MONITORING OF AIR POLLUTION EFFECTS ON FORESTS

Description/objectives: Collection and assessment of comprehensive and comparable data on changes in forests under actual environmental conditions (in particular air pollution, including

acidifying and eutrophying deposition, as well as other stresses) and determination of cause-effect relationships. A Programme Task Force led by Germany, in cooperation with the Programme's main coordinating centre (Federal Research Centre for Forestry and Forest Products, Hamburg, Germany), is responsible for the detailed planning and coordination of the Programme. Extensive large-scale monitoring (level I), intensive monitoring of forest ecosystems on the permanent sample plots (level II) and integrated evaluation of results are carried out.

Main activities and time schedule:

(a) Continue large-scale crown condition assessment (level I) and intensive monitoring (level II);

(b) Collaboration with ICP Modelling and Mapping to assess critical loads at ICP Forest sites;

(c) Collaboration with the United States Department of Agriculture's Forest Service with respect to assessment of critical loads in Northern America;

(d) Assess carbon-nitrogen interactions (C/N) and nitrogen effects in forested ecosystem (with ICP Integrated Monitoring and ICP Modelling and Mapping) and the trends of nitrogen in wet deposition;

(e) Develop concentration- and flux-effect ozone models for trees and assess geographical distribution of ozone injuries to forests;

(f) Further development of data management and evaluation strategy;

(g) Further development of studies on forest biodiversity (e.g. ground vegetation and epiphytic lichens) and its relationship to air pollution;

(h) Twenty-first meeting of the Programme Task Force, 23-26 May 2005, Rome.

3.5 INTERNATIONAL COOPERATIVE PROGRAMME ON EFFECTS OF AIR POLLUTION ON NATURAL VEGETATION AND CROPS

Description/objectives: Evaluation of the effects of air pollutants and other stresses on natural vegetation and crops; identification of dose/response functions for a range of crops; assessment of economic losses caused by ozone effects on crops; validation of ozone critical levels for natural vegetation and crops and further development of the flux-based approach; evaluation of natural vegetation and crops as effective indicators of the potential for damage to natural ecosystems by ozone; evaluation and mapping of heavy metal deposition to vegetation; and evaluation of the impacts of nutrient nitrogen on semi-natural vegetation. A Programme Task Force, led by the United Kingdom, with the cooperation of the Programme's coordination centre (Centre for Ecology and Hydrology, Bangor, United Kingdom), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

(a) Compile ozone critical level exceedance maps based on the new critical levels of ozone (with MSC-W);

(b) Analyse the extent and trends of ozone damage to vegetation (crops and (semi-) natural vegetation);

(c) Study interactive impacts of ozone and nitrogen on crops and (semi-) natural vegetation;

(d) Analyse temporal trends in the nitrogen concentration in European mosses;

(e) Monitor the deposition of heavy metals using (semi-) natural vegetation and mosses, including preparing for and conducting the European heavy metals in mosses survey;

(f) Workshop on critical levels of ozone: further applying and developing the flux-based concept, 15-19 November 2005, Obergurgl, Austria;

(g) Eighteenth meeting of the Programme Task Force, January/February 2005, Almeria, Spain.

3.6 INTERNATIONAL COOPERATIVE PROGRAMME ON INTEGRATED MONITORING OF AIR POLLUTION EFFECTS ON ECOSYSTEMS

Description/objectives: Determination and prediction of the state of ecosystems and their long-term changes with respect to the regional variation and impact of selected air pollutants, with special attention to effects on biota. A Programme Task Force led by Sweden is responsible for planning, coordinating and evaluating the Programme. The Programme's centre (Finnish Environment Institute, Helsinki) is entrusted with collecting, storing, processing and analysing data from countries taking part in the Programme.

Main activities and time schedule:

(a) Report/publication on observed trends in sulphur and nitrogen fluxes;

(b) Estimation of cumulative nitrogen deposition and its effects (with the CCE);

(c) Assess the C/N interactions and nitrogen effects in forested ecosystem (with ICP Forests and ICP Modelling and Mapping);

(d) Submit a scientific paper on heavy metals;

(e) Calculation of critical loads using monitoring site data, with emphasis first on heavy metals and later on sulphur and nitrogen;

(f) Thirteenth meeting of the Programme Task Force, 12-14 May 2005, Reykjavik.

