European Environment and Health Committee



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Report on the 19th meeting* of the European Environment and Health Committee Copenhagen, 2 - 3 June 2005

with a focus on

"CEHAPE Regional Priority Goal 3: Preventing and reducing respiratory disease due to outdoor and indoor air pollution"

Dates to remember:

- 1. Workshop on a strategy for youth participation, Dublin, Ireland, 27-28 September 2005.
- 2. Second meeting of the CEHAPE Task Force, Edinburgh, United Kingdom, 20-21 October 2005.
- 3. 20th meeting of the EEHC, Helsinki, Finland, 12-13 December 2005, with a focus on Regional Priority Goal 4 preventing/reducing disease and disability from exposure to hazardous chemicals, physical and biological agents, and hazardous working environments.
- 4. 21st meeting of the EEHC, Norway, spring 2006, with a focus on Regional Priority Goal 2 preventing/reducing health consequences of accidents and injuries.

*This meeting was originally numbered as the second meeting of the EEHC since its renewed mandate at the Fourth Ministerial Conference on Environment and Health in 2004. The EEHC decided at this meeting to number its meetings consecutively from its establishment in 1995 in order to reflect better its history.



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1. Introduction

The 19th session of the European Environment and Health Committee (EEHC) convened in Copenhagen from 2 – 3 June 2005, hosted by the European Environment Agency (EEA). The meeting was divided into two major parts. The morning of 2 June and the afternoon of 3 June were operational sessions of the EEHC, to which non-member countries were welcome to attend as observers. The afternoon of 2 June and the morning of 3 June focused on the issue of preventing and reducing respiratory disease due to outdoor and indoor air pollution, with all 52 Member States of the WHO European Region invited to take part in the review of new scientific evidence on this issue and the policy response by countries to it. The meeting was attended by 60 participants, including representatives of 29 Member States, representatives of 5 of the 6 intergovernmental and international organizations and the 4 civil society organizations which are EEHC members and 5 by special invitation to make presentations or take part in the roundtable (Annex 1).

2. Opening remarks

The meeting was opened by Prof William Dab, Chairman of the EEHC, who welcomed the participants to this meeting and its new format. Prof Jacqueline McGlade, Executive Director of the EEA, also welcomed the participants to Copenhagen. She took the opportunity to outline the forthcoming changes in responsibilities that were taking place to avoid duplication by various institutions and agencies within the European Union. She noted that the EEA would lead on air, climate, biodiversity, water and land use, while the Joint Research Centre (JRC) in Ispra, Italy, would lead on soils and chemicals, and deal with environment and health under the respective policies, including these areas in the EU's Action Plan on Environment and Health. The EEA would continue working with WHO on indicators. It would also continue its work to ensure that data are sound and fit for purpose, and provide a quality assurance on data flows: and that would be made available to the environment and health information system being developed. The EEA would also continue integrated assessment and would publish the State of the Environment report, which includes an environmental health statement

The provisional agenda and programme were agreed. In the absence of Mr Zaal Lomtadze, Vice-chair of the EEHC, who was unable to attend and in accordance with the EEHC's rules of procedure, Mr Miroslav Spasojevic was elected Vice-chair of the meeting.

3. Report on the environment and health information system

Dr Ruzena Kubinova reported on behalf of the Coordination Group of the environment and health information system: the Budapest Conference Declaration had recommended setting up a framework plan of actions and a region-wide network on environment and health information and the task of the Coordination Group was to assess progress and report on it. Participating countries were Albania, Czech Republic, France, Georgia, Italy, Lithuania, Slovakia and Spain, and the European Commission, EEA, JRC, United Nations Economic Commission for Europe (UNECE) and United Nations Environment Programme (UNEP) were also involved. A framework plan of action had been developed, and four areas of work had lead countries or organizations: methods to determine the information needs of policies (France); assessment and reporting methodology (Italy); indicators and the information chain (Spain); and "knowledge reference" service (JRC). Three further areas still needed a lead country: methods and tools for communication and access to information; development of shared infrastructure; and organizational framework. Countries were invited to join the Coordination Group and take a lead in these activities.

Technical work on developing the system was progressing through a number of projects. The current Environment and Health Information System (ENHIS) project, coordinated by WHO, cosponsored by DG SANCO and involving partners from Member States, had tested previously proposed methodology. It was also assessed for feasibility in Estonia, Latvia and the Russian Federation as part of Bilateral Collaborative Agreements (BCAs) between WHO and the countries. The second phase of ENHIS would start in November 2005, with 23 partners. The project aimed to prepare an indicator-based assessment report for the intergovernmental mid-term review meeting in 2007, providing the baseline for the monitoring of CEHAPE effects. The Coordination Group invited the EEHC to approve the work so far; identify Member States or organizations to lead the areas specified, and advocate possibilities of expanding the environment and health information system process.

Dr David Stanners noted that the technology had to be "smart" so that it became a shared information system that avoids duplication. The EEA's European environment information and observation network (EIONET) now had national reference centres in its 31 member countries which bring together more than 300 environment bodies, agencies, public and private research centres and centres of expertise across Europe. International property rights and security would be the important issues to address. The EEA had met with Slovenia and the United Kingdom to obtain data flows from hospitals and air quality data and would report on that at the next EEHC meeting.

Mr Michael Hübel reported that the EC-supported WHO project on European Environment and Health Information System (ECOHEIS) project had finished in 2004.

Ms Chantal Breutschy reported that the next steps in the framework of the EU's action plan were to hold technical meetings with experts on the main exposure routes, to assess the overall burden of disease and ultimately the effectiveness of policies: the topics would be ambient air, indoor air, water, food and possibly electromagnetic fields and noise. The next stop was also to carry on the work on biomonitoring, under the action plan, which is an appropriate way to assess or confirm the total exposure; however, the substances would need to be traced back to sources. Assessing exposure on the basis of monitoring data should also be examined in detail. This had particularly been the experience with, for example, pesticides where retrieving the information and finding the right models had proved difficult. JRC was also assessing exposure from different sources under the various policies.

Participants supported the idea of a comprehensive information system but noted that it should focus on the most important priority areas, make some analysis of the data collected and consider how to communicate this knowledge in a simple, understandable way. High-quality research and epidemiological studies were key to health impact assessment, since policies could not relieve burdens of disease which were hidden.

