



**Economic and Social
Council**

Distr.
GENERAL

ECE/EB.AIR/WG.1/2007/16
ECE/EB.AIR/GE.1/2007/5
ECE/EB.AIR/WG.5/2007/9
13 June 2007

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

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

Working Group on Effects
Twenty-sixth session
Geneva, 29-31 August 2007
Item 4 of the provisional agenda*

Steering Body to the Cooperative Programme for Monitoring and
Evaluation of the Long-range Transmission of Air Pollutants in Europe (EMEP)
Thirty-first session
Geneva, 3-5 September 2007
Item 3 of the provisional agenda**

Working Group on Strategies and Review
Fortieth session
Geneva, 17-20 September 2007
Item 3 of the provisional agenda***

**GOTHENBURG WORKSHOP ON AIR POLLUTION AND ITS RELATIONS TO
CLIMATE CHANGE AND SUSTAINABLE DEVELOPMENT**

Report by the organizers of the workshop****

* ECE/EB.AIR/WG.1/2007/1

** ECE/EB.AIR/GE.1/2007/1

*** ECE/EB.AIR/WG.5/87

**** By tradition, the Convention has used the term "organizers" to indicate the nationally appointed rapporteurs who report workshop results.

SUMMARY

The workshop on air pollution and its relations to climate change and sustainable development, held in Gothenburg, Sweden, from 12 to 14 March 2007, was the third of a series held since 2000 aiming to take a long-term strategic look at air pollution abatement strategies in the UNECE region. While a main focus was on climate change links and synergies, the scope of the deliberations encompassed all areas of work under the Convention on Long-range Transboundary Air Pollution. The various discussion working groups drew up, between them, a comprehensive list of conclusions and recommendations for further consideration by the Convention's bodies. The main subsidiary bodies are expected to take account of the conclusions when planning their proposals for future work, and make recommendations to the Executive Body regarding implementation of agreed actions.

1. Air quality is a common issue of large concern all over the world. Threats to health and ecosystems have initiated policy measures ranging in scale from local to international. Though significant steps have been taken in many countries, the problems are not solved and are also increasing in many areas.
2. In 2000, Sweden, through its ASTA¹ research programme, organized a workshop directed towards future needs in air pollution strategies in view of the recently signed Gothenburg Protocol and the corresponding process under the European Commission. The outcome of the workshop contained conclusions and recommendations that served as guidelines for further scientific and policy work. In 2004, a follow-up workshop was held, at which further developments in science and policy were evaluated in view of expected policy recommendations.
3. The third workshop in the series was held in Gothenburg, Sweden, from 12 to 14 March 2007. It was attended by 190 policymakers, scientists, experts and stakeholders from the following 30 Parties to the Convention: Austria, Belarus, Belgium, Bulgaria, Canada, the Czech Republic, Denmark, Estonia, the European Community, Finland, France, Georgia, Germany, Hungary, Ireland, Italy, the Netherlands, Norway, Poland, Portugal, the Russian Federation, Serbia, Slovenia, Spain, Sweden, Switzerland, Turkey, Ukraine, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. In addition, participants from the following countries outside the UNECE region attended: Brazil, India, Japan, Nepal, Philippines, Zambia and Zimbabwe. Representatives of the European Commission, the European Environment Agency, the United Nations Environment Programme Regional Resource Centre

¹ International and National Abatement Strategies for Transboundary Air Pollution

for Asia and the Pacific, the Clean Air Initiative for Asian Cities and the Clean Air Initiative for Latin American Cities also attended. The UNECE secretariat was also represented.

4. The workshop was organized by the Swedish ASTA programme in collaboration with the Bureau of the Executive Body of the Convention, the European Commission and the European Union (EU) Atmospheric Composition Change European Network of Excellence (ACCENT) programme. The Mistra² Foundation, the Nordic Council of Ministers and the Swedish Environmental Protection Agency contributed financial support.

5. This report provides a summary of the scope of the workshop together with its main conclusions and recommendations. The full report and further details of the workshop, including plenary and working group presentations, are available at <http://asta.ivl.se>.

