1. STRATEGIES AND POLICIES

1.1 STRATEGIES AND REVIEW

Description/objectives: To assess ongoing scientific and technical activities for the review of existing protocols or the preparation of new ones; to negotiate revisions of protocols, including their annexes; to promote the exchange of technology; and to prepare proposals for 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 schedule: Taking into account relevant activities under the Steering Body to EMEP\(^2\) 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 and task forces, the Working Group on Strategies and Review will, in particular:

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\(^1\) The numbering and formatting in this workplan are consistent with that of past Executive Body workplans.

\(^2\) Cooperative Programme for Monitoring and Evaluation of the Long-range Transmission of Air Pollutants in Europe.
(a) Continue negotiations, in accordance with article 3, paragraph 12, of the Gothenburg Protocol\(^3\) on the revision of that Protocol, based on recommendations by the Executive Body and on the conclusions of the Protocol review. It will assess progress made in reducing acidification, eutrophication and ground-level ozone and the pollutants responsible for these effects, and in work carried out under items 1.4 (economic assessment) and 1.9 (reactive nitrogen) below. It will also review work carried out under item 2.3 (integrated assessment modelling) of the workplan of the Steering Body to EMEP;

(b) Assess work on the review of, and possible amendments to, the Protocol on Persistent Organic Pollutants (POPs), taking into account progress under item 1.5 (review and assessment of POPs); and continue negotiations on a possible revision/amendment to the Protocol, based on recommendations by the Executive Body;

(c) Assess work following the review of the Protocol on Heavy Metals, taking into account progress under item 1.6 (review and assessment of heavy metals);

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

(e) Implement the revised Action Plan to involve the countries of Eastern Europe, Caucasus and Central Asia (EECCA) in the work of the Convention (ECE/EB.AIR/WG.5/2007/17);

(f) Develop, if necessary, a specific Action Plan to involve countries of South-Eastern Europe (SEE) in the work of the Convention;

(g) Assess progress made in the Convention’s communication strategy, and consider possible future needs in relation with the thirtieth anniversary of the Convention in 2009;

(h) Encourage further ratifications and explore ways to support and facilitate countries’ efforts towards the implementation and ratification of the protocols;

(i) Hold its forty-third session from 9 to 13 March 2009, its forty-fourth session from 20 to 24 April 2009 and its forty-fifth session from 31 August to 4 September 2009.

1.2 COMPLIANCE REVIEW

Description/objectives: To review 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 Implementation Committee's functions will be dealt with as a priority, and the Committee may have to adjust its workplan 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

\(^3\) 1999 Gothenburg Protocol to Abate Acidification, Eutrophication and Ground-level Ozone.
additional measures for dealing with non-compliance on a case-by-case basis. The Committee will also evaluate reporting by the Parties on their emissions data as well as their strategies and policies, including reporting on technology-related obligations. It will complete the in-depth review of compliance by the Parties with the 1998 Protocol on POPs and the 1998 Protocol on Heavy Metals. The Committee will continue its dialogue with appropriate bodies and experts. It will also continue to consider, as appropriate, compliance issues related to obligations in the protocols that are not subject to specific reporting requirements, such as provisions dealing with research and monitoring. Furthermore:

(a) The twenty-third meeting of the Implementation Committee will tentatively be held from 31 March to 2 April 2009 in London;
(b) The twenty-fourth meeting of the Implementation Committee will tentatively be held from 22 to 24 September 2009 in Geneva;
(c) The twelfth report by the Implementation Committee will be submitted to the Executive Body at its twenty-seventh session.

1.3 REVIEWS OF STRATEGIES AND POLICIES FOR AIR POLLUTION ABATEMENT

Description/objectives: To create an overview of air pollution abatement in the UNECE region, giving a comprehensive description of national and international strategies and policies, including legislation in force, emission levels and future priorities; and to 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 2008 questionnaire will be made available on the Convention’s website and information will be provided to the Implementation Committee as needed. On the basis of feedback from the Executive Body, the Committee and the Parties, the secretariat will propose draft questions for the 2010 questionnaire, including a general policy section, to the Executive Body at its twenty-seventh session. Once agreed, the 2010 questionnaire will be made available to Parties in January 2010.

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

Description/objectives: To develop further the 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.

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4 United Nations Economic Commission for Europe.
Main activities and time schedule: The Network of Experts on Benefits and Economic Instruments, led by the United Kingdom with Norway as rapporteur, will provide the framework and expertise for a series of workshops. The Network will meet only on the occasion of planned workshops and will include not only economists but also representatives from other specialist groups. The Network will carry out work on assessing experiences of Parties in using economic instruments for reducing air pollution and will update the Guidance Document on Economic Instruments to Reduce Nitrogen Oxides, Sulphur, VOCs and Ammonia (EB.AIR/1999/2, chapter VI) in the revision process for the Gothenburg Protocol.

1.5 REVIEW AND ASSESSMENT OF PERSISTENT ORGANIC POLLUTANTS

Description/objectives: To work on the technical reviews of substances forwarded to it by the Executive Body and deemed acceptable by the Parties to the Protocol on POPs; and to continue to explore management strategies and options for those substances accepted as POPs by the Parties to the Protocol. The Task Force on POPs, led by Canada and the Netherlands, will carry out the technical work for these reviews and strategies.