Mr Christian Farrar-Hockley considered that there was merit in making raw data public even if its analysis and implications were not yet clear. Data should also be accepted from hospitals, citizens and local authorities: for example, the Dutch Monitoring Network for Health and Environment, an NGO, offered a hot line to the public to report environmental hazards.

The EEHC agreed that ENHIS, an important outcome of the Budapest Conference, was central to the work of the EEHC and that a significant portion of the next EEHC meeting should be devoted to this topic.

4. Report on the first meeting of the CEHAPE Task Force

This meeting, held in Vienna, had been attended by 48 environment and health focal points officially appointed by ministries of health and ministries of environment, from 33 countries, as well as 4 EEHC members. Participation by the Commonwealth of Independent States (CIS) and Balkan countries had been good, thanks to the financial support of Austria. The meeting had focused on their terms of reference as focal points as well as the terms of reference and the workplan of the Task Force, and countries had reported back on their implementation of the Budapest commitments in regard to CEHAPE Regional Priority Goal 3. The focal points' terms of reference were to act as the main liaison point and channel of information, to inform the EEHC regularly about the actions taken within their respective countries to implement the Budapest Conference commitments and to share this information, and to comprise the Task Force. The main purpose of the Task Force was to measure and document the progress of CEHAPE implementation, recommend the development of capacity-building exercises and training materials, support subregional groupings, and to support NGO involvement nationally and youth involvement in the Task Force. Most countries had already made institutional arrangements to carry out the Budapest Conference commitments in the form of task forces, for or intersectoral committees, and they were overseeing either revision of national environment and health action plans or the preparation of a national children's environment and health action plan.

Regarding implementation of the Budapest Conference commitments, WHO had set up a web map to show country-by-country progress, which would be made public as soon as Member States had approved their individual texts. Countries would be asked to report back at least every 6 months, and the secretariat was asked to develop a simple and useful reporting mechanism.

5. Status of the strategy for youth participation

Participation of young people in the environment and health process had been the subject of a paper by the Irish National Children's Office at the last meeting of the EEHC, and a meeting of countries interested in working on this issue was now scheduled for 27 to 28 September 2005 in Dublin. All countries were encouraged to attend. It was recommended that the European Youth Forum be involved: they had already expressed an interest. Norway emphasized their support for the issue.

6. Communication strategy of the EEHC

Ms Vivienne Taylor Gee and Ms Cristiana Salvi presented the communication strategy of the EEHC. They drew attention to the recent Eurobarometer public opinion survey, which indicated that views on the environment in general had not changed in the last two years, except for public concern about how the environment would affect children's future, which had risen by 3%. This heartening figure might have reflected the success of the communication strategy used for the Budapest Conference. The survey found that when it comes to trust on information on environmental matters, over twice as many people trusted television as trusted governments (27% compared to 11%) and scientists were trusted by 32% and NGOs by 42%. Clearly, there was much work to do in communicating what policies were being developed and why.

Participants welcomed the strategy and underlined the value of communication between Member States and the EEHC, and the importance of contact with the media and through them, the public. One of the main aims of the communication strategy was to ensure that the public would be given information which they could trust, and which would make the environment a more concrete and less abstract issue on which they could act. Communication about human exposure to environmental pollutants should be stressed, and involving health professionals in the strategy should be encouraged. There was a suggestion that subregional communication could work well in countries that shared a language or a topic interest. Some proposals were made to re-work the

objectives of the strategy and to identify information that could be used by all countries to develop national communication strategies. It was agreed that the EEHC communication strategy should be based on "something to say" and this should be underpinned by evidence from the environment and health information system when it was operational, including exposure data from Member States and best practice. Policies that provided solutions should also be highlighted, as well as the progress being made and the political recommendations on reducing exposure and emissions. Case studies on best practice in the different countries should be collected and shared as examples of practical solutions. It was clarified that guidelines on risk assessment would not be developed as part of the communication strategy. A workshop to report case studies relevant for the EEHC communication could be promoted. It was agreed that the communication strategy as carried out should reflect the comments made.

7. Budget and funding of the EEHC

Ms Elaine Price reported that firm pledges to date to support the work of the EEHC had been made by Italy, France, Denmark and WHO for a total of approximately US \$120 000. This meant there was a shortfall of some US \$180 000 if all estimated operational and staffing expenses were to be met.

Finland offered to host the next (20th) meeting of the EEHC, which will focus on preventing and reducing disease and disability from exposure to hazardous chemicals, physical and biological agents, and hazardous working environments. Norway offered to host the EEHC meeting in spring 2006, which will focus on preventing and reducing health consequences of accidents and injuries.

8. Review of scientific evidence on preventing and reducing respiratory disease due to outdoor and indoor air pollution

At this point the meeting was opened up to a session with wider participation, on scientific evidence on Regional Priority Goal 3 and the policy response by countries. Prof Jacqueline McGlade welcomed the new arrivals and Dr Marc Danzon, Regional Director of the WHO Regional Office for Europe, emphasized the importance of implementing the Budapest Conference decisions. He noted that countries were currently developing their BCAs with WHO for 2006-2007, in which they had asked for support for environment and health work. He underlined the vital function of the EEHC as a forum for sharing information and experience. He further noted that respiratory disease in children, the topic under discussion, was a serious problem in the western countries, as well as in countries in transition, that was sometimes ignored.

Introductory address

Dr Robert Maynard gave the introductory address. He referred to the WHO book due to appear in a few weeks time entitled "Effects of Air Pollution on Children's Health and Development", prepared by a working group of international experts examining the causal links between air pollution and effects on children's health, in which he participated. Air pollution causes premature deaths, with perhaps the most famous episode being the smog in London of 5 to 9 December 1952, which killed between 4000 – 8000 people, including children. Although high levels of air pollution were known to affect children, identifying the impacts of lower levels of exposures required a systematic review of the evidence accumulated by epidemiological and experimental studies. The working group defined four categories of evidence – sufficient to infer causality, suggestive of causality, insufficient to infer causality and showing no association. Under the first category, the findings were that particulate matter (PM) causes post-neonatal respiratory deaths, impaired lung development, cough and bronchitis. They also found a direct causal effect of pollutants on aggravation and prevalence of asthma, increased respiratory tract infections, central nervous system symptoms and increased sensitization to allergens. It was difficult to separate the exact individual pollutants as they often came from the same source and often one acted as a marker for another. Asthma understandably attracted much public interest. Asthma symptoms were made worse by air

pollution. There was an asthma epidemic among children, despite the fact that air pollution generally was falling. In some schools in the United Kingdom, 30% of children suffered from asthma although this was decreasing for unknown reasons.