I. SCOPE AND ORGANIZATION

6. The scope of the workshop was to elaborate scientific and policy needs in order to solve air pollution problems in both the short and long term. In particular, the workshop considered:

- (a) Linkages between air pollution and greenhouse gas policies;
- (b) The scientific understanding of air pollution policies in relation to the Convention and the EU Clean Air for Europe (CAFÉ) programme;
- (c) Influences from climate change on air pollution and its effects, and air pollution feedbacks to climate change;
- (d) Intercontinental transport of air pollution and the possible development of a hemispheric approach to air pollution policies;
- (e) The importance of, and policy needs with respect to, emissions from shipping;
- (f) The importance and policy needs for nitrogen;
- (g) The involvement of countries with economies in transition in the further development of air pollution policies;

² Swedish Foundation for Strategic Environmental Research

(h) The further development of international regimes (in particular the Convention) in relation to new air pollution challenges.

7. The workshop comprised a series of plenary lectures giving the framework of the meeting, followed by eight parallel working group sessions on the eight scope themes above. Each working group had the objective of discussing present knowledge and arriving at conclusions and recommendations on ways forward. The recommendations included suggestions on which communities should take responsibility for action. The reports from each of the working groups and other material from the workshop can be found at <http://asta.ivl.se>.

II. WORKSHOP CONCLUSIONS AND RECOMMENDATIONS

A. Linking air pollution and policy issues

8. The workshop noted there were currently a small but increasing number of initiatives in the world aimed at combining air pollution and climate change policies (e.g. a few States of the United States, the European Commission and some EU Member States). The benefits of combined policies were obvious in terms of achieving combined improvements at less cost. The possibilities for combined control policies on air pollution and climate change were however poorly considered, all the way from local measures to the development of new international frameworks and agendas within the international United Nations Framework Convention on Climate Change (UNFCCC) system.

9. Present air pollution policies were, to a large extent, directed towards technical measures. Such measures were applied in Europe through EU legislation (EU Directives on Integrated Pollution Prevention and Control, Large Combustion Plants and Mobile Sources) and they covered many of the main sources. Even if there were room for improvement with respect to technical measures, there was also an increasing need to consider other measures mainly influencing the activities leading to emissions, often referred to as non-technical measures (NTM). In view of the development of climate change policies, these measures had become increasingly important.

1. Conclusions

10. The workshop agreed:

(a) There was increasing evidence that there were large benefits (costs versus environmental and climate benefits) in linking air pollution and climate change policies;

(b) It was important to look at policies beyond 2020, since decisions taken today would influence emissions of air pollution and greenhouse gases for several decades;

(c) There was a danger in not linking the policy processes to thorough assessments, i.e. not promoting synergies and not identifying trade-offs; for example, the air pollution implications of carbon capture and storage (CCS) and integrated gasification combined cycle (IGCC) technologies needed to be looked into;

(d) There was a commonly held perception that we tend to systematically underestimate the benefits and overestimate the costs of environmental policy measures.

2. Recommendations

11. For better development and implementation of linked air pollution and climate change policies, the workshop recommended:

(a) Focusing on early identification of synergies and trade-offs between air quality and climate change policies and measures (Action: Parties, EU, Task Force on Integrated Assessment Modelling, Working Group on Strategies and Review, scientific community);

(b) Using combined air pollution/climate change policies at the local, country and EU levels; combined strategies should be considered with some caution at the regional (Convention) and global levels (Action: Parties, EU);

(c) Promoting the development of integrated assessment tools for combined strategies, taking into account the importance of balancing the complexity of introducing more information into the models/tools against the benefits (Action: Task Force on Integrated Assessment Modelling, EU);

(d) Investigating possibilities to use new innovative solutions (e.g. urban planning and agricultural practices), in particular in the developing countries (Action: Parties and the scientific community);

(e) Promoting further investigations and exchange of experience from the use of economic instruments in combined strategies (Action: Task Force on Integrated Assessment Modelling, EU, Expert Group on Techno-economic Issues);

