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**CLIMATE CHANGE MITIGATION AND ADAPTATION – THE WORK OF THE  
ECONOMIC COMMISSION FOR EUROPE: TRANSLATING GLOBAL  
OBJECTIVES AND COMMITMENTS INTO REGIONAL RESULTS**

Note by the secretariat \*

Summary

This note provides an overview of the ongoing work of the Economic Commission for Europe (ECE) in climate change mitigation and adaptation, in accordance with its mandate, and highlights areas of work for possible future development.

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\* Submitted late because of the necessity for intersectoral consultations.

## Introduction

1. Climate change is a human-induced process of global warming, largely resulting from the emission of greenhouse gases (GHGs) such as carbon dioxide, nitrous oxide, methane and fluorocarbons.<sup>1</sup> Increasingly, countries are coming under pressure to curb their emissions of these gases and to enhance carbon sinks in a drive to mitigate the effects of climate change. However, combating the threats of human-induced global warming requires more than mitigation; it is equally important to reduce society's vulnerability to climate change through adaptation, as established by the United Nations Framework Convention on Climate Change (UNFCCC) Nairobi work programme on impacts, vulnerability and adaptation to climate change, launched in 2005. Adaptation addresses the impacts of climate change, including climate variability and weather extremes.<sup>2</sup>

2. The United Nations Secretary-General has put climate change at the top of the United Nations agenda, ensuring that the "United Nations system will continue ... to bring to bear the collective strength of all its entities as an integral part of the international community's response to climate change."<sup>3</sup> In November 2008, the United Nations Chief Executives Board for Coordination, under the leadership of the Secretary-General, adopted a document "Acting on Climate Change: the UN Delivering as One". The five regional commissions are well-placed to assume an active role in coordinating United Nations support for action on climate change at the regional level through the regional coordination mechanisms mandated by the Economic and Social Council in its resolution 1998/46 (Annex III).<sup>4</sup> The five commissions are seen as conveners to support global, regional and national action on climate change, while coordinating their workplans and implementation efforts with other organizations that have mandates in their respective areas.<sup>5</sup>

3. The ECE region has a crucial role in contributing to the local and regional success of UNFCCC, as stated by ECE member States at the Sixth Ministerial Conference "Environment for Europe" (Belgrade, 10–12 October 2007).<sup>6</sup> It is a key driving force in combating climate change in the pan-European region and beyond. ECE has also spearheaded the region's efforts to achieve the United Nations Millennium Development Goals<sup>7</sup>, in particular to integrate the principles of sustainable development into country policies and programmes and to reverse the losses of environmental resources.

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<sup>1</sup> More formally, climate change is defined as "a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods" (UNFCCC, art. 1).

<sup>2</sup> According to the Intergovernmental Panel on Climate Change (IPCC) *Climate Change 2007 Synthesis Report* (p. 76), adaptation relates to the "initiatives and measures aimed at reducing the vulnerability of natural and human systems against actual or expected climate change effects. Various types of adaptation exist, e.g. anticipatory and reactive, private and public, and autonomous and planned. Examples are raising river or coastal dykes, the substitution of more temperature-shock resistant plants for sensitive ones".

<sup>3</sup> A/62/644, para. 11.

<sup>4</sup> E/2008/SR.38, para. 25.

<sup>5</sup> Letter from the Secretary-General to the members of the Chief Executives Board and the Executive Secretary of UNFCCC, 30 May 2008.

<sup>6</sup> ECE/BELGRADE.CONF/2007/8, para. 20.

4. The following provides an overview of ECE's efforts in climate change mitigation and adaptation.

## **I. SUBSTANTIVE CLIMATE CHANGE WORK AT ECE**

### **A. Conventions**

#### **1. Long-range Transboundary Air Pollution**

5. The 1979 ECE Convention on Long-range Transboundary Air Pollution and its protocols aim to cut emissions of air pollutants, inter alia sulphur dioxide (SO<sub>2</sub>), nitrogen oxides (NO<sub>x</sub>) and non-methane volatile organic compounds (NMVOCs). Such pollutants can either directly influence global warming, by affecting the cooling or absorptive characteristics of the atmosphere, or indirectly influence it through, for example, ozone formation. Recent studies have shown important synergies in addressing air pollution control and climate change mitigation and have highlighted the economic and environmental co-benefits that are possible by tackling these issues in an integrated way.