Children were more susceptible to pollution than adults due to their high metabolic rate, greater activity, proximity to pollutants, developing detoxification processes, small airways, frequent respiratory infections, developing immune systems and overall susceptibility due to their changing, growing systems. Some children had specific vulnerabilities due to chronic disease, low birth weight or poverty. The damage from air pollution affected adulthood through reduced lung function and retarded lung growth.

The discussion addressed the use of the available evidence for standard setting. This would take account of the vast majority of children who are at risk even from exposure at relatively low concentrations of pollutants. It was important to find evidence of the benefits, including economic benefits, of reducing pollution levels. The question of the precautionary principle was raised and when it would apply: Dr Maynard saw the precautionary principle as a risk management tool and would apply it to the third category of evidence, that is, insufficient to infer causality.

Participants discussed in particular the question of asthma, and reference was made to the French Vesta study on the role of traffic-related air pollution in the occurrence of childhood asthma, which suggested likely co-causality of pollution in onset of asthma. It was pointed out that the mixture of additives in fuel was very complex and a change in its make-up could contribute to the epidemic. For example, platinum oxide aerosol, used as a catalytic metal in diesel fuel, has risen in parallel to the asthma epidemic. Alternatively, the mixture might not be the cause but simply the fact that there are more cars. This does not, however, explain the current decrease in the incidence of asthma.

PM10 and PM2.5 penetrated buildings from the outside, but the paramount indoor source of indoor air pollution was environmental tobacco smoke and cookers. In the CIS, leaded petrol and burning plastic in ovens were serious hazards: burning plastic would be an acute danger as it could kill by instant poisoning. Mites and house dust also contributed to asthma. With lead, the evidence of brain damage was clear, and use of unleaded petrol was necessary to reduce exposure.

Dr Michal Krzyzanowski noted that current estimated health impacts of fine particulate matter included an increased risk of death due to cardiovascular and respiratory diseases, and lung cancer. The reduction of life expectancy attributed to PM from anthropogenic sources amounted at present to an average of 8.6 months in the population of the European Union. The country estimates ranged from 3.1 months (Finland) to 13.4 months (Belgium). These impacts should decline until 2020 to 5.4 months (EU average) with the impacts still the highest in Belgium (8.8 months). Since only a fraction of all deaths could be linked with pollution, the individuals affected by the pollution would lose on average about 10 months of expected life.

He drew participants' attention to the likely scenario in the eastern part of the Region. While the EU Member States would see an improvement in air quality by the application of current legislation related to pollution emissions, eastern Europe with its present legislation and policies was not likely to, and pollution would continue. In large parts of eastern Europe the current impacts were high, with reduction of life expectancy exceeding 12 months. However, the present legislation and policies related to air quality would not be able to reduce these impacts significantly in the next 15 years. In contrast to the EU, where current policies had a potential to reduce emissions of PM by about 50%, the expected change in total volume of PM emissions (currently comparable with the EU) was about 10%. This was only a small fraction of reductions that could be achieved with application of the currently available technologies, which, if applied, could reduce the emissions to one fifth of the current volume.

European Commission programme Clean Air for Europe (CAFE)

Dr Matti Vainio presented the Clean Air for Europe programme (CAFE) and the preparatory work of the Thematic Strategy on Air pollution. The draft Strategy was to be finalized the day after this meeting and subject to the internal decision-making procedures of the Commission. Later, the Commission will communicate the final version of the Strategy.

CAFE started four years ago – officially communicated through "Towards a Thematic Strategy for Air Quality" - to make progress on air pollution, devoting 3 million euros to developing a strategic view that went as far as 2020. The programme gave clear priorities to the air pollutants ozone, particulate matter and nitrogen oxides, since these pollutants cause much of the damage to human health and the environment. The European Parliament and the EU Member States (*i.e.* the Council) asked the European Commission, in the 6th Environment Action Programme (EAP) of the European Community, to propose a thematic strategy on air pollution that would achieve "levels of air quality that do not give rise to significant negative health impact on and risks to human health and the environment".

The aim of the 6th EAP was to achieve these environmental objectives within the timeframe of 2020, which was very challenging since air pollution was causing major damage today and many pollutants had significant adverse effects at low concentrations. A WHO project, the "Systematic review of air pollution health aspects in Europe", was supported by the Commission and this project gave scientifically based advice on air pollution health effects. _WHO recommended, *inter alia*, that the current air quality limit value for PM10 should be maintained. On regulating PM2.5 (where there is no Community legislation), WHO concluded that no safe lower threshold had been found. Thus, the Commission was considering a new approach to regulate PM2.5 in the thematic strategy.

Based on WHO advice the health impacts of air pollution were quantified in the RAINS² integrated assessment model. This assessment was accompanied by assessment of current policies. Further, the monetary benefits of air pollution reduction had been estimated with an internationally peer-reviewed cost-benefit analysis methodology. Also the macroeconomic impacts of the thematic strategy had been analyzed through a general equilibrium model. Stakeholder consultation of over 100 meetings and a public consultation on the internet with more than 10 000 responses had also been part of CAFE.

Scenarios were built up to reveal the likely improvement of air pollution by 2020 following the present policies of the Community (also known as the CAFE baseline). The influence of climate change policies after 2012 was also accounted for in these estimates. The CAFE baseline scenario demonstrated that the present policies have effect: the emissions go down and also the impacts on human health and the environment. However, the CAFE baseline also showed that 2.5 million life years still would be lost in 2020 due to exposure to particulate matter and ozone. This would correspond to having close to 300 000 cases of premature mortality in the total population in the EU. Also the negative effects on children had been assessed in the CAFE programme. The monetary valuation of the health damage alone would be between 200 and 600 billion euros in 2020.

The public health problem presented by air pollution seemed to be similar in magnitude to that of tobacco smoke or traffic accidents.

¹ COMMUNICATION FROM THE COMMISSION The Clean Air for Europe (CAFE) Programme: Towards a Thematic Strategy for Air Quality Brussels, 04.05.2001 COM(2001) 245 final.

² RAINS **R**egional **A**cidification **In**formation **S**ystem developed by the International Institute for Applied Systems Analysis (IIASA).