(f) Improving our understanding of the socio-economic aspects and possibilities in the view of increasing demands for measures influencing ways of living; considering the need for a new expert group or task force under the Convention (Action: Convention, EU Framework Programme 7 (FP7), EU);

(g) Considering climate and air pollution consequences of further liberalization of markets (e.g. energy, needs for transportation etc.) (Action: EU, Expert Group on Techno-economic Issues);

(h) Developing common data sources for air pollution and climate change in support of policies (e.g. emissions, activity levels, control costs etc.) (Action: EMEP, Working Group on Strategies and Review, Task Force on Integrated Assessment Modelling, European Commission's Joint Research Centre (JRC), the scientific community);

(i) Considering other aspects such as energy security, competitiveness, public health etc. in relation to the environmental drivers (Action: Convention, Commission on Sustainable Development);

(j) Considering, in particular, the developing countries, in which environmental policies may be in a different stage (Action: Convention; United Nations Environment Programme; other regional initiatives, e.g. the Malé Declaration).

B. Linking air pollution and greenhouse gas policies - scientific issues

12. The workshop recognized air pollution problems were, in addition to emissions, to a large extent dependent on weather patterns and climate. Changes in climate would thus potentially cause changes in the behaviour of atmospheric pollutants as well as their effects. Climate change might also change emissions such as volatile organic compounds (VOCs) from vegetation, sea salt spray, etc. In addition, changes in air pollution emissions might influence regional climate development, in particular through particulate matter (PM).

13. The climate change community had focused up to now on how weather elements would change with time and location as a consequence of increasing radiative forcing from greenhouse gas and PM concentration changes. In addition, the climate change community had focused on the societal implications of a changed climate, but until now air quality had not usually been part of the picture.

1. Conclusions

14. The workshop concluded that:

(a) Future revisions of international air quality legislation (e.g. the EU National Emissions Ceilings Directive and the 1999 Gothenburg Protocol) should take climate change into account – both in terms of goal-setting and accounting for how climate change contributed to air quality changes, as well as how air quality changes contributed to regional climate change;

(b) Climate change measures included important air quality parameters, so the outcomes of air quality measures and climate change measures need to be considered simultaneously;

(c) The scientific community should quantify the air quality-climate change relationships.

2. Recommendations

15. The workshop recommended:

(a) Integrating climate change and air quality communities with respect to scientific research, monitoring and modelling (Action: EMEP; Intergovernmental Panel on Climate Change (IPCC), with support from the Convention and UNFCCC);

(b) Exploring climate/air pollution observations further through joint evaluations of long term data; integrating air quality observations and meteorological observations to improve the information and evaluation capabilities (Action: Convention, EMEP, European Commission, IPCC);

(c) Establishing a joint assessment through IPCC and a global air quality body (Action: the Convention with other regions to create a global body rooted in the science-policy arena);

(d) Developing coupled climate-chemistry models that can consider relevant air quality aspects; an important milestone would be the next IPCC assessment, which is expected to start its work in 2009 (Action: EMEP, IPCC, International Geosphere-Biosphere Programme, World Climate Research Programme, World Meteorological Organization, the scientific community);

(e) Promoting research agendas (in particular within the EU FP7 to include linked aspects between air quality and climate change) (Action: European Commission, national experts and delegates);

(f) Publishing findings of air quality-climate change interlinkages in publications that are a common ground for both air quality and climate change research communities (Action: the scientific community);

(g) Harmonizing emission estimates and scenarios for greenhouse gases and atmospheric pollution, in particular beyond 2020. With climate and air quality models being coupled, the demand for resolution of emission estimates would be increasing (Action: Task Force on Emission Inventories and Projections, Task Force on Integrated Assessment Modelling, EU, UNFCCC, IPCC, JRC).

C. Effects of air pollution and linkages to climate change

16. The workshop noted that air pollution policies under the Convention and EU were unique in the sense that emission control requirements were related to quantitative estimates of decreased effects. The science of air pollution effects was well advanced in general and had proved useful for policy purposes. However, uncertainties existed in specific areas. Interactions with climate change would add complexity to the effects estimates, since many biological processes were climate dependent.