Main activities/time schedule: The Task Force on POPs will:

(a) Upon request, assist the Executive Body and the Working Group on Strategies and Review in the revision of the Protocol;
(b) Hold its seventh meeting from 2 to 5 June 2009 in Plovdiv, Bulgaria, and report thereon to the next session of the Working Group.

1.6 REVIEW AND ASSESSMENT OF HEAVY METALS

Description/objectives: Carry out work, if necessary, on the technical review of proposals for additional heavy metals, product control measures or products/product groups. The Task Force on Heavy Metals, led by Germany, will undertake the technical work.

Main activities and time schedule: The Task Force on Heavy Metals will:

(a) Upon request, assist the Executive Body and the Working Group on Strategies and Review in a possible revision of the 1998 Protocol on Heavy Metals or its technical annexes;
(b) Hold its sixth meeting, from 27 to 29 of May 2009 in Stockholm, and report thereon to the forty-fifth session of the Working Group;
(c) Hold an EECCA workshop (provisionally scheduled to be held from 26 to 28 October 2009 in Saint Petersburg, Russian Federation) in cooperation with the Expert Group on Techno-economic Issues, and report thereon to the next session of the Working Group. The workshop will promote the Protocol’s ratification, including through focusing on specific challenges identified in the Protocol’s implementation, recommending future actions and raising awareness of the local policymakers, and better involving EECCA experts in the activities of the Convention;
(d) Assist the Expert Group on Techno-Economic Issues, as needed, including through providing information relevant to particulate matter (PM) for sources covered by the Protocol on Heavy Metals.

1.7 TECHNO-ECONOMIC ISSUES

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

Main activities and time schedule: The Expert Group on Techno-economic Issues, with France and Italy as lead countries, will:

(a) Initiate work on proposals to revise annexes IV, V and VI to the Gothenburg Protocol, specifying limit values for sulphur, nitrogen oxides and VOCs for stationary sources, as well as annex VIII for mobile sources; carry out preparatory technical work to address the requirement in article 3, paragraph 7, of the Protocol to consider limit values for the VOCs content of products not included in annex VI or VIII, with a view to adopting an annex; and carry out work on drafting an annex on limit values for emissions of PM (PM$_{2.5}$ and PM$_{10}$) from stationary sources;

(b) Revise the guidance documents associated with the Gothenburg Protocol on sulphur, nitrogen oxides and VOCs, and add PM to the guidance documents (in consultation with the Task Force on Heavy Metals);

(c) Report on progress to the forty-fourth and forty-fifth sessions of the Working Group on Strategies and Review;

(d) Cooperate with the European Integrated Pollution Prevention and Control Bureau for the revision of BAT reference documents for the steel, glass and possibly cement industries, mainly on cost issues;

(e) Hold its fifteenth meeting on 6 and 7 April 2009 in Rome and its sixteenth meeting on 15 and 16 October 2009 in France.

1.8 EXCHANGE OF INFORMATION AND TECHNOLOGY

Description/objectives: To create favourable conditions for implementing the 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; and to examine the needs for updating technical annexes and guidance documents to the Protocols.
Main activities and time schedule: The Working Group on Strategies and Review will:

(a) Implement the revised Action Plan to involve EECCA countries in the work of the Convention;
(b) Develop a possible new Action Plan to involve SEE countries in the work of the Convention.

1.9 REACTIVE NITROGEN

Description/objectives: To develop an integrated approach towards controlling nitrogen pollution in the framework of the Convention; and to improve coordination between the work of various Convention bodies on nitrogen compounds. A Task Force on Reactive Nitrogen, led by the Netherlands and the United Kingdom, will carry out tasks as outlined in decision 2007/1 of the Executive Body.

Main activities and time schedule: The Task Force on Reactive Nitrogen (TFRN) will:

(a) Improve coordination of activities across and outside the Convention and collaborate with subsidiary bodies under the Convention to complement the work of the subsidiary bodies, in particular by:

(i) Providing technical information for the proposed report of the Working Group on Effects on the impacts of airborne nitrogen on the environment and human health;
(ii) Collaborating with ICP\textsuperscript{5} Modelling and Mapping, in particular on critical loads and dynamic modelling of nitrogen effects, including the development of indicators;
(iii) Collaborating with the Task Force on Emission Inventories and Projections (TFEIP), and participating in the relevant meetings and contributions to their expert work;
(iv) Collaborating with the Task Force on Integrated Assessment Modelling (TFIAM), participating in relevant meetings and in particular providing advice to avoid pollutant swapping and to improve nitrogen budgets at the national level;

(b) Continue the work of the former Expert Group on Ammonia Abatement to develop technical and scientific information on an integrated approach to mitigation of agricultural nitrogen emissions, with particular reference to the revision of the Gothenburg Protocol. Three objectives of the work will be to update the Framework Code of Good Agricultural Practice and the Guidance Document, to inform the Working Group on Strategies

\textsuperscript{5} International Cooperative Programme.
and Review’s deliberations on revisions to annex IX of the Protocol and to take account of reference documents for best available technologies (BREFs);