Potential measures and European legislation to be revised were identified, ranging from the revision of the National Emissions Ceilings Directive; review of the Integrated Pollution Prevention and Control Directive; vehicle emission standards for light and heavy duty vehicles; infrastructure charging including environmental differentiation; emission reduction of volatile organic compounds (VOCs) from petrol stations; product standards for very small combustion installations; green procurement rules; emission reduction from ships; agri-environment schemes; reducing the nitrogen content of animal feedstuffs; improved insulation and energy efficiency of buildings and the use of regional funds.

The CAFE programme also came to the conclusion that that a new way had to be considered to regulate PM2.5, in order to ensure health impacts reductions and benefits for citizens while safeguarding to unduly high exposures to subgroups of the population. The most important benefits would come from reducing the population exposure through a reduction of the average annual urban background concentration (AAUBC). The new way could consider taking the three-year running average of all cities in a country, using siting criteria similar to those of PM10 urban background stations, establishing a starting point in μ g/m3. Then a decision rule would be applied, whereby pollution would be reduced by a particular amount such as a percentage for each μ g/m3. For example, if AAUBC were 10 μ g/m3 in 2008-2010 in a Member State the reduction requirement could be 15%. This would achieve a gradual reduction in pollution and provide health benefits of the population. In addition a "concentration cap" against unduly high risk would apply everywhere as a safeguard, the cap should not be confound with a limit value since the cap would not give high protection to human health in that environment. To monitor PM2.5 effectively would involve compliance monitoring, background monitoring ("EMEP level II") and very advanced monitoring or "supersites".

The Thematic Strategy on Air Pollution had not yet been adopted by the Commission, but the preparatory work is to a large extent finalized, including analysis of different options of taking measures to make progress towards the objectives of the 6th EAP. Also under consideration is to improve the present air quality legislation to be streamlined and modernised and taking account the recent advice from the WHO. On the reduction of air pollution from emission sources the preparatory work for the revision of the National Emissions Ceilings Directive had already started, and work would begin on emissions from diesel cars in 2005 and heavy duty trucks in 2006.

Other measures would be developed and proposed in 2006, including research. On the question of children, a project was underway led by the Organization for Economic Co-operation and Development (OECD), on improving knowledge and application of the value of a statistical life and value of life years lost in relation to children versus adults, with 6000 interviews planned in the Czech Republic, Italy and the United Kingdom.

Denmark

Ms Zorana Jovanovic Andersen presented interim findings from a three-year time-series study on air pollution health effects as part of the Copenhagen Prospective Study on Atopy in Children (COPSAC). The purpose of the study was to evaluate the association between traffic-generated air pollution and the development of respiratory symptoms in small children. It covered a sample of 411 Danish children genetically pre-disposed to atopic illnesses: three study populations had been chosen who lived near the centrally located air pollution monitors. The researchers were finding significant positive associations between incidents of atopy and street levels of carbon monoxide (CO) and nitrogen oxides (NOx); significant negative associations with street-level ozone (03); and borderline significant positive associations with urban background levels of CO, nitrogen dioxide (NO2) and PM10. These effects were occurring typically 2 to 4 days after increased exposure to pollutants, and accumulated over several days. Overall pollution levels were relatively low in the study period.

Spain

Mr Ignacio Elorrieta reported that several studies had established the relationship between air quality and its impact on morbidity and mortality health. Two important multicentre studies had been carried out in 16 Spanish cities, each with a population of 10 million – thus covering about a quarter of the entire Spanish population. Research on air quality and children's health had also been conducted. The results were similar to other European studies even though the particulate matter in Spain had a larger mineral content, with about 30% of the whole PM coming from dust from the Sahara Desert. No threshold was found to trigger children's mortality, but when PM10 exceeded the value of 100 µg/m3, children's mortality rose from a mean value of 0.67 deaths per day to 1.03.

The Spanish Air Quality Control Network, managed by the regional governments, had revealed important reductions of the levels of PM10, NO2 and sulfur dioxide (SO2) until 2002. However, since 2002, these positive trends had stopped and PM10 was on the increase in all sizes of cities, NO2 was rising in cities of over half a million people and ozone (O3) exceeding episodes were now more frequent in Mediterranean peri-urban areas. This worsening was attributed to 2 million new diesel cars put into service without anti-pollutant devices. By encouraging the use of diesel, carbon dioxide (CO2) emissions had been successfully reduced in accordance with the Kyoto Protocol but PM10 and NO2 increased, thus increasing immediate health risks. Recently, the siting of air pollution monitors in the cities had been reviewed with the objective of more accurate reflection of population exposure.

Norway

Dr Jon Hilmar Iversen reported on two ongoing studies, one on air pollution enhancing allergen sensitivity, particularly PM10, and another on legionella pneumonia. Norway had had 8 deaths among 50 people who had contracted it, probably from a cooling system.

France

The French Observatory for Indoor Air Quality was engaged in a project under its National Environmental Health Action Plan (NEHAP) to identify substances, agents and situations having an impact on indoor air quality and health; evaluate the population's exposure to pollutants in order to contribute to health risk assessment and management; support development of policies to prevent and reduce health risks linked to indoor air quality (IAQ); and coordinate research in this field. It was setting up a national network of IAQ experts; examining the state of the art on national and international IAQ data; ranking indoor pollutants based on health criteria, and conducting IAQ surveys.

Ongoing work included a national survey on dwellings aiming to provide a first general picture of the exposure of the general population to main indoor air pollutants (chemicals, particulates, biocontaminants, radiation) and related risk factors (environment, indoor sources, occupant's behaviour). Work under discussion included surveys on spaces dedicated to children and on office buildings; and information and communication.

The National Institute for Public Health Surveillance (InVS) had been engaged since 1997 in a multi-centre epidemiological monitoring system in 9 cities, for health risks related to urban atmospheric pollution. The purpose was to monitor the relationship between exposition to atmospheric pollution and health risks through analysis of different French cities' situations, and to produce useful tools for health-care workers to evaluate health impacts from local atmospheric pollution. They had already produced health risk estimates for short-term death risks, hospital morbidity and ozone and temperature risk estimates for the heat wave of 2003. They had contributed to local plans and decision-making to ensure that health was taken into account, and international processes.