1. Conclusions

17. The workshop concluded that:

(a) Models were essential to interpret and predict the direction and rate of air pollution and climate change effects;

(b) Due to the complexity of response between the nitrogen and carbon cycles and soils and vegetation, there was a strong need for improved integration of monitoring that combined receptor responses and the development of ecosystem modelling;

(c) Multi-factor experiments were needed to test and help develop models for ecosystem responses to deposition of atmospheric pollutants;

(d) There was a strong need to get better access to datasets on changes in spatial patterns of land cover and agricultural practices;

(e) The complexity of interactions between climate, ozone, elevated CO₂ and other pollutants required large-scale and long-term experiments to resolve them;

(f) Increased wind speeds in Northern Europe would increase the importance of resuspension of surface derived aerosols. It would therefore increase suspended PM levels, thus making it harder to meet air quality guidelines with anthropogenic emission controls;

(g) The risk for boreal forest fire frequency was expected to increase (along with biomass fires at all latitudes), which would increase human health risks through exposure to higher PM levels.

2. Recommendations

18. The workshop recommended:

Acidification and nutrient nitrogen (see also under Nitrogen below)

(a) Integrating ongoing ecosystem monitoring and modelling and initiating multi-factorial ecosystem experiments and model development in order to further elaborate our understanding of acidification and nutrient processes under climate change and more intense land use (Action: Working Group on Effects, International Cooperative Programme (ICP) Forests, ICP Waters, ICP Modelling and Mapping, ICP Integrated Monitoring, ICP Materials, Joint Expert Group on Dynamic Modelling);

Ozone

(b) Developing and establishing monitoring systems capable of detecting and quantifying changes in (semi-)natural vegetation at the ecosystem and regional scale, together with multi-factor analysis to quantify ozone impacts (Action: Working Group on Effects, ICP Forests, ICP Vegetation and the science community);

(c) Investigating the combined impacts of ozone and climate change on the distribution of (semi-)natural vegetation, and on choosing crop and tree species and cultivars (Action: the scientific community, FP7);

(d) Further developing flux modelling methods to include CO₂, meteorological parameters and climate-dependent plant factors (Action: the scientific community, FP7);

(e) Developing dynamic modelling of ozone interactions in a changing climate (Action: the scientific community, FP7);

(f) Investigating feedback mechanisms for climate (e.g. potential of reduced stomatal flux of ozone to increase ozone-induced radiative forcing, ozone-induced reduction in carbon sequestration, etc.) (Action: the scientific community, FP7);

Particulate matter

(g) Investigating the consequences of increased boreal forest fire frequency (Action: the scientific community, FP7, EMEP);

(h) Investigating how changes in land cover due to climate change may influence wind-driven emissions of PM. (Action: the scientific community, FP7, EMEP);

Heavy metals and persistent organic pollutants (POPs)

(i) Reconciling heavy metals emission inventories and observed concentrations and deposition in Europe (Action: EMEP Meteorological Synthesizing Centre East (MSC-E), the Task Force on Emission Inventories and Projections, EMEP);

(j) Further improving joint efforts to understand and quantify the global cycle of mercury, which was a remaining problem (Action: EMEP, MSC-E, Task Force on Hemispheric Transport of Air Pollution, the scientific community);

(k) Quantifying the climate change feedbacks in POPs mobilization, transport and effects in the Arctic (Action: MSC-E, EMEP, the scientific community).

D. Nitrogen

19. The workshop recognized that fixed or reactive nitrogen was of increasing environmental concern. At the same time as it was a prerequisite for life and our supply of food, it was also causing a series of environmental threats and damage on local, regional and global levels. There were several research and scientific assessment initiatives with respect to nitrogen. There was, however, a lack of policy arenas able to take a wider perspective on nitrogen. At the workshop the possibility of adopting such a wider view in support of policy development was considered.