(c) Provide technical information on making nitrogen balances and estimating nitrogen emissions at various spatial scales and for various system boundaries, and formalize the use and presentation of nitrogen balances;

(d) Develop and provide technical and scientific information to support the revision of the Gothenburg Protocol in relation to the whole nitrogen cycle;

(e) Request the national focal points to provide national reports on technical and scientific information related to nitrogen;

(f) Consider the first results from the European Nitrogen Assessment, in particular to receive the report on the assessment review of nitrogen emissions, impacts and policies relevant to the Task Force on Reactive Nitrogen, and to provide feedback to the European Nitrogen Assessment process;

(g) Hold a workshop on the review of methodologies on nitrogen balances, tentatively scheduled to be held in connection with the second meeting of the Task Force, and submit its report;

(h) Hold the Task Force’s second meeting, tentatively scheduled to be held on 28 and 29 April 2009 in Garmisch-Partenkirchen, Germany, and submit its report.

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

2.1 EMISSIONS

Description/objectives: To further develop emission inventories; to improve the quality, transparency, consistency, completeness and comparability of reported emission and projection data; to support the review of compliance; and to assist Parties with their emission reporting. TFEIP, led by the United Kingdom and co-chaired by Finland and the European Environment Agency (EEA), provides a technical forum for sharing information, harmonizing emission factors, establishing methodologies for the evaluation of emission data and projections, and identifying and resolving reporting problems, with a view to harmonizing as far as possible reporting requirements with other bodies.

Main activities by Parties within the geographic scope of EMEP:

(a) Submit emission data for 2007 and projections and updates regarding data for earlier years by 15 February 2009 and Informative Inventory Reports by the 15 March in accordance with revised Guidelines for Reporting Emission Data under the Convention on Long-range Transboundary Air Pollution (ECE/EB.AIR/97)\(^6\);

\(^6\) 2009 will be the first year for Parties to report according to the revised Reporting Guidelines.
(b) Support the review of emission data through communication with the review teams and by supporting the stage 3 review with nominated reviewers responsible for the compilation of specific country review reports;

(c) Maintain and establish, where appropriate, national activities to improve the compilation of information on emissions and projections;

(d) Support the maintaining and updating of the *EMEP/EEA Air Pollutant Emission Inventory Guidebook*;

Main activities by the EMEP centres:

(a) Compile revised emission data, update the inventory database and make it available online (at http://www.ceip.at/emission-data-webdab/emission-as-reported-by-parties/) by 15 June 2009 and update the database with the late submissions by 1 December 2009 (Centre for Emission Inventories and Projections (CEIP));

(b) Review reported national emission data in line with the stage 1 and stage 2 review procedures and produce a European overview and country specific “stage 1 status reports” by 10 March 2009 and “stage 2 synthesis and assessment reports” by 31 May 2009 for data submitted during the 2009 reporting round (CEIP, EEA);

(c) Implement stage 3 review procedures, provide technical support to the reviewers, coordinate the review process, maintain the list of eligible reviewers and set up review teams. Selection of the countries to be reviewed will be in consultation with the Implementation Committee. (CEIP, TFEIP);

(d) Elaborate a data set of validated and complete emission data submitted during the 2009 reporting round by 15 April 2009 for use in the EMEP 2007 assessments. Increase the transparency in use of non-Party estimates for modelling (CEIP, Meteorological Synthesizing Centre-West (MSC-W), Meteorological Synthesizing Centre-East (MSC-E));

(e) Review sulphur oxides (SOx), nitrogen oxides (NOx), VOCs, ammonia (NH₃) and PM emissions (MSC-W) as well as heavy metals and POPs emissions for modelling purposes (MSC-E);

(f) Support the secretariat and Implementation Committee by providing an overview of emission data reported by Parties to protocols by 30 March 2009 (CEIP);

(g) Establish cooperation with EECCA on methodologies for emissions (CEIP);

(h) New developments on emission data reviews: In 2009 the review task will include further improvement of tests as proposed by TFEIP, and will seek to achieve a common approach to prioritizing and monitoring inventory improvements with the United Nations Framework Convention on Climate Change and the European Union National Emission Ceilings Directive (CEIP);

(i) New developments to support emission reporting by Parties: Where appropriate, enhance the use of alternative ways to facilitate Parties’ submissions of annual emission data to

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7 The stage 2 review will be performed jointly with EEA.
8 See ECE/EB.AIR/GE.1/2007/16.
the secretariat, including through the EEA Reportnet Central Data Repository, and maintain tools for Parties to test reported inventories (CEIP);

(j) New developments in the emission database: Adapt the CEIP emission database and webpage to facilitate implementation of the revised Emission Reporting Guidelines to be applied for the 2009 reporting round, and consider further technical improvements of the data system with the aim of providing consistent information in a transparent manner and in real time (CEIP, TFEIP);

(k) New developments for gridded data: Consider actions to improve the transparency and robustness of gridded data (CEIP).