The French Agency for Environmental Health Safety (AFSSE) was working on urban air pollution impact assessment, the National Environment and Health Action Plan and a nation-wide

mobilization plan against cancer. The health impact study considered particles' toxicity, dose-response relationships, exposure (PM10 ambient levels converted to PM2.5), and created scenarios, using retrospective exposure and potential exposure. It looked at 76 urban units, with PM10 air quality data on urban background sites in 2002 (ADEME), selected urban population of over 15 000 and an average urban background PM2.5 converted concentration of 12 μ g/m3. It showed that an estimated 9513 adults were killed in 2002 from the previous 15 years of exposure to air pollution, over 1000 of these by lung cancer and nearly 5000 by cardiopulmonary disease. They had estimated the number of potentially avoidable lung cancer deaths and concluded that the latest evidence of causality for specific causes of mortality showed that despite effective progress in air quality management, substantial health gains could be expected from further reinforcement of air pollution by EU, national, regional or local policies.

THE PEP

Mr Nigel Dotchin, Chair of the Transport Health and Environment Pan-European Programme (THE PEP), outlined relevant workstreams, based on THE PEP programme of work. THE PEP was established in 2002 to provide a policy framework for concrete activities on integrating environmental and health aspects into transport policy (e.g. promoting cycling, walking and public transport in urban areas), and disseminating knowledge and experience through THE PEP clearing house or website, which was in its pilot operation phase. THE PEP was also working on specific issues in southeastern Europe and the CIS. THE PEP programme of work also addressed several of the CEHAPE Regional Priority Goals.

Under the workstream on land-use and planning, a conference was held in Moscow, jointly with the European Conference of Ministers of Transport (ECMT), the Russian Ministry of Transport and the Moscow city government, on implementing sustainable urban travel policies in the CIS; subregional workshops were planned for 2006 – 2007 in Georgia, the Republic of Moldova and The former Yugoslav Republic of Macedonia. An overview of the environmental and health effects of urban transport in the Russian Federation and the other EECCA countries had been prepared and would be published and disseminated. THE PEP was also developing a project aimed at promoting cycling, walking and public transport in urban areas, implemented through a task force of 16 Member States and three NGOs.

The health impacts and related costs of transport, particularly on children, was another workstream of THE PEP, implemented by its own Task Force. A toolkit for decision-making in transport, health and environment, based on ongoing methodological work and national case studies, was being developed, and work was underway on the institutional arrangements needed for integrating policy-making between central government and local authorities.

A further focus was on developing a better understanding of the institutional arrangements needed for integrating policy-making between central government and local authorities, with a view towards identifying enabling actors and providing practical guidance for central and local governments, building on country experiences.

Finally, THE PEP was also promoting the dissemination of energy-efficient driving behaviour, under the leadership of the Netherlands, which is collaborating with Latvia and Poland to develop training, practical manuals and follow-up activities.

THE PEP will report back at the Third High-level Meeting on Transport, Health and Environment in 2007. Resources and political will influenced the delivery of results and Member State involvement.

Uzbekistan

Mr Shukhrat Umarkhodjaev reported on behalf of a working group established at a consultation on the health basis for air quality management in eastern Europe, Caucasus and central Asia, organized by the WHO Regional Office for Europe in Moscow on 30 to 31 May 2005. Representatives of the ministries of health and of the environment from 11 EECCA countries had reviewed current national strategies of air quality management. The meeting had agreed that the strategies needed to be revised to better address health concerns and that the strategies should focus on a limited set of pollutants, including particulate matter (PM10 and PM2.5), NOx, SO2 and O3. The updated air quality standards were based on the WHO Air Quality Guidelines, and air quality management should adopt a multisectoral approach. Also selected elements of a general action plan had been agreed. Air quality assessment capacities should be updated and include gradual development of PM monitoring. For pollution abatement, high-level government decisions would be needed and should include both incentives and control mechanisms. The strategies should include review of efficiency (assessment of actions, parameters to be assessed). The follow up actions would consist of the inclusion of the air quality management strategy in NEHAPs, which should specify a detailed plan of actions. It was proposed to continue activities of the working group convened at the Moscow meeting, and to undertake preparation of a framework plan for national PM monitoring as its first task.

9. The policy response: progress made to prevent and reduce respiratory disease due to outdoor and indoor air pollution

The following information was provided by countries and organizations.

Albania

A special conference on a better environment for healthier children had been held after the Budapest Conference. There was concern about the lack of data on chronic disease including respiratory disease; however, a study in 2002 showed that for children under 14, the leading cause of death was due to respiratory disease, with 82.5% of that from pneumonia and bronchopneumonia, and 9.3% from chronic diseases and asthma. Air pollution was increasing from urban transport, construction, and mismanagement of urban solid wastes. The main contaminants were particulate matter and PM10, which both exceeded the Albanian standards for air quality and in Tirana were several times higher than the allowed limits. There were an increasing number of cars on the road, mostly pre-1990, and 80% of them used diesel, the quality of which was below the EU standards. Construction and civil works, along with bad-quality streets, contributed to dust in the urban air.

The main cities in Albania had developed local environment and health action plans, tobacco protection legislation was underway and the Framework Convention on Tobacco Control had been ratified. However, in the area of healthier cooking and heating systems, in general newly constructed buildings did not have central heating systems or thermal insulation. Laws based on EU directives had been passed on, *inter alia*, air protection, transport emissions, emissions from industry and air quality standards.

Armenia

A three-year action plan was being implemented to tackle air pollution and improve the monitoring of emissions. Public transport was being renovated, and buses were being brought back after a period of minibuses which affected emissions negatively. According to studies, 60% of men smoked (20% of women, but much smoking among women was hidden). Recognizing that smoking was a serious public health issue, the National Assembly adopted a law to ban smoking in public places. New initiatives on tobacco control were also under development.

Austria

The biggest problem was ultra-fine particles, and the exceedances in major cities which had to be reduced by action at federal level. From 1 July 2004, a bonus system (150 euros) was attached to new diesel cars to persuade owners to have them fitted with filters, and sulfur-free fuels would become mandatory on 1 January 2006. There would also be retrofitting of particle filters to tractors etc, and a subsidy programme for industry to reduce particulate emissions. Action was being taken to increase speed limits and to ban certain vehicles. A major public awareness campaign was being launched on children's health, with a brochure going to all doctors in Austria. The 1999 study on transport-related air pollution was being updated, as well as studies on children's exposure to indoor air and outdoor air in cities. A mobility management scheme was being put in place for schools to discourage parents from driving their children to school, which was causing problems, including obesity. The CEHAPE was being implemented by a national task force. Doctors for the Environment, an NGO, was very active and involved in the activities.