1. Conclusions

20. The workshop concluded:

(a) Presently, there were several science-driven international initiatives and activities (International Nitrogen Initiative (INI), the European Science Foundation (ESF) Nitrogen in the Environment (NinE) research networking programme and COST 729 programme, the EU Nitrogen in Europe (NitroEurope) project, etc.) set up in order to form a holistic approach on nitrogen;

(b) There were also upcoming policy demands; in addition to those related to the various effects of the nitrogen cascade, which included needs for more intense use of ecosystems for food and energy production as well as the need for revising decisions on existing agreements (e.g. for the EU agricultural sector);

(c) A holistic approach to policy development might help policymakers to include a wider set of aspects in these decisions than was normally being done;

(d) Since several of the nitrogen problems were related to atmospheric emissions, the workshop considered the Convention to be a suitable arena for further science-based policy development.

2. Recommendations

21. An overall recommendation from the workshop was that the Convention should take a leading role in using the outcome of ongoing assessments and should further investigate how a holistic policy approach could be developed. In addition, more specifically, the workshop recommended:

(a) Establishing an expert group on nitrogen under the Convention to provide a framework on integrated nitrogen approaches and policy options (Action: Executive Body, Working Group on Strategies and Review, Task Force on Integrated Assessment Modelling);

(b) Enhancing integration and synergies between the existing bodies of the Convention relevant to the nitrogen issue (Action: Executive Body);

(c) Drawing from, and linking to, other conventions (e.g. UNECE Water Convention, Convention on Biological Diversity, UNFCCC, UNECE Environmental Impact Assessment

Convention), for example, by establishing an inter-convention working group (Action: Executive Body, EMEP, Working Group on Effects);

(d) Exploring the possibilities for an integrated nitrogen protocol, possibly jointly with other UNECE conventions. (Action: Working Group on Strategies and Review, Task Force on Integrated Assessment Modelling);

(e) Establishing a stronger link with agricultural stakeholders (Food and Agriculture Organization of the United Nations (FAO), European Commission Directorate General Agriculture and Rural Development, International Fertilizer Industry Association, etc) and effects-related stakeholders (Action: EU CAFÉ programme, Task Force on Integrated Assessment Modelling);

(f) Utilizing the knowledge, concepts, etc. developed within science-driven initiatives and projects (INI, EU NitroEurope and ACCENT projects, ESF NinE and COST729 programmes, etc.) (Action: EMEP, Working Group on Effects, Task Force on Integrated Assessment Modelling);

(g) Developing a monitoring framework for a holistic approach to nitrogen (following the nitrogen fluxes and establishing systems for biomonitoring) (Action: EMEP, Working Group on Effects);

(h) Developing integrated assessment approaches (e.g. based on the RAINS/GAINS model) to include the wider scope of nitrogen effects (Action: Task Force on Integrated Assessment Modelling, Centre for Integrated assessment Modelling (CIAM), ESF COST729 programme);

(i) Including the agricultural-food chain in the development of “soft” measures (Action: CAFE);

(j) Identifying combinations of specific receptors unique to nitrogen effects (Action: scientific community, FP7).

E. Further development of control options - emerging technologies

22. The workshop recognized that environmental negotiations, commitments and measures were crucially dependent on the availability of cost-efficient technologies. Investments in research and development in new technologies and incentives for implementation of these

technologies were therefore crucial factors for successful policy development. For air pollution, policy demands had been able to be met in most cases with relevant technical solutions. Turning interests from handling air pollution and climate change as separate problems towards integrated approaches would influence the agenda for technological development and, to some extent, change priorities in implementing forthcoming measures.

23. In addition to the development of control technologies, future policies would also require actions that were not associated with industrial technologies but rather with changes in activities generating emissions.

24. At the workshop, issues related to future development of control options were discussed in particular in relation to the energy sector, but also, to some extent, in relation to land transport (road and rail). The discussions focused both on short-term and long-term needs and possibilities.

1. Conclusions

25. The workshop concluded that:

- (a) Long-term perspectives in policy development and commitments were important drivers for technology development;
- (b) The air pollution policy development had benefited from its basis in cost-efficiency;
- (c) Much of the EU legislation on energy and land transport was in place, but better coherence was needed;
- (d) New technologies needed to be framed in economic terms (cost-efficiency);
- (e) There were new technologies that might become pitfalls without a holistic (lifecycle) view on their performance;
- (f) More cooperation between UNFCCC and the Convention on scenario and technology development was needed to exploit win-win situations and avoid pitfalls.