Main activities by TFEIP:

(a) Evaluate and support the stage 2 and stage 3 review processes, and consider a plan for future maintenance and improvement of guidelines for reviewers and templates for review reports;

(b) Consider and propose further actions to close the gap between official emission data for heavy metals and POPs as well as modelling results in close collaboration with the modelling community (TFEIP, Task Force on Measurements and Modelling (TFMM), MSC-E);

(c) Consider actions to improve emission reporting from EECCA countries in order to cover the extended EMEP area with officially reported data, with the aim of reducing expert estimates to the extent possible;

(d) Develop a plan for future maintenance and improvement of the EMEP/EEA Air Pollutant Emission Inventory Guidebook in cooperation with EEA;

(e) TFEIP will hold its twenty-second meeting from 11 to 12 May 2009 in Vienna, and report thereon to the thirty-third session of the EMEP Steering Body.

2.2 ATMOSPHERIC MEASUREMENTS AND MODELLING

Description/objectives: To support the implementation of protocols to the Convention; provide the measurement and modelling tools necessary for further abatement policies; to compile and evaluate information on transboundary air pollution; and to implement the EMEP monitoring strategy adopted in 2004. TFMM, led by France and co-chaired by the World Meteorological Organization (WMO), reviews and assesses the scientific and operational activities of EMEP related to monitoring and modelling, evaluates their contribution to the effective implementation and further development of the protocols, and reviews national activities related to measurement, modelling and data validation.

Main activities by Parties within the geographic scope of EMEP:

(a) Submit monitoring data for 2008 to Chemical Coordinating Centre (CCC) by 31 July 2009, in accordance with the adopted monitoring strategy (EB.AIR/GE.1/2004/5) and decisions from the EMEP Steering Body;
(b) Make efforts to implement the EMEP monitoring strategy fully, explore options to reduce the timeline of observation data submission, investigate possible caveats in the recommended standard methods and report on progress to the TFMM in May 2009;

(c) Contribute, to the extent possible, to the EMEP field campaigns that will be held in the biennium 2008–2009 and will aim at improving our understanding of PM pollution, and promote urban and fine scale assessments of air quality, in particular ozone and PM, by linking urban exposure information with measurement data, emission inventories and atmospheric dispersion models;

(d) Support the revision of the new EMEP strategy in 2009.

Main activities by the EMEP centres:

(a) Provide validated data on concentrations, depositions and transboundary fluxes of SOx, NOx, and reduced nitrogen, ozone, VOCs and PM (PM$_{2.5}$ and PM$_{coarse}$) for 2007 over the extended (eastward) EMEP domain, and update source-allocation calculations, including EECCA countries, and present their status in 2007 (MSC-W, CCC);

(b) Recalculate source-receptor relationships for 2000 to 2006 with the open source version of the EMEP model, in order to reach consistency in trends results (MSC-W);

(c) Provide validated data on concentrations, depositions and transboundary fluxes of heavy metals (mercury (Hg), lead and cadmium) and POPs for 2007 over the extended (eastward) EMEP domain and update source-allocation calculation, including EECCA countries (MSC-E, CCC);

(d) Prepare individual country status reports and update Web access to electronic source-allocation information with validated data for the main pollutants and PM and for heavy metals and POPs (MSC-W, MSC-E);

(e) Review, store and make available the 2008 monitoring data; assess uncertainties in, and the representativeness of, monitoring data required by the EMEP monitoring strategy (CCC, MSC-E and MSC-W);

(f) Provide access to validated databases with EMEP measurement data in 2008 by 31 December 2009 (CCC), after joint revision with MSC-E and MSC-W and bilateral discussions with Parties’ experts;

(g) Arrange laboratory intercomparisons for the main pollutants, heavy metals, elemental carbon/organic carbon and POPs, and carry out field intercomparisons at selected sites (CCC, Parties);

(h) Update and improve the EMEP Manual for Sampling and Analysis, and update the section on quality assessment/quality control on the Internet (CCC);

(i) Review the implementation of the 2004–2009 monitoring strategy and provide training/guidance to Parties’ experts to establish monitoring activities in compliance with it (CCC, TFMM);

(j) Continue support and training in EECCA countries (CCC, MSC-East and MSC-W).
Main activities and time schedule for acidification and eutrophication:

(a) New developments in nitrate chemistry: Investigate coarse nitrate formation in dust and sea salt particles (MSC-W);
(b) New developments in nitrate chemistry: Identify the influence of nitrous acid (HNO$_2$) chemistry in hydroxide (OH$^-$) radical formation and its effect on the formation of atmospheric nitrate (MSC-W);
(c) New developments with increased spatial resolution: Investigate the role of spatial resolution in our understanding of reduced nitrogen air concentrations and trends (MSC-W).

Main activities and time schedule for photo-oxidants:

(a) New developments with increased spatial resolution: Start evaluation of the changes needed in regional scale chemical models to improve their performance in local/urban scale applications (MSC-W);
(b) Source-receptor calculations (MSC-W);
(c) New developments with VOCs: Evaluate and extend the VOCs monitoring programme, audit national VOCs monitoring laboratories, and support training and assistance (CCC).