6. The Convention has 51 Parties and eight protocols, all of which are in force. The most recent of these, the 1999 Gothenburg Protocol, is currently under revision. It targets the environmental effects of acidification, eutrophication and ground-level ozone through emission cuts for SO<sub>2</sub>, NO<sub>x</sub>, NMVOCs and ammonia. Such cuts are known to mitigate global warming.

7. A recent major conference and workshop entitled "Air Pollution and Climate Change: Developing a Framework for Integrated Co-benefit Strategies" was held in September 2008 in Stockholm under the auspices of the Convention and the United Nations Environment Programme (UNEP), and in consultation with the UNFCCC secretariat. It brought together policymakers and scientists from all United Nations regions to consider ways to develop and implement integrated programmes for decreasing emissions of both air pollutants and GHGs. The conclusions stressed the importance of using integrated strategies. Of special note was the possible "buying of time" in GHG mitigation through cuts in such air pollutants as black carbon and ozone, and air pollutants with a strong radiative forcing effect, which might be cut more readily than CO<sub>2</sub> and achieve some GHG mitigation in the short term. The conference agreed there was a need to strengthen air pollution abatement efforts as well as climate change mitigation to achieve better health and environmental protection. It also noted the significant cost savings of using integrated approaches. The conclusions and recommendations of the workshop were considered by the Convention's Executive Body (Meeting of the Parties) in December 2008.

8. The Convention is using different models and methods to analyse environmental effects and to calculate the necessary emission abatement and related costs. In this way, cost-effective pollution control strategies can achieve the desired environmental targets with the least overall expenditure. Recent use of the Greenhouse Gas and Air Pollution Interactions and Synergies (GAINS) integrated assessment model, developed by the Convention's Centre for Integrated Assessment Modelling, has explored synergies and trade-offs between emissions of air pollutants

and GHGs, for current and projected energy use. The model includes both end-of-pipe controls and non-technical measures, such as behavioural changes in traffic or economic instruments.

9. The Convention's scientific bodies are also incorporating climate change issues into their programmes of work. The European Monitoring and Evaluation Programme (EMEP), which monitors and models air quality, is involved in reporting and estimating emissions. Reporting requirements of the Parties have been harmonized with those of UNFCCC. EMEP is also responsible for the integrated assessment modelling work described above. The international programmes of the Working Group on Effects monitor and model environmental and human health effects of air pollution. Increasingly, these need to take account of the links to observed or predicted changes in climatic conditions. They also provide long-term monitoring of data that can identify changes that might be associated with a changing climate.

10. Discussions in the Convention's bodies have drawn attention to the strong links between air pollutant and GHG emissions and have highlighted specific issues where integration of strategies is needed. For example, the current emphasis on renewable energy is leading to increased use of wood as a fuel. However, unless appropriate boiler technology is used, this can also lead to increased air pollution.

11. Further work will be needed to formulate integrated strategies for addressing air pollution and climate change, the benefits of which were shown in the context of the Convention on Long-range Transboundary Air Pollution, and to further explore potential for integrated strategies, including those that address both mitigation and adaptation together.

## 2. Water

12. The intrinsic relation of the hydrological cycle – and thus water availability, quality, and services – to climate change makes adaptation critical for water management and the water sector in general. The ECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes (Water Convention) is an important legal framework for the development of adaptation strategies, in particular in the transboundary context.

13. At their fourth meeting in Bonn, Germany, in 2006, the Parties to the Water Convention took a decisive step to supporting the development of adaptation strategies by agreeing to elaborate a guidance document on water and adaptation to climate change. A draft has now been prepared by the Task Forces on Water and Climate and on Extreme Weather Events, both under the Convention's Protocol on Water and Health. This marks the first attempt under any convention to flesh out a climate change adaptation strategy in the water sector with a particular emphasis on transboundary issues. Based on the concept of integrated water resources management, the Guidance will provide advice on how to assess impacts of climate change on water quantity and quality, how to perform risk assessment, including health risk assessment, how to gauge vulnerability, and how to design and implement appropriate adaptation measures. The Guidance is expected to be formally adopted in November 2009 at the next meeting of the Parties.