2. Recommendations

26. The workshop recommended:

- (a) Investigating new technologies in a wider perspective including other environmental aspects and their economy in a lifecycle perspective (Action: EU);
- (b) Reviewing the control of emissions from biofuels (Action: EU);
- (c) Clarifying the effects on (baseline) scenarios from new EU energy policies (Action: EU);
- (d) Including the effects from the IPPC review (Action: EU);
- (e) Revising the agenda of the Expert Group on Techno-economic Issues to include combined air pollution and climate change options and use the Expert Group more actively in the analyses of new technologies and their costs (Action: Parties, Expert Group on Techno-economic Issues);
- (f) Increasing the profile of new technologies to high political levels in order to ensure breakthroughs (Action: Parties);
- (g) Developing and establishing databases on NTMs including their costs, experiences in performance and encouraging integration of these measures in integrated assessment models (Action: Executive Body, Task Force on Integrated Assessment Modelling, CIAM);
- (h) Improving quality and legitimacy of integrated assessment models through systematic review and using the outcome of RAINS/GAINS model reviews for further development and priority-setting in integrated assessment modelling;
- (i) Improving the basis for cost-benefit analysis (Action: Expert Group on Techno-economic Issues);
- (j) Establishing long-term visions and goals to improve industry's forward planning (Action: Parties, EU);
- (k) Promoting investment support to forerunners (Action: Parties, EU);

(l) Improving combined databases on costs for climate change and air pollution (Action: Expert Group on Techno-economic Issues, Task Force on Integrated Assessment Modelling, CIAM, JRC, Parties);

(m) Investigating, in more detail, performance, costs and applicability of non-technical measures in order to get them included in integrated assessment models and cost-effective policies; developing methods for quantification of welfare impacts (employment, competitiveness, income levels etc.) (Action: Parties, the scientific community);

(n) Establishing a system for review of energy, transportation and agriculture scenario models (Action: the scientific community, the EU);

(o) Encouraging greater integration of non-technical measures into integrated assessment models (e.g. GAINS) (Action: CIAM, research communities).

F. Shipping and Air Traffic

27. The workshop noted that international shipping was contributing significantly to air pollution damage to health and the environment. While emissions from most land-based emission sources had fallen in Europe and North America and were expected to continue to decline, those from shipping were steadily increasing. Emissions of sulphur dioxide (SO₂) and nitrogen oxides (NO_x) from international shipping around the EU were estimated to increase by about 45% from 2000 to 2020. Even if there were increasing concerns over the emissions as a significant source and there were cost-effective techniques to reduce emissions, there would be obstacles on the policy side due to difficulties in reaching agreements within the main international body, the International Maritime Organization (IMO).

28. Air traffic was another significant source; atmospheric emissions from this were steadily increasing at a current rate of about 5% per year.

1. Conclusions

29. The workshop concluded that:

(a) As a result of the expected growth (about 4% annually) in shipping and associated emissions, in order just to maintain the 2002 level of emissions there was a need to reduce fleet-wide average emissions by at least 60% by 2025 and by at least 85% by 2050;

(b) Shipping was contributing to air pollution on local (e.g. in port areas), regional and global scales and also had an impact on climate. All scales were important and impacts should be considered together in order to set the right priorities for abatement;

(c) Historically, developments in IMO had been very slow, and measures agreed so far had been inadequate to solve the problem. Therefore, unilateral action (for example, by the EU and/or the United States) was needed to push – but not replace – action in IMO;

(d) As agreements on, and introduction of, new or stricter legally binding emission requirements usually take some time, economic instruments could be used to promote faster emission reductions. Such instruments could also be used to complement binding standards and promote additional emission reductions beyond the minimum requirements.