Main activities and time schedule for heavy metals:

(a) New developments in mercury deposition: Consider nationally available measurements on dry deposition of Hg to forests to evaluate measurement uncertainties and improve model parameterization (CCC, MSC-E, Parties);
(b) New developments in ecosystem dependent deposition: Evaluate ecosystem-dependent depositions of heavy metals and contribute to the development of the effect-based approach (MSC-E, Coordination Centre for Effects (CCE));
(c) New developments in heavy metal dispersion modelling: Continue to develop the heavy metal model parameterization, including improvement of the wind re-suspension scheme and implementation of aerosol size-segregated description and removal processes (MSC-E);
(d) New developments in Hg chemistry: Update the Hg chemical scheme in the regional and global models based on new findings of the research community (MSC-E);
(e) New developments in meteorological data preparation: Investigate the possibility to update meteorological drivers by application of the Weather Research and Forecasting Model (WRF).

Main activities and time schedule for POPs:

(a) New developments in POPs gas/particle partitioning: Further refine the description of POPs gas/particle partitioning (MSC-E);
(b) New developments in POPs deposition processes: Improve the model description of depositions of POPs in the particulate phase on the basis of information on spatial and temporal aerosol distribution and chemical composition (MSC-E);

(c) New developments with inverse modelling: Continue to develop the inverse modelling approach for the analysis of differences between measurements and modelling results (MSC-E);

(d) New developments in the study of climate effects on POPs: Further investigate possible approaches to the evaluation of the influence of climate change on the fate and behaviour of POPs (MSC-E);

(e) New developments with POPs monitoring: Continue to evaluate the POPs passive measurements campaign on the hemispheric level and compare with modelling results; evaluate the EMEP monitoring strategy in relation to the outcome of the campaign as well as with the United Nations Environment Programme (UNEP) global monitoring strategy, and report conclusions to TFMM (MSC-East, CCC).

Main activities and time schedule for PM:

(a) New developments in PM chemistry: Evaluate alternative methods for the calculation of water in PM and its influence on PM mass calculations (MSC-W);

(b) New developments in PM chemistry: Investigate to what extent information on the diurnal and seasonal variation of aerosol components from the EMEP campaigns can contribute to a better understanding of the origin of PM in air (MSC-W, CCC);

(c) New developments in PM chemistry: Investigate to what extent new information on secondary organic aerosol is available, and make use of the results as appropriate (MSC-W);

(d) New developments in PM deposition: Investigate different approaches for evaluating the dry deposition of particles and its influence on total PM mass calculations (MSC-W);

(e) New developments using integrated measurements: Evaluate the newly implemented wind-blown dust parameterization with satellite aerosol optical depth (AOD) information and campaign data (MSC-W);

(f) New developments with monitoring carbonaceous aerosol: Continue efforts to develop a reference method for improved sampling and chemical analysis of carbonaceous material in aerosols (CCC);

(g) New developments with EMEP campaigns: Coordinate and carry out the intensive advanced measurements between 25 February and 26 March 2009 (CCC, Parties);

(h) New developments in study of climate effects on PM: Investigate possible approaches to the evaluation of the influence of climate change on the fate and behaviour of PM (MSC-W).

Main activities by TFMM:

(a) Report to the EMEP Steering Body (2009) on the implementation of a new procedure for measurement data reporting that should improve the time of data availability;
(b) Report data and start evaluating the results from the intensive measurements made in September 2008 (Parties, CCC, MSC-W.);
(c) Propose a strategy, based on national emission inventories and measurement and modelling data, for better accounting for urban scale contributions to air pollution patterns;
(d) Organize a joint workshop with the Task Force on the Hemispheric Transport of Air Pollution (TFHTAP), to be held from 17 to 19 June 2009 in Paris, focusing on regional to global modelling and climate interaction;
(e) Hold the tenth meeting of the Task Force on 15 and 16 June 2009 in Paris, and report on the meeting and the workshop to the thirty-third session of the EMEP Steering Body in 2009.

2.3 INTEGRATED ASSESSMENT MODELLING

Description/objectives: To analyse scenarios on cost-effective reduction of acidification, eutrophication, tropospheric ozone and PM pollution. Modelling will cover: (a) abatement options for reducing sulphur, nitrogen oxides, ammonia, VOCs and primary PM, including structural measures in energy, transport and agriculture, and their costs; (b) projections of emissions; (c) assessments of the atmospheric transport of substances; and (d) analysis and quantification of environmental and health effects and benefits of emission reductions. TFIAM, led by the Netherlands, will guide the work of Centre for Integrated Assessment Modelling (CIAM) at the International Institute for Applied Systems Analysis (IIASA), and will encourage and support national modelling activities by its National Focal Points.

Main activities by Parties:

(a) All Parties submit updated projections energy and activity projections compatible with climate change policies by 31 May 2009;
(b) Share experiences in integrated assessment modelling via the new Network for National Integrated Assessment Modelling.

Main activities by the EMEP centres:

(a) Establish the basic requirements and analyse 2020 scenarios to support the revision of the Gothenburg Protocol, for discussion at the forty-fifth session of the Working Group on Strategies and Review in September 2009 and to be presented at the twenty-seventh session of the Executive Body in December 2009.