14. One important step in the Guidance's preparation was a workshop on climate change adaptation in the water sector organized under the Water Convention and the Protocol on Water and Health (Amsterdam, 1–2 July 2008). The workshop, which allowed for an exchange of experience in the region, an assessment of information needs for adaptation strategies and a discussion of the benefits of and mechanisms for transboundary cooperation, touched upon the institutional, policy, legal, scientific and financial aspects of adaptation in the water sector and included cross-cutting issues such as education. The workshop highlighted current challenges such as still limited transboundary cooperation, the focus on short-term rather than long-term measures, and the need to consider climate change together with other global drivers of change, e.g. the energy and food crises and changes in production and consumption patterns.

15. The Protocol on Water and Health, the first legally binding instrument aimed to achieve the sustainable management of water resources and the reduction of water-related disease, is also highly relevant to climate change adaptation. It establishes joint or coordinated surveillance and early-warning systems, contingency plans and response capacities, as well as mutual assistance to respond to outbreaks or incidents of water-related disease, especially those arising from extreme weather events. The Protocol's Ad Hoc Project Facilitation Mechanism is a funding tool for implementation of the Protocol at the national level; its provisions on safe drinking water and sanitation are also of relevance to climate change.

16. Further work will focus on encouraging member States to adopt and implement the Guidance on Water and Climate Adaptation.

### 3. Access to information, public participation and justice

17. The ECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention) constitutes the only legally binding instrument so far to implement principle 10 of the Rio Declaration on Environment and Development, which provides for the participation of citizens in environmental issues by giving them appropriate access to the information concerning the environment held by public authorities, including access to judicial or administrative proceedings, redress and remedy. Access to scientifically based information and public participation in decision-making on environmental issues – as provided by the Convention – are widely recognized as an important foundation for climate change mitigation efforts. UNFCCC, for example, underlined the importance of these principles at its thirteenth session, encouraging Parties to facilitate access to data and information and to promote public participation in addressing climate change and its effects and in developing adequate responses.<sup>7</sup> Environmental information can help to raise awareness about climate change issues and to strengthen synergies between mitigation and adaptation needs. Public participation in this process ensures that social values and trade-offs are represented in political decisions on climate-related issues.

18. ECE was a co-organizer of the international conference, "The Role of Information in an Age of Climate Change" (Aarhus, Denmark, 13–14 November 2008). The event, marking the

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<sup>7</sup> Decision 9/CP.13, annex, paras. 14 and 15 (FCCC/CP/2007/6/Add.1), amended the New Delhi Work Programme on article 6 of the UNFCCC. The thirteenth session was held on 3-15 December 2007 in Bali, Indonesia.

Aarhus Convention's tenth anniversary, brought together leading scientists, policymakers, government authorities, non-governmental organizations, and representatives of the private sector to promote public access to information and public participation in addressing climate change.

19. The Protocol on Pollutant Release and Transfer Registers (PRTRs), adopted in May 2003, is the first legally binding international instrument on PRTRs. PRTRs assist Governments in collecting information on the emission of GHGs and toxic or hazardous substances from industrial facilities and other sources. By making this information available to decision-makers and the wider public, PRTRs contribute to enhancing companies' environmental performance, regional mitigation efforts and the fight against global warming and climate change.

20. Further work will focus on using the Aarhus Convention as a tool to help implement Article 6 (on education, training and public awareness) of the UNFCCC.

21. In general, further work across all of ECE's Conventions will focus on how these can support UNFCCC, and how to promote the synergies between the two, both at the level of individual multilateral environmental agreements (MEAs) and at the country level. It will also be important to better understand how the specific mandate of ECE's MEAs can be complemented by ECE's general mandate in the area of climate change, and to fully streamline climate change as well as the concept of the Green Economy/Green New Deal in all its work.

#### 4. Strategic environment assessment

22. The ECE Convention on Environmental Impact Assessment in a Transboundary Context (Espoo Convention) provides a framework for considering transboundary environmental impacts in national decision-making processes.

23. The Convention's Protocol on Strategic Environment Assessment (SEA), not yet in force, will ensure that Parties integrate consideration of the environment into their plans and programmes at a very early planning stage. SEA can be used to introduce climate change considerations into development planning. This is in line with the conclusions reached at the high-level event "The Future in Our Hands", convened by the Secretary-General in September 2007, as well as the recommendation of Intergovernmental Panel on Climate Change (IPCC)<sup>8</sup> that climate change mitigation and adaptation be integrated into an overarching sustainable development strategy. IPCC also concluded that consideration of climate change impacts in development planning, as might be provided by SEA, is important for boosting adaptive capacity, e.g. by including adaptation measures in land-use planning and infrastructure design or by reducing vulnerability through existing disaster risk reduction strategies.<sup>9</sup>

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<sup>8</sup> IPCC, *Climate Change 2007 Synthesis Report*

<sup>9</sup> IPCC, WG II, Summary for policymakers.