3.7 INTERNATIONAL COOPERATIVE PROGRAMME ON MODELLING AND MAPPING OF CRITICAL LEVELS AND LOADS AND AIR POLLUTION EFFECTS, RISKS AND TRENDS

Description/objectives: Determination of critical loads and levels and their exceedances for selected pollutants, development and application of other methods for effect-based approaches such as dynamic modelling, and modelling and mapping of the present status and trends in impacts of air pollution. A Programme Task Force led by Germany is responsible for the detailed planning and coordination of activities. The Task Force uses and integrates available and accepted data, drawing, in particular, on the current work of other task forces, ICPs and EMEP. CCE (at the National Institute of Public Health and the Environment, Bilthoven, Netherlands) provides scientific and technical support to the Task Force and to other effect-related activities, in particular by developing methods and models for calculating critical loads and levels and for applying other effect-based approaches, as well as by producing maps of critical loads and levels and their exceedances, and other risk parameters related to potential damage and recovery.

Main activities and time schedule:

(a) Updating and evaluating critical loads for acidification and eutrophication and target load functions for acidification;

(b) First results of large-scale dynamic modelling related to acidification and nutrient nitrogen;

(c) Updating and evaluating critical loads for heavy metals (Pb, Cd, Hg);

(d) Further development of risk assessment methodologies and robustness assessment;

(e) Evaluation and harmonization of ecosystem data, including base cation deposition and land cover maps (with all ICPs, EMEP and other organizations);

(f) Provide methods and data to CIAM;

(g) Twenty-first meeting of the Programme Task Force, 28-29 April 2005, Dessau, Germany (tentatively), and fifteenth CCE workshop, 25-27 May 2005, Dessau (tentatively).

3.8 EFFECTS OF AIR POLLUTANTS ON HUMAN HEALTH

Description/objectives: Preparation of state-of-the-art reports on the direct and indirect effects of long-range transboundary air pollution on human health:

(a) The World Health Organization (WHO) is invited to present relevant progress/technical reports to the Working Group on Effects, so that knowledge acquired by WHO can be applied in the further implementation of the Convention. Additional information/reports should be provided, when appropriate, by other international organizations, interested Governments, and/or other subsidiary bodies under the Convention;

(b) To support the Working Group on Effects and the Executive Body in preparing/substantiating new and/or updating existing protocols, the joint Task Force of WHO/European Centre for Environment and Health (ECEH) and the Executive Body, led by WHO/ECEH, Bonn Office, evaluates and assesses the health effects of long-range transboundary air pollution and reports on the subject.

Main activities and time schedule:

(a) Assess health impacts of particulate matter and ozone based on exposure estimates produced by the RAINS model, including the preparation of assessment reports;

(b) Apply the results from the hazard assessment of particulate matter and ozone to health impact assessment of these pollutants and the preparation of the comprehensive summary reports;

(c) Develop a methodology to include morbidity estimates in quantification of health impacts of particulate matter and ozone;

(d) Initiate the review of new scientific findings allowing improved assessment of health risks of heavy metals from long-range transboundary air pollution;

(e) Support the health risk assessment of (new) POPs considered by the Working Group on Strategies and Review;

(f) Eighth meeting of the Task Force on the Health Aspects of Air Pollution, April/May 2005, Bonn, Germany (tentatively).

3.9 DYNAMIC MODELLING

Description/objectives: Recovery of ecosystems is an important consideration for the development of air pollution strategies, and work on various ecosystems at different scales is carried out by several ICPs. A Joint Expert Group on Dynamic Modelling, led by the United Kingdom and

Sweden, brings together experts from these programmes to share knowledge and produce joint reports on all aspects of dynamic modelling.

Main activities and time schedule:

(a) Develop a method for assessing site-specific simulation results within a regional context;

(b) Determine and evaluate an agreed description of nitrogen processes for dynamic models;

(c) Support both the calculation of critical loads and simulation with dynamic models at monitoring sites of all ICPs;

(d) Develop an agreed methodology for the application of dynamic models to set deposition targets;

(e) Evaluate the synergies in dynamic modelling work carried out by different ICPs;

(f) Report from fifth meeting of Joint Expert Group to the Working Group on Effects, at its twenty-fourth session;

(g) Sixth meeting of the Joint Expert Group, autumn 2005, Sitges, Spain (tentatively).