Belarus

In Belarus 80% of women and 65% of men smoked. Belarus had just signed the Framework Convention on Tobacco Control. A tobacco ban was already underway in hospitals and on public transport. Studies had shown that there is a particular problem with air pollution for people living near highways. Hydrocarbons impacted on women's reproductive health, and refineries were affecting health, with a special concern about bronchial asthma. There was a special problem with particular allergenic plants.

Bulgaria

A national strategy for limiting emissions of air pollutants up to the year 2020 had been adopted. Where levels of air pollution had been exceeded, it was compulsory for municipalities and regions to develop and implement improvements. Production of leaded petrol had now ceased and its use banned. Tobacco smoking was now banned in indoor public places including public transport and indoor workplaces, and a national programme for tobacco smoking restraint was being implemented. Bulgaria was participating in a two-year international study on air pollution and children's respiratory health within the EU's Quality of Life programme. The Bulgarian NEHAP was being revised to include children and an interministerial committee set up, with a secretariat, a working group and NGO involvement.

Czech Republic

Air quality and health effects were monitored systematically, covering concentrations of classic pollutants as well as metals, polycyclic aromatic hydrocarbons (PAHs) and VOCs, as well as health effects such as the incidence of treated acute respiratory diseases (data collected from 120 paediatricians and physicians) and allergy prevalence in children (data collected from 54 paediatricians and from surveys of 7850 children). In 2003, 80% of inhabitants in monitored cities (about 3.5 million inhabitants) were living in ambient air that exceeded the limit criteria of suspended particulates PM10. However, lead levels were on the decrease and concentrations of NO2 remained stable. Findings regarding PAHs were alarming, with concentrations of benzo(a)pyrene in urban air exceeding the limits at nearly all measurement stations. The overall trend of treated acute respiratory disease was decreasing since 1994, most significantly in children aged 1 to 5 years. However, allergy and asthma were on the increase in the period 1996 to 2001.

Denmark

One of the priorities in the Danish NEHAP was to identify measures to improve the indoor environment for both children and adults. A report would be published in the autumn of 2005.

A number of projects had been carried out to reduce the risks from consumer products in relation to indoor air. In 2006 a summary report would collect the lessons learned about consumer products and indoor air, including in relation to indoor air in children's rooms.

Particle filters for heavy vehicles were being promoted nationally by financial measures. In Copenhagen, particle filters for all heavy vehicles and machines working for the municipality were requested. Regionally, nearly all public buses in towns had particle filters. Under consideration was a plan to introduce environmental zones in Copenhagen. Wood stoves resulted in a high concentration of particles in some residential areas, and work to diminish this problem was ongoing.

Environmental tobacco smoke was a big problem. Recently the Board of Health had launched the second plan on cancer prevention. Restaurants and cafes now had to display signs on their policy on smoking, but a total ban was unlikely to be considered for the moment.

Estonia

Action focused on air quality in schools, particularly damp and radon, and implementing a noise policy. The closure of most of the major industry had largely removed outdoor air pollution. Pollution from traffic was only a problem in the capital, but one-third of the population lived there. Smoking was to be banned in public places in two years, and the air quality of schools and day care facilities was to be monitored.

Finland

Finland had seen a gradual and continuing lowering of mortality over 40 years including from causes related to respiratory disease. It was in the fortunate position of enjoying outdoor air with low pollution even in urban environments mostly because of the effectiveness of combined electricity and heat production. However, there were still problems with indoor air, partly due to the tight insulation of homes which had assisted energy conservation. Because of universal access to day care, special attention was being given to indoor air quality and hygienic interventions to reduce upper respiratory tract infections in day care centres. This was the subject of a nationwide intervention programme conducted by the University of Oulu in northern Finland. Using simple guidelines such as washing hands more often, reduced infections by 15%, not only benefiting the children but also the parents who did not have to take days off work to care for their ill child. A meeting was taking place in September 2005 to launch the final phase of the NEHAP to develop Budapest Conference implementation.

France

The NEHAP was adopted in June 2004. An asthma and allergy prevention campaign had been launched; a guidebook for local authorities on environment and health risks had been developed; local authorities were being encouraged to use a simple system of environmentally friendly construction materials; and a ban was to be introduced on some products involving manmade mineral fibres, including ceramic and glass fibres. Other initiatives included antipollution devices for buses, avoiding building schools and nurseries on old polluted sites, monitoring carbon monoxide poisoning, and an awareness campaign on the hazards of environmental tobacco smoke.

Georgia

The NEHAP underpinned policy. The improvement of air quality was an urgent issue, as Georgia had significant air pollution. Leaded fuel had been banned since 2002, and there was a long-term programme on environmentally safe vehicles. No smoking was allowed in schools. However, there was insufficient data on pollution and health, and a lack of monitoring systems. There was a regional framework to involve the public in decision-making, and climate change was being tackled.

Italy

Air quality had been greatly improved in Italy after the banning of smoking in public places and closed workplaces. The fines incurred by offenders were quite high, and if someone in a public place smoked near a child under 12 or a pregnant woman, the fine was doubled. A campaign of green information had helped to raise public awareness.

Kyrgyzstan

In the cities 50% of respiratory disease of children under 14 was due to air pollution. In the capital pollution was very high, and respiratory disease among children was over 2.5 times that of adults. In indoor air, the pollution was mostly generated by combustion, poor heating systems and damp. With the housing and health programme, progress had been made to assess the housing and health issues in the southern part of the country. The research had showed that urgent measures were necessary. Efforts were being made to monitor outdoor air pollution, assess organic pollutants and control tobacco smoking - so far banned in medical and children's facilities. A health promotion centre had been established, and it was hoped to develop a CEHAP with multi-agency involvement. In the south, there were refugees from Uzbekistan, so this made the situation particularly difficult.

Lithuania

Children's respiratory mortality and morbidity were problems. The mortality of children under 14 from respiratory disease was about 4% of total children's mortality. Although air quality legislation existed, it did not directly address children's needs. In 2004 the state public health service summarized checkups from the secondary schools, and in over half the institutions, limit values were exceeded in noise, microclimate, lighting and chemical air pollution. Resources were being allocated to improve this. A national tobacco control programme was underway.