## **B. Sustainable transport solutions**

24. Transport is a significant and growing contributor to global climate change. According to some estimates, it is responsible for 13 per cent of all anthropogenic emissions of GHGs and for almost one quarter of the world's total CO<sub>2</sub> emissions from fossil fuel combustion.

25. In May 2008, the ECE took part in the International Transport Forum (ITF) Ministerial Session "The Challenge of Climate Change" of the Organisation for Economic Co-operation and Development (OECD) held in Leipzig, Germany, the first global meeting of transport ministers that focused on energy and climate change challenges relevant to the transport sector. Climate change mitigation and adaptation activities in the transport sector focus on different means of CO<sub>2</sub> abatement, such as: (a) innovative engine technologies to increase fuel efficiency; (b) the use of sustainable biofuels; (c) improved transport infrastructure, including intermodal transport and logistics to avoid road congestion; (d) the dissemination of consumer information on eco-driving; and (e) the implementation of legal instruments. In their key messages, transport ministers urged the ECE World Forum for Harmonization of Vehicle Regulations (WP.29) to accelerate the work to develop common methodologies, test cycles and measurement methods for vehicles, including CO<sub>2</sub> emissions.

26. In this respect, the World Forum WP.29 set up new working groups for the development of worldwide harmonized light vehicle emission test procedures and for environmentally friendly vehicles. The World Forum has also established a large number of measures for climate change mitigation within the framework of the 1958 and 1998 Agreements, and continues to work on new requirements to improve fuel efficiency through new engine and vehicle technologies. In November 2008, the World Forum noted that a possible strategy for the automotive sector to contribute to the abatement of emissions was to pursue (a) improved energy efficiency and the use of sustainable biofuels as a short-term objective (2015), (b) the development and introduction into the market of plug-in hybrid vehicles as a mid-term objective (2015–2025), and (c) the development and introduction into the market of electric vehicles as a long-term objective (2025–2040). This strategy would shift the automotive sector from the use of fossil fuels to the use of hydrogen and electric energy. The transport sector will have limited results in this area unless the energy sector ensures the sustainable and cost-effective generation of electricity and production of hydrogen.

27. The World Forum previously adopted amendments to ECE regulations to limit the maximum admissible level of vehicle emissions for various gaseous pollutants (e.g. carbon monoxide, hydrocarbons, NO<sub>x</sub>) and particulate matter. These have resulted in substantially lower emissions limits for new private cars and commercial vehicles. Moreover, ECE Regulations were amended to include electric and hybrid vehicles as well as vehicles with engines fuelled with liquefied petroleum gas or compressed natural gas. At the present time, the World Forum is developing a common methodology and measurement method to evaluate environmentally friendly vehicles, hydrogen and fuel cell vehicles and is considering a number of energy efficiency measures, such as the use of other alternative energy sources like biofuels, including biogas, the installation of engine management systems in vehicles (e.g. the stop-and-go function), intelligent transport systems, tyre-pressure monitoring systems and the development of tyres with low rolling resistance. Once a consensus is reached, many of these innovative

technologies are likely to be added to the ECE regulations, which will help increase vehicles' energy efficiency.

28. As concerns fuel-quality standards, in 2007 the World Forum demonstrated the close inverse link between the market fuel quality and the emissions of pollutants from motor vehicles. It recognized that further reduction of emissions required cleaner fuel to be available to consumers. The lack of harmonized fuel quality standards was seen as hampering the development of new vehicle technologies. Supported by UNEP and the International Petroleum Industry Environmental Conservation Association, the World Forum is committed to developing a necessary standard on market fuel quality, thus enabling vehicles to use fuels that minimize vehicle emission levels. At the Ministerial Conference on Global Environment and Energy in Transport (MEET), held in January 2009 in Tokyo, ministers responsible for environment and energy in the transport sector reiterated the ITF key messages and welcomed the ongoing efforts of the World Forum for realizing low carbon and low pollution transport system. MEET encouraged countries to strengthen international cooperation to develop and harmonize procedures for testing exhaust emissions, to launch incentives for the production and use of environmentally friendly vehicles and clean fuels, and to promote public transport through the World Forum. In this respect, the World Forum is urged to develop the necessary uniform recommendations for the quality of market fuels.