Main activities by TFIAM:

(a) Contribute to the revision of the Gothenburg Protocol, including the review of national energy projections and aspirational environmental targets and related abatement, links to structural changes and climate change and analysis of uncertainties and robustness (TFIAM, CIAM, Parties, Network for National Integrated Assessment Modelling);
collaborate with the task force on reactive nitrogen, in particular on the avoidance of pollution swapping (tfiam, ciam, parties);

collaborate with the tfhtap, in particular on boundary conditions and future hemispheric emissions (tfiam, ciam, parties);

collaborate with the working group on effects, in particular on: (a) additional analyses of ecosystem effects by the coordination centre for effects, using emission scenarios from the gains model; (b) the use of dynamic models; and (c) the development of policy-relevant indicators, including those for biodiversity (tfiam, ciam, working group on effects);

(e) proceed with the second phase of the gains model review in collaboration with the european commission (tfiam, ciam);

(f) hold a workshop meeting of a tutorial session on the gains model, tentatively in february 2009, and submit its report;

(g) hold a workshop on non-binding aspirational targets for air pollution for the year 2050, tentatively scheduled to be held in february 2009, and submit its report;

(h) hold its thirty-fifth meeting, tentatively scheduled to be held from 8 to 10 june 2009 in the netherlands, and submit its report;

(i) hold a workshop on the second phase of the review of the gains model, tentatively at the end of 2009, and submit its report;

(j) hold its thirty-sixth meeting, tentatively scheduled to be held in december 2009, and submit its report;

(k) submit appropriate reports to the emep steering body and to the working group on strategies and review.

2.4  hemispheric transport of air pollution

description/objectives: to develop a fuller scientific understanding of the hemispheric transport of air pollution and estimate the hemispheric transport of specific air pollutants, tfhtap, led by the united states and the european community, coordinates activities, including collaboration with other international bodies, programmes and networks, both within and outside the unece region, with related interests.

main activities by parties:

(a) contribute with expertise on monitoring, emission estimates and modelling relevant to the policy relevant science questions identified by tfhtap;

(b) actively support the participation of modelling groups in the model inter-comparison for the emep geographical region;
(c) Conduct projects that contribute to the objectives of the TFHTAP such as the development of the global emission database (EDGAR HTAP), the global ground-based monitoring database and the NASA\textsuperscript{9} flight measurements database for evaluation of models.

Main activities by the EMEP centres:

(a) Participate in the TFHTAP model intercomparison for ozone, PM compounds, POPs and heavy metals with the two EMEP global models (MSC-W, MSC-East);
(b) Contribute to the TFHTAP 2010 assessment report on intercontinental transport of air pollution (MSC-E, MSC-W, CIAM, CCC);
(c) New development - integrated EMEP global system: Evaluate the effect of using different geophysical and emission data in the existing global models used at the two meteorological synthesizing centres (MSC-E, MSC-W);
(d) New development - integrated EMEP global system: Evaluate means for the flexible introduction of different meteorological drivers to be used in the common EMEP global model (MSC-E, MSC-W);
(e) New development - integrated EMEP global system: Identify the changes in existing model routines that are necessary to facilitate common modules for global modelling in EMEP (MSC-W, MSC-E);
(f) New developments for global emission data: Evaluate the new EDGAR HTAP global emission data in comparison with other available expert estimates (CEIP, MSC-W, MSC-E).

Main activities by TFHTAP:

(a) Evaluate the developments in the modelling intercomparison for intercontinental transport and trace the progress with the compilation of global emissions and monitoring databases;
(b) Hold a workshop on emission inventories and projections, Hg and POPs, focusing on EECCA countries, tentatively from 1 to 3 April 2009 in Saint Petersburg, Russian Federation;
(c) Hold a joint workshop with TFMM, to be held from 17 to 19 June 2009 in Paris, focusing on regional to global modelling and climate-air quality interactions, including adoption of the TFHTAP workplan for 2010;
(d) Hold its meeting on 19 June 2009 in Paris, and report the outcomes of the meeting and of the workshops to the thirty-third session of the EMEP Steering Body;
(e) Hold a workshop in autumn 2009;
(f) Prepare for the 2010 assessment report on intercontinental transport of air pollution.

\textsuperscript{9} National Aeronautics and Space Administration (United States).
2.5. COOPERATION WITH COUNTRIES IN EASTERN EUROPE, CAUCASUS AND CENTRAL ASIA AND SOUTH-EASTERN EUROPE

Description/objectives: To enhance cooperation with EECCA and SEE countries; to involve them in the activities of the Steering Body to EMEP and provide them assistance, as needed; and to implement the EMEP programme, in particular with a view to obtaining emission data from these countries as well as to establishing monitoring and modelling activities.

Main activities by Parties:

(a) Explore opportunities for providing bilateral assistance to EECCA and SEE countries in the field of emission inventories, monitoring and modelling;
(b) To the extent possible, contribute to financial support of the representatives from EECCA and SEE to the meetings and workshops organized under the Convention;
(c) Seek to take part in the activities of the Steering Body to EMEP, including through active participation in meetings of the Steering Body to EMEP and its task forces, and use every opportunity to voice needs and to seek donor assistance, inter alia, through formulating project proposals for capacity building (EECCA and SEE Parties).