The concentrations of outdoor air pollutants were normally lower than the EU limit values with the exception of PM10, to which traffic, winter sanding and small-scale stoves contributed. 80% of the population used gas at home, only 8% electric cookers. 94% had central heating. Action plans were in preparation to reduce traffic emissions, and regulations in preparation to reduce small-scale stove emission and reduce of secondary aerosol precursors (NOx and SO2) It was clear that housing conditions affected health, particularly through damp and mould with mycotoxins and allergens, heating systems that release pollutants, and pollutants from construction materials and furniture. It could be improved if the issue was taken seriously and the housing sector fully involved.

Netherlands

Concern about ambient air was growing: in The Hague, the public had asked for less traffic because of heavy traffic pollution and were considering a court case. Exposure to NOx and particulate matter from diesel engines exceeded the new EU levels. On several occasions the authorities have refused to grant planning permission for new roads, offices, even a new football stadium, because of the pollution implications of very heavy traffic. In summer 2005, extra measures were being taken by the Ministry of Environment: financial incentives for new diesel-powered cars, trucks and buses equipped with a soot filter, a new flexibility will be inserted in the compliance, due to the EU CAFE strategy; and existing air quality legislation will be modified and more emphasis will be put on regional and local level.

On indoor air, smoking is banned in public places, even including railway stations only partly under cover. Indoor air was a priority of the Dutch NEHAP, and safe levels of contaminants in indoor air had been determined by the National Institute of Public Health and the Environment (RIVM). A study of the air quality of 1000 dwellings nationally would report by the end of 2005, measuring indoor air quality as well as noise and ventilation. A public campaign had been launched on good ventilation, including the issue of radon in new buildings. There was also a special focus on ventilation in schools.

Portugal

A NEHAP was in preparation. Although air quality was not a major environmental problem, action plans concerning outdoor air quality and indoor air quality included measures on tobacco, and integrated surveillance were being developed. Some cities were developing guidelines on housing and health.

Republic of Moldova

The ministries of health and of environment were working closely together to address air pollution. In the urban areas, 70% of morbidity among children was due to respiratory disease, and in rural areas it was 40%. After finalizing a 2004 study on incidence of respiratory diseases in children from indoor air pollution at school and at their flats, a new research study had been started on children's health in rural areas. The main sources of indoor air pollution were heating systems, cooking and smoking. In 2004 the Government prohibited smoking in public institutions and public places.

Outdoor air quality was declining mainly because of transport emissions, especially NO2. The levels used for ambient air were those of the former Soviet Union, but new requirements were being drafted based on WHO guidelines and EU air directives. However, the country had no capacity for monitoring PM10 or PM2.5. A revision of the national programme to reduce emissions from road transport had been initiated by the NGOs. This programme would include the promotion of cycling, healthy urban planning, reducing up to 50% by 2007 the number of minibuses in use and developing public transport. The NEHAP was going to be revised to include CEHAPE; a steering committee had been set up with the national Regional Environmental Centre.

Slovakia

The respiratory disease prevention strategy included education and information for the wider public on tobacco; smoking in public places, all institutions providing health care, cultural institutions, playgrounds and schools will be banned; and selling of cigarettes in general was rigorously restricted. The NEHAP was being revised to take account of the Budapest Conference commitments. The data were being analyzed to identify the main health problems. National and international studies were being used, and a project was underway to assess respiratory disease in children from 7 – 11 years, where 2000 children from polluted areas were examined and their air intake measured

Spain

As part of CAFE, the Ministry of Environment had organized a meeting in January 2005 with the public authorities responsible for the air quality in the Regional Governments where emission limit values had exceeded the new EU Air Quality Standards. The aim of this meeting was to design action plans with national guidelines and common criteria. A roadmap was established for 2005, taking into account the data, urban mobility, assessment on anti-pollutant technologies and Design Action Protocols for alert/alarm situations, including how to act and how to give the public information.

All Spanish cities with more than 100 000 inhabitants now had to implement urban mobility plans, and the Ministry of Environment was preparing technical materials on what an urban mobility plan should be, who much it would cost to implement, and what its benefits were. These materials would be ready by September 2005.

Also underway was an assessment of antipollutants technologies through Refuel (fuel quality substitution by hydrogen, biodiesels etc); Rebuild and Repair (for improvements in engine performance) and Retrofit (filters and catalytics, especially in public transport). They were also carrying out best available techniques and best environmental practices under the Stockholm Convention on Persistent Organic Pollutants, such as watering the streets to reduce particles and using paint that absorbed pollutants.

Sweden

An environmental health report 2005 had been produced, which described exposures and results from the national survey n children's environmental health. A programme was being developed for health-related monitoring of the indoor environment, so that progress could be monitored and estimates could be made of respiratory disease due to environmental tobacco smoke (which is currently on the decline), mould and damp. New subtargets had been made on regional and local PM2.5 levels, of a one-year average 15 μ g/m3 to 30 15 μ g/m3 (24 hour) The environmental objectives for Sweden were going to be analyzed from a child perspective: for example, there was a need for better school environments. Action programmes on NOx and particulate matter including road abrasion from tyre and road wear, were adopted by local authorities in Stockholm and Gothenberg. The gaps in long-term studies were being identified: for example, research was needed on asthma and allergy, and on the public indoor environment such as underground trains.

Tajikistan

The country faced very serious problems with regard to indoor air quality. 80% of all exposure to air pollution was indoors. 75% of children lived in rural areas where 60 - 90% of households burned coal, biomass, manure and straw inside the home, particularly during the frequent winter power cuts. Children and women were most exposed. It was hoped to develop a national plan of action, but more scientific data were needed. Tajikistan should have access to natural gas in future.

Turkey

Work on CEHAPE had started, with a workshop. A technical group had formed and their current focus was on monitoring criteria.

Ukraine

A focus was being put on the 3800 internet cafes, often open 24 hours, in which children and young people spent 3 – 9 hours at a stretch in them, often at night when they were cheaper to use. They were exposed to air pollution of different kinds: a survey found that the formaldehyde levels were 20 times over the limit, there was pollution from heavy metals, strong electromagnetic fields, and concern about mental health. Internet cafes would form part of the plans for childrens' health, and any experience from other Member States on the effects of internet cafes on children's health would be appreciated.