29. With regard to the reduction of CO<sub>2</sub> emissions, it has called for an integrated approach, taking into account measures for the existing fleet of vehicle, such as eco-driving, better transport infrastructure, including traffic management systems. ECE will continue to play a proactive role in the coordination of this work together with Governments and all sector stakeholders to foster the development of intelligent transport systems and their implementation in all transport modes and infrastructure.

30. ECE, in cooperation with the other regional commissions, has recently submitted a funding request to the United Nations Development Account (UNDA) for further work to facilitate climate change adaptation in the transport sector through the assessment of CO<sub>2</sub> emissions. This project aims to develop a standard methodology for evaluating the CO<sub>2</sub> footprint of land transport with a view to raising awareness among Governments and other stakeholders and providing a scientific basis for sustainable transport policies. Member states are invited to support the ECE funding request to UNDA and consider the eventual further co-funding of the project.

31. The Transport Health and Environment Pan-European Programme (THE PEP), a joint project of ECE and the World Health Organization Regional Office for Europe, was initiated to help achieve more sustainable transport patterns and a better reflection of environmental and health concerns in transport policy. In particular, THE PEP also promotes sustainable urban transport, including alternative modes of transport, in the region.

### **C. Energy efficiency in production and use**

32. As energy is a major market in the ECE region, which contains 40 per cent of the world's natural gas reserves and 60 per cent of its coal reserves, a number of ECE activities promote a



sustainable energy development strategy, a key to the region's climate change mitigation and adaptation efforts. The combustion of fossil fuels, the mainstay of the region's electricity generation, is also a major source of GHG emissions. The sustainable energy projects of ECE aim to facilitate the transition to a more sustainable and secure energy future by optimizing operating efficiencies and conservation, including through energy restructuring and legal, regulatory or energy pricing reforms. ECE projects also encourage the introduction of renewable energy sources and the use of natural gas until cleaner energy sources are developed and commercially available, as well as the greening of the coal-to-energy chain.

33. For the period 2006–2009, the ECE Energy Efficiency 21 (EE21) programme is working to promote regional cooperation to enhance countries' energy efficiency and to reduce their GHG emissions, thus helping them meet their international treaty obligations under UNFCCC and the ECE conventions. Energy efficiency is achieved by focusing on more efficient production, conservation and use of all energy sources in order to minimize GHG emissions.

34. Within the overall EE21 programme, ECE manages the Financing Energy Efficiency Investments for Climate Change Mitigation project, with a budget of approximately US\$ 7.5 million, financed by the Global Environment Facility, Fonds Français pour l'Environnement Mondial and the European Business Congress. This project is currently establishing a privately managed equity fund with private and public sector partners. The fund, which will benefit from both public and private sources, will target energy efficiency and renewable investment projects in 12 countries in Central Asia and Eastern and South-Eastern Europe.

35. Another project within the EE21 programme is RENEUER, a regional activity that has been supported by the United States Agency for International Development, the United States Department of Energy, France and other bilateral donors. RENEUER promotes sustainable development in the region by overcoming regional barriers and creating favourable conditions for the introduction of advanced technologies for the efficient use of local energy resources.

36. Outreach activities to other regional commissions in the context of energy efficiency for climate change mitigation are being organized under the Global Energy Efficiency 21 project. This project, launched in December 2008 in Poznan, Poland, will develop a systematic exchange of information on capacity-building, policy reform and investment project financing to promote cost-effective energy efficiency improvements that will reduce air pollution, including GHGs.

37. The work of two expert groups under ECE's Committee on Sustainable Energy relates to climate change mitigation. The Ad Hoc Group of Experts on Coal Mine Methane (CMM) promotes the recovery and use of methane gas from coal mines to minimize GHG emissions. In February 2008 in Szczyrk, Poland, an ECE-supported workshop assessed prospects for CMM recovery and use, noting that "Global potential for CMM projects to contribute to climate change mitigation and take advantage of the carbon markets is very strong because a reduction of one ton of methane yields reductions of 18 to 23 tons of carbon dioxide equivalent".<sup>10</sup> However, the economic feasibility of such projects typically requires a clear regulatory and legal framework, reasonable access to markets and relatively stable prices.

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<sup>10</sup> ECE/ENERGY/GE.4/2008/4, para. 11.