2. Recommendations

30. In order to reduce emissions from shipping, the workshop recommended that:

(a) The EU and/or the United States should take unilateral (or bilateral) action and introduce measures to reduce emissions from shipping (Action: Parties, EU, Executive Body, IMO);

(b) Such action should be accompanied by initiatives aimed at agreement within IMO to significantly strengthen MARPOL, Annex VI, short-, medium- and long-term ambitions. As short-term ambition levels the following recommendations were given:

- (i) Lower the allowed fuel sulphur level from 1.5% to 0.5% in Sulphur Emission Control Areas (SECAs) and expand the SECA programme to cover more areas;
- (ii) Introduce stricter NO_x standards for new engines;
- (iii) Introduce PM standards for new engines;
- (iv) Retrofit NO_x reduction equipment (selective catalytic reduction) to existing engines;

(c) For the medium-term, requirements should be made for 0.5% sulphur fuel globally and a reduction of emissions of NO_x and PM by at least 95%;

(d) Individual countries and/or the EU should introduce economic instruments to promote early and additional emission reductions (Action: Parties, EU). Such instruments could include:

- (i) Environmentally differentiated port and fairway dues;
- (ii) Environmentally differentiated en-route charging;
- (iii) Emission charges/taxes;
- (iv) Emissions trading.

G. Future Development of the Convention

31. The workshop agreed that the Convention was facing new challenges. From an internal perspective, the expanding EU covered an increasing part of Europe that was the heart of the Convention system. Its policy role was therefore under reconsideration and more emphasis was being placed on including countries of Eastern Europe, the Caucasus and Central Asia (EECCA) as well as on looking into the possibility of expanding the Convention area, for example, for collaboration on policy development in relation to intercontinental transport. Possible development of common policies on a global or hemispheric scale was also under consideration. The interaction with climate change and climate change policies also added new challenges. In all this, it was important to maintain the Convention's strength and to further develop its basis for success; strong dependence in scientific research, monitoring and modelling and forming policies on effects-based, cost-effective approaches.

32. Some of the conclusions and recommendations related to future challenges for the Convention are covered elsewhere in the report under other chapters (climate change, EECCA, nitrogen, shipping etc.). The conclusions and recommendations below mainly relate more generally to the Convention's role as a policy-forming international organization.

1. Conclusions

33. The workshop concluded the Convention had shown a large number of strengths. In particular, it had:

(a) A strong position as a supplier of the scientific basis for the different protocols as well as for other international agreements and national legislations;

(b) Shown a high degree of flexibility in addressing a greater number of pollutants and effects as well as in developing and accommodating different approaches for international agreements (e.g. the effect-based approach);

(c) A strong institutional structure set up on a long-term basis with the ability to adapt according to changing environmental priorities;

- (d) Assured compliance with the protocols through its Implementation Committee;
- (e) Brought together policy and technical experts from the countries and individual experts from a wide range of institutions;
- (f) Served as an example for similar arrangements in other regions;
- (g) Kept a high degree of commitment through differentiated responsibilities and obligations.

34. The workshop noted, however, that the Convention had a number of weaknesses, in particular its:

- (a) Limited financial mechanisms to assist with ratification and implementation;
- (b) Different goals and approaches, which might create confusion at the political level and might be confusing to the public;
- (c) Lack of full commitment from all Parties;
- (d) Major focus on transboundary air pollution problems and not on local or urban problems;
- (e) Lack of penalties for failing to comply with the protocols;
- (f) Limited resources for outreach activities.

2. Recommendations

35. The workshop recommended that the Convention should:

- (a) Maintain the active geographic coverage of the Convention, for example, by providing technical assistance to EECCA and South-Eastern European (SEE) countries in implementing the Convention;
- (b) Maintain and further promote the involvement of the scientific community in the development of strategies and in policy assessments;