Regional Environmental Centre for Central and Eastern Europe

The REC for CEE coordinated a pilot project in 2004 in 7 countries on preventing and reducing respiratory disease, covering indoor air quality in schools. This project raised awareness through National Breathing Day and an indoor air quality training programme in schools. Efforts were underway to expand the project to 16 countries and report back at the next environment and health ministerial conference in 2009. In Hungary 15-20% of children aged 11 to 13 had respiratory disease. They spent from 6 to 8 hours in the classroom and therefore the school's air quality was important, including its O2, CO2 and NO2 from heating, dust, organic chemicals etc. Researchers from Italy and Hungary examined the home and housing conditions, and the indoor and outdoor air quality, looking also at the legal framework and training needs.

UNECE

UNECE was involved in several activities relevant to the topic of Regional Priority Goal III. It provided the secretariat to the Convention on Long Range Transboundary Air Pollution, which has 8 protocols regulating specific pollutants in the pan-European region. PM was not explicitly covered by any protocol, and a task force had been established in December 2004 to look at whether PM should be added to an existing protocol or be the subject of a new protocol. The UNECE would

host a high-level meeting on 15 to 16 December 2005 on implementing the Sustainable Development Goals at the regional level, with a focus on air pollution, climate change, energy and industry. In addition, the UNECE Committee on Human Settlements provided country profiles on the housing sector, and was issuing guidelines on social housing and it had a programme on housing modernization and urban renewal. Guidelines were in preparation on reporting under the Protocol on Pollutant Release and Transfer Registers (PRTR), covering 86 pollutants that harm health or environment, and national and European-wide PRTR systems were being promoted. In the CIS, work continued on environmental monitoring and on preparing a core set of indicators including on air pollution. Assistance was also being given to CIS and south-eastern Europe through the Environmental Performance Reviews. Finally, the Protocol on Water and Health, a major achievement that came out of the health and environment process, was due to come into force on 4 August 2005 and the first meeting of the parties would be held in May 2006.

Concluding comments

There was a general agreement to underline the common responsibility of all Member States to follow in a concrete way the implementation of the Budapest Conference decisions. It is a priority of the EEHC to develop valid tools to help ensure that the implementation can be charted and monitored effectively, based on the reports of Member States.

10. Roundtable on measures and policies on indoor and air pollution

Participants in this roundtable were Dr Mihaly Kokeny (Hungary); Dr Diana Hein, (North Rhine-Westphalia, Germany); Christian Farrar-Hockley (EPHA-EEN); David Stanners (EEA); Michael Hübel (EU DG SANCO); Chantal Bruetschy (EU DG Env); and Dr Roberto Bertollini (WHO Regional Office for Europe). The moderator was Dr Franklin Apfel.

Questions focused on how has Budapest changed the way countries work, and what have they achieved. CEHAPE was widely seen as a key priority, with a high level of participation and cross-sectoral involvement. Smoke-free policies and reducing air pollution were at the forefront.

Local level activities were discussed, and it was pointed out that for the EU countries, 80% of environmental regulations come from Brussels and in large part were applied regionally and locally, not just nationally. Well-defined monitoring was crucial to local planning. Air pollution exposures and health impacts were complex, and evaluation was important so the more sharing of experience that went on, the better. It was at a local level that citizens would complain about exceedances and court cases were threatened in some cities. Some countries were keen to involve NGOs as they influenced the public on issues such as tobacco and air pollution, and could support policy-makers. Some major shifts in public attitude could be needed, for example, using private cars less and devoting more resources to controlling air pollution. In some cases such as in Edinburgh, the public voted against car controls in a referendum despite NGOs joining with the local authority. However, cities all over the European Region were making plans and putting them into action.

The roundtable participants agreed that equity was a problem, both between and within countries. The countries most in need were often those where data were missing, and the people most exposed to hazards were the poor. Added to that was the perception within the health sector that environmental health was not always a high profile, even if health determinants were a major contributor to some classic diseases such as tuberculosis.

There was some danger in focusing too much on the 25 EU members, leaving out the other 27 in the European Region. The applicant countries were working hard on many priorities and working multisectorally was a time-consuming process. Investment was crucial to close the gap between countries: air quality could be regulated but if the local public transport was not improved, there would be little progress. In new EU member countries, private cars were on the increase and public transport was being run down thus removing alternative transport, so there was not enough being learned from the mistakes of the rest of the EU. Behaviour and policies had to go hand in hand,

particularly as there were vested interests set to derail policies and pressure to do what suited industry. There was no point in trying to encourage people to walk rather than drive, if walking meant they had to choke on uncontrolled pollution.

Taking measures on air pollution would be cost-effective if it reduced disease and the public needed to understand that prevention was better than cure. 40% of the world population lived in cities, and by 2020 it would be 60%. There were trends towards a different spectrum of diseases and public health officials must be aware of these. A visionary approach was needed. That was not easy for health ministries who were judged on the pressing areas such as waiting lists, hospital beds and healthcare reform.

It was pointed out that technological questions should be tackled. How much safer could our transport or our housing be? In transport, rolling stock and infrastructure had to be part of this, and in housing, the construction industry in some countries had a very constructive attitude. Added to this was the question of energy, whose costs were tending to rise and thus the poorest were put at risk. Energy efficiency was important, and renewable energy sources were part of that. Green taxation came into this discussion.

The participants ended by emphasizing their "take- home messages" which were to be bold with actions and with information and to be sure not to depoliticize health and environment. They felt that new territories and trends should be explored, and the pressure kept up with long-term vision and by involving the public.

11. Evaluation of the format of the meeting

Participants agreed that holding a session as part of the EEHC on the scientific base of and policy response to the Regional Priority Goal had worked well. There were different views on whether it was better to sandwich the session between the operation sessions of the EEHC or hold the scientific evidence and policy response session on the first day and the operational session of the EEHC on the second day. It was agreed that to save time, countries could report progress several weeks before the next meeting and their reports could go on the web map before the meeting. The restricted access part of the map could be used for exchanges about lessons learned, both positive and negative. There was also discussion on whether the CEHAPE meeting should be held back to back with CEHAPE, starting in 2006, and the secretariat would examine that proposal taking into account who attended both meetings. It was suggested that regions and cities and other sectors should also be invited to join, but there were some concern that the EEHC meeting would turn into a conference and resources would be stretched. The secretariat asked for suggestions to be sent to them for scientists to address the next meeting, and also contacts in other ministries who might be invited. Some concern was expressed that the meeting was too EU-centred and greater eastern participation should be encouraged.

12. Wrap-up

The Chair thanked all participants for the stimulating and useful meeting and the EEA for hosting it. The next meeting of the EEHC would 12 to 13 December 2005 in Helsinki, Finland.

Annex 1

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