38. The Ad Hoc Group of Experts on Cleaner Electricity Production from Coal and Other Fossil Fuels held its first meeting in November 2007. Its programme of work includes reviewing the prospects for cleaner electricity production from fossil fuels and measures or incentives to promote investment in cleaner electricity production. The Group also assesses the regulatory needs for promoting investment in cleaner electricity production from fossil fuels, appraises the comparative advantages of investments in new capacities and analyses issues related to carbon capture and storage technologies, especially in the context of emerging economies in the ECE region.<sup>11</sup>

39. Further work will focus on strengthening the 'Financing Energy Efficiency Investments for Climate Change Mitigation' project and its appeal contained in the Declaration of the Sixth Ministerial Conference "Environment for Europe" held in Belgrade, in October 2007, concerning public sector participation as investors in the energy efficiency fund which is being created through the Energy Efficiency 21 Project.

#### **D. Energy-efficient housing**

40. Due to both its high GHG emissions and its large potential for energy-saving measures, the housing sector plays a critical role in climate change mitigation. IPCC estimates that the global potential to reduce emissions at roughly 29 per cent for the residential and commercial sectors.<sup>12</sup> The energy-saving potential in this sector is also considerable: UNEP estimates that in Europe, buildings account for roughly 40 to 45 per cent of energy consumption, emitting significant amounts of CO<sub>2</sub>. Residential buildings account for the lion's share of these emissions.<sup>13</sup>

41. Energy-efficient buildings can contribute to climate change mitigation and adaptation by reducing buildings' energy consumption as well as by making them more resistant to severe weather events. Improving energy efficiency is especially important in the ECE region, where projected increased housing construction and homeownership are likely to be accompanied by higher electricity consumption and thus growing emissions. ECE has a programme geared to achieving maximal energy efficiency in the region's housing, which will allow countries to share experience and good practices in reducing energy consumption in the residential sector, both vis-à-vis existing housing stock and new residential housing construction. This is expected to especially improve energy performance in parts of the region where progress is hampered by low innovation capacity and by a lack of knowledge about technical options to improve the thermal efficiency of existing buildings, and by outdated building codes that prevent countries from embracing the latest energy-efficient construction techniques. The programme will also include a wide-ranging regional assessment – featuring financing mechanisms, case studies, workshops and seminars for policymakers – and will benefit from close collaboration with above-mentioned EE21 project.

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<sup>11</sup> ECE/ENERGY/GE.5/2007/5.

<sup>12</sup> Quoted in Deda, P. and G. Georgiadis, "Tackling climate change 'at home': trends and challenges in enhancing energy efficiency in buildings in the ECE region", in ECE Annual Report 2009.

<sup>13</sup> Ibid.

42. To date, ECE has published country profiles on the housing sectors of Albania, Armenia, Bulgaria, Georgia Lithuania, Poland, Republic of Moldova, Romania, Russian Federation, and in the then Serbia and Montenegro. In 2009, two workshops (in Sofia and Vienna) will address the issue of energy efficiency in housing. A group of interested experts will assist the host countries in shaping the programme of the events and will provide the necessary expertise. In September 2008, the Committee on Housing and Land Management addressed energy efficiency in housing in the region, focusing on the legislative framework and incentives.<sup>14</sup>

43. Further work is needed to promote policies and strategies on energy efficiency, low energy building standards, use of alternative energy sources in individual buildings and settlements.

#### **E. Sustainable forestry and timber**

44. The forest and timber sector contributes to climate change mitigation through carbon sequestration in forests, carbon storage in forests and harvested wood products and substitution of more carbon intensive materials. However forests are also vulnerable to climate change with some damage already visible and increased uncertainty about the long term risks. Forest managers are developing new adaptation strategies with better risk management approaches.

45. According to the forthcoming ECE Annual Report, the annual increase of carbon in EU-27 forests is equivalent to 8.6 per cent of GHG emissions in the European Union (EU). In Europe, forests sequester approximately 140 million tons of carbon a year. Wood products are a store of carbon, keeping it from release to the atmosphere. Forests store more than 80 per cent of terrestrial aboveground carbon and more than 70 per cent of soil organic carbon. They are also the source of wood energy that can substitute fossil energy, thereby reducing GHG emissions. Wood can also be a substitute for non-renewable construction materials such as plastics, steel or concrete.