Main activities by the EMEP centres and task forces

(a) In collaboration with the Bureau of the Steering Body to EMEP and the secretariat, carry out a gap analysis in EECCA and SEE through a questionnaire survey assessing the specific needs for assistance and the resources already available;
(b) On the basis of the outcome of the questionnaire survey, prepare, in cooperation with EECCA and SEE countries, an action plan for EMEP, with a time frame and cost estimates for the future steps to be taken;
(c) Explore opportunities for organizing subregional workshops to explain methodologies and to build capacity in emission inventories, monitoring and modelling.

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

3.1 REVIEW OF EFFECTS OF MAJOR AIR POLLUTANTS

Description/objectives: To undertake an annual review of activities and results of the ICPs and the Joint Task Force on the Health Aspects of Air Pollution (Task Force on Health); and to make appropriate reports to the sessions of the Executive Body on the reviews and revisions of Convention’s protocols.
Main activities and time schedule:

(a) Submission of relevant information and reports by ICPs and the Task Force on Health to the secretariat (April/May 2009);

(b) Submission of results to the secretariat for the 2009 joint report of the ICPs, the Task Force on Health and the Joint Expert Group on Dynamic Modelling to the Working Group on Effects (May 2009);

(c) Submission of appropriate reports to the sessions of the Working Group on Effects and the Executive Body;

(d) Activities common to all ICPs, the Task Force on Health and the Joint Expert Group on Dynamic Modelling:

(i) Status report on airborne nitrogen impacts on the environment (in collaboration with the TFRN and TFIAM);

(ii) Compilation report on selected key monitored and modelled parameters, tentatively based on the guidelines on reporting of monitoring and modelling of air pollution effects;

(iii) Report on the update of the strategy of the effects-oriented activities;

(iv) Explore the merits of the different options for target-setting in 2020 and non-binding aspirational targets for the year 2050, in collaboration with the TFIAM and CIAM, and report the results;

(v) Further quantification of policy-relevant effects indicators such as biodiversity change, and to link these indicators to the integrated modelling work, and report the results.

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 economic evaluation of air pollution damage. A Programme Task Force led by Sweden and co-chaired by Italy, in cooperation with the Programme’s main research centre (Corrosion and Metals Research Institute, Stockholm), is responsible for the detailed planning and coordination of the Programme.

Main activities and time schedule:

(a) Report on assessment of stock of materials at risk, including cultural heritage;
(b) Report on combined stock at risk and mapping for selected urban areas of Italy;
(c) Report on the material sample exposure in the biennium 2008–2009;
(d) Report on soiling of exposed materials;
(e) Twenty-fifth meeting of the Programme Task Force, to be held from 1 to 3 April 2009 in Madrid, and its report.

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) Finalize the 20-year report on monitoring effects of air pollution on surface waters in Europe and North America since 1985, including acidification, heavy metals and POPs;
(b) Interim report on assessment of Hg in surface waters, with a focus on Hg from air pollution;
(c) Interim report on nutrient effects of nitrogen deposition to surface waters;
(d) Annual chemical intercomparison (in collaboration with all ICPs);
(e) Annual biological intercalibration (in collaboration with all ICPs);
(f) Twenty-fifth meeting of the Programme Task Force, tentatively scheduled to be held from 19 to 21 October 2009 in Burlington, Canada, and its report.

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 (the 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 will be carried out.

Main activities and time schedule:

(a) Report on trends of soil acidification and eutrophication and links to vegetation effects;
(b) Report on relationships between forest growth, tree crown condition, nitrogen deposition, and other stress factors such as acidification, ground-level ozone and climate;
(c) Report on trends in sulphur and nitrogen deposition;
(d) Twenty-fifth meeting of the Programme Task Force, to be held from 23 to 27 May 2009 in Saint Petersburg, Russian Federation, and its report.

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

Description/objectives: Evaluate the effects of air pollutants and other stresses on (semi-)natural vegetation and crops. For ozone: identify dose-response functions, assess economic losses on crops, validate critical levels for (semi-)natural vegetation and crops and further develop the flux-based approach, and evaluate (semi-)natural vegetation and crops as indicators of potential damage to natural ecosystems. Evaluate and map heavy metal deposition on vegetation. Evaluate 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 (the 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) Report on the risk of damage of ozone to (semi-)natural vegetation communities in Europe;
(b) Report on flux-based assessment of risk of damage of ozone to managed pastures in Europe;
(c) Report on ozone exposure and impacts on vegetation in the Nordic countries and the Baltic States;
(d) Report on the temporal trends in heavy metal concentrations in mosses between 1990 and 2005;
(e) Report on the spatial variation in heavy metal and nitrogen concentrations in mosses;
(f) Twenty-second meeting of the Programme Task Force, to be held from 2 to 5 February 2009 in Braunschweig, Germany, and its report.

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) Interim report on updated heavy metal budgets and critical loads at integrated monitoring sites;
(b) Interim report on the calculation of critical loads for acidification and eutrophication for terrestrial and aquatic ecosystems;
(c) Report on trends of sulphur and nitrogen deposition and links to chemical and biological effects;
(d) Seventeenth meeting of the Programme Task Force, to be held from 6 to 8 May 2009 in Tallinn, and its report.