- (c) Address local air pollution problems within the UNECE region;
- (d) Consider the additional issues in relation to the Task Force on Hemispheric Transport of Air Pollution concerning environmental health effects and possible policy pathways;
- (e) Continue the programme of assessing hemispheric and intercontinental transport;
- (f) Prepare an assessment of the total air pollution impact of shipping on air pollution and climate (Action: Executive Body, EMEP);
- (g) Continue the work on effects-based approaches for policy development including, in particular, dynamic aspects, climate change and the formulation of environmental targets;
- (h) Continue the work with the World Health Organization to improve the scientific basis associated with health effects;
- (i) Consider the revision of the Gothenburg Protocol in a context of short-term (2020) and long-term (2050) time frames, including the links with climate change and policies to reduce greenhouse gas emissions;
- (j) Consider developing a common framework between the Convention and other regional agreements;
- (k) Provide technical assistance to non-UNECE countries to supplement their efforts in addressing air pollution;
- (l) Further develop cooperation with other relevant regional and global programmes and networks beyond UNECE, including UNFCCC and the Global Atmospheric Pollution Forum;
- (m) Reassess the deployment of resources within the Convention in the light of changing priorities.

H. Closer involvement of EECCA countries in the Convention processes

1. Conclusions

36. The workshop noted that most EECCA countries were Parties to the Convention. Their role in the participation and development of agreements under the Convention and its protocols was becoming increasingly important in relation to the corresponding development within the EU and elsewhere in the world. At the workshop, obstacles for achieving larger interest in air pollution and air pollution measures within these countries, and the role of the Convention in such a process, were discussed. Through these discussions, it was realized that there was a need for support directed to air pollution problems and challenges in the EECCA countries and a more active involvement of these countries in the Convention and other international air pollution initiatives.

37. The workshop concluded that there was a need to revise the Action Plan for the EECCA countries. Such a plan should include elements from the recommendations below.

2. Recommendations

38. The workshop recommended that the political profile of Convention activities should be raised through the following:

(a) A high-level meeting on transboundary pollution; it was suggested that such a meeting could be held in 2009 in connection with the 30th anniversary of the Convention (Action: Executive Body, EECCA countries);

(b) Considering the possible co-benefits from climate change policies in the development and implementation of air pollution measures (Action: Executive Body, EECCA countries);

(c) Initiating studies on health and environmental effects and considering these effects in the development of abatement strategies (Action: Executive Body, EECCA countries);

(d) Highlighting the importance of small particles (in particular PM_{2.5} and PM₁₀) (Action: Executive Body, EECCA countries);

(e) Highlight the high benefit-to-costs ratio for air pollution measures (Action: Executive Body, EECCA countries).

39. Ratification of the protocols, in particular the EMEP Protocol, the Protocol on Heavy Metals, the Protocol on POPs and the 1999 Gothenburg Protocol, should be facilitated through:

(a) Developing a ratification process with recommended technical annexes or flexible time schedules for compliance (Action: Working Group on Strategies and Review, Executive Body);

(b) Using the EMEP Protocol as an important first step for all countries (Action: EECCA countries);

(c) Supporting EECCA countries in the ratification processes (Belarus was preparing for ratification of the 1994 Protocol on Sulphur and the Protocol on VOCs – technical support was needed) (Action: Convention secretariat, donors);

(d) Using linkages from the ratification of the Stockholm Convention to help ratification of the Protocol on POPs. (Action: Convention secretariat, EECCA countries);

(e) Analysing the option of applying the pollution emissions management area (PEMA) of the 1999 Gothenburg Protocol (Action: EECCA countries).

40. The revision of the Gothenburg Protocol should be supported through:

(a) Practical, methodological support and capacity-building (including assessment of resources needed) for the establishment of new stations and programmes in relation to EMEP and the Working Group on Effects activities (Action: EECCA countries, CCC, donors);

(b) Provision of emission data (Action: EECCA countries);

(c) An extended EMEP modelling domain. (Action: MSC-East, EMEP Meteorological Synthesizing Centre West)

41. In addition, the workshop recommended that:

(a) More material should be made available in Russian, as there was a need to use the Russian language (Action: Executive Body, Convention secretariat, EECCA countries);

(b) Joint activities/workshops should be organized for EECCA countries on important technical issues like emission inventories, PM measurements, ecosystem monitoring, emission monitoring etc.; such activities/workshops should include both decision-makers and specialists (Action: Executive Body, Convention secretariat, EECCA countries);

(c) MSC-E should be used as a facilitator in the implementation of the Convention Action Plan for EECCA.