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

Description/objectives: Determine critical loads and levels and their exceedances for selected pollutants. Develop and apply other methods for effects-based approaches such as dynamic modelling. Model and map the present status of 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 available and accepted data drawing on the work of other task forces, ICPs and EMEP. CCE (at the Netherlands Environmental Assessment Agency, Bilthoven, Netherlands) provides scientific and technical support to the Task Force and to other effects-related activities. It develops methods and models for calculating critical loads and levels and for other effects-based approaches. It produces maps of critical loads and levels and their exceedance as well as other risk parameters related to potential damage and recovery.
Main activities and time schedule:

(a) Report on transferring data on critical loads for acidification and eutrophication in the GAINS model to support the work on revising air pollution policies in Europe (in collaboration with CIAM);
(b) Report on applications of the critical load database for European ecosystems, including the Natura 2000 areas of the European Union, to support the work on revising air pollution policies in Europe (in collaboration with CIAM);
(c) Report on dynamic modelling of biogeochemical processes and on air pollution effects on biological diversity;
(d) Report on robustness analysis on the use of critical loads of acidity and nutrient nitrogen in integrated assessment modelling;
(e) Twenty-fifth meeting of the Programme Task Force and nineteenth workshop of the CCE, to be held from 11 to 15 May 2009 in Stockholm, and their reports.

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 and technical reports to the Working Group on Effects, so that the 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 and 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 the 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) Annual progress report on health impacts of PM;
(b) Report on health impacts of ozone;
(c) Interim report on health impacts due to biomass combustion;
(d) Report on health relevance of pollution alert systems;
(e) Draft guidelines for reporting on monitoring and modelling of health effects of air pollution;
(f) Twelfth meeting of the Task Force on Health, to be held on 25 and 26 May 2009 in Bonn, Germany, and its report.

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. The 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) Discussion of the results of the 2007/2008 call for data by CCE to the national focal centres of ICP Modelling and Mapping;
   (b) Reports on dynamic modelling of nutrient nitrogen in terrestrial systems, interactions between air pollution and climate change, biological response including biological diversity and terrestrial carbon sequestration;
   (c) Contribution to the revision of the Gothenburg Protocol;
   (d) Report of the ninth meeting of the Joint Expert Group to the twenty-eighth session of the Working Group on Effects;
   (e) Tenth meeting of the Joint Expert Group on Dynamic Modelling, to be held from 28 to 30 October 2009 in Sitges, Spain, and its report.
Annex

CALENDAR OF MEETINGS FOR 2009

Major bodies under the Convention

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<thead>
<tr>
<th>Date and venue</th>
<th>Body and session/meeting</th>
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<tr>
<td>31 March – 2 April 2009 London</td>
<td>Implementation Committee (twenty-third meeting)</td>
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<tr>
<td>20–23 April 2009 Geneva</td>
<td>Working Group on Strategies and Review (forty-fourth session)</td>
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<tr>
<td>31 August–4 September 2009 Geneva</td>
<td>Working Group on Strategies and Review (forty-fifth session)</td>
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<tr>
<td>7–9 September 2009 Geneva</td>
<td>EMEP Steering Body (thirty-third session)</td>
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<tr>
<td>22–24 September 2009 Geneva</td>
<td>Implementation Committee (twenty-fourth meeting)</td>
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<tr>
<td>14–18 December 2009 Geneva</td>
<td>Executive Body for the Convention (twenty-seventh session)</td>
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Task forces, expert groups and workshops

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<tr>
<td>2–5 February 2009 Braunschweig, Germany</td>
<td>Programme Task Force, International Cooperative Programme (ICP) on Effects of Air Pollution on Natural Vegetation and Crops (twenty-second meeting)</td>
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<td>23–25 February 2009 Laxenburg, Austria</td>
<td>Tutorial workshop on the GAINS model (for the countries in Eastern Europe, the Caucasus, Central Asia and South-Eastern Europe) (Task Force on Integrated Assessment Modelling in collaboration with the Centre for Integrated Assessment Modelling)</td>
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<tr>
<td>5–6 March 2009 Utrecht, the Netherlands</td>
<td>Workshop on non-binding aspirational targets for air pollution for the year 2050 (Task Force on Integrated Assessment Modelling)</td>
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<td>1–3 April 2009 Saint Petersburg, Russian Federation</td>
<td>Workshop on focusing on Eastern Europe, Central Asia and the Arctic (Task Force on Hemispheric Transport of Air Pollution)</td>
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<tr>
<td>1–3 April 2009 Madrid (tentative)</td>
<td>Programme Task Force, ICP on Effects of Air Pollution on Materials, Including Historic and Cultural Monuments (twenty-fifth meeting)</td>
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<td>6–7 April 2009 Rome</td>
<td>Expert Group on Techno-economic Issues (fifteenth meeting)</td>
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<tr>
<td>28–29 April 2009 Garmisch-Partenkirchen, Germany</td>
<td>Task Force on Reactive Nitrogen (second meeting)</td>
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