46. The ECE Timber Committee has an active role in monitoring and analysing these trends, and promoting policy forums on climate change in the forest sector, as part of its work to promote sustainable forest management. It collects basic data on forest resource assessment (e.g. carbon sequestration and storage in forests) and the production of and trade in forest products (e.g. harvested wood products, substitution by wood of other, more carbon-intensive materials). It contributes to policy monitoring by reporting on qualitative indicators of sustainable forest management and by publishing a chapter in the Forest Products Annual Market Review on policies, which in recent years has included a comprehensive update on climate change policies affecting the forest sector. In September 2008, ECE hosted a workshop on “Harvested Wood Products in the Context of Climate Change Policies” to discuss different approaches to account for carbon stored in wood products and their economic, social and ecological impacts, and has transmitted this workshop's results to other forums, including the Poznan climate change negotiations. With partners, it organized a plenary session on Forest and Climate Change during the European Forest Week (Rome, 21–24 October 2008). Finally, the ECE Timber Section has analysed the situation as regards wood availability and potential wood supply, two crucial

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<sup>14</sup> ECE/HBP/2008/2

aspects for policy formulation for climate change, for renewable energy and for the forest sector. The Strategic Review of the timber subprogramme gave priority to climate change and bioenergy for the period 2008-2013. The relevant bureaux will decide on specific activities at their meeting in April 2009.

47. Further work by the Timber Committee will continue to build on the comparative advantage of ECE and the Food and Agriculture Organization of the United Nations in areas such as data supply, analysis of trends and policies, convening of policy forums, and exploring links with other sectors, such as energy, human settlements and environment. The ultimate objective is to provide policymakers with the tools necessary for informed decision making, especially to make the necessary trade-offs between climate change services and the other goods and services of the forest.

#### **F. Biomass enterprise development and trading**

48. Since 1998, ECE has been directing a major cross-sectoral project for enterprises in the biomass sector in the region. One of the central tasks of climate change mitigation is to replace fossil fuels with alternative energy. The project aims to strengthen sustainable biomass supply from selected countries in the ECE region to energy producers in the EU, with a focus on agro- and wood residues, whose use is an important alternative to the use of (food) crops for fuel. The project also seeks to improve the logistics chain of biomass trade from producer to the end-user through improved inland transportation, port and trade logistics, and customs cooperation with respect to imports and exports of biomass. Two further aims of the project are facilitating the exchange of good practice with the private sector and exploring cross-sectoral approaches that take into account environment, energy, trade and transport issues.

## **II. OTHER ECE ACTIVITIES RELATED TO CLIMATE CHANGE**

### **A. The “Environment for Europe” ministerial process**

49. The “Environment for Europe” process provides a pan-European political framework for the discussion of key policy issues, development of programmes and launching of initiatives to improve the region’s environment and harmonize environmental policies. At the Sixth Ministerial Conference “Environment for Europe” (Belgrade, 10–12 October 2007), environment ministers explicitly recognized the urgent need to address climate change in the ECE region. The Conference saw the launch of the Belgrade Initiative<sup>15</sup>, a subregional effort in South-Eastern Europe to support subregional implementation of the UNFCCC through a Climate Change Framework Action Plan and a virtual climate change-related centre in Belgrade designed to help raise awareness and build capacity.

### **B. ECE Strategy on Education for Sustainable Development**

50. The ECE Strategy of Education for Sustainable Development (ESD), adopted in 2005 by ministers and other officials from education and environment ministries across the ECE region,

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<sup>15</sup> ECE/BELGRADE.CONF/2007/20.

endeavours to integrate key themes of sustainable development into all education systems. It constitutes the regional pillar of implementation of the United Nations Decade of ESD. At the joint session on ESD held during the Sixth Ministerial Conference “Environment for Europe”, environment and education ministers referred to the problems posed by climate change as a “leading example of where ESD could be applied to daily life, as climate change affects everyone and ESD offers an essential way to shape knowledge and attitudes, and hence could help us to address these problems”.<sup>16</sup>

### **C. Environmental Performance Reviews**

51. The ECE Environmental Performance Reviews (EPRs), based on the OECD/Development Assistance Committee peer review process, aim to improve individual and collective environmental management. Since 1996, Central, South-East and Eastern European as well as Central Asian countries have been reviewed by ECE, in addition to a few countries in transition that were reviewed in cooperation with OECD (Bulgaria, Belarus, Poland and the Russian Federation). A second round of EPRs have already been carried out for Belarus (2005), Bulgaria (2000), Estonia (2001), Republic of Moldova (2005), Ukraine (2006), Montenegro and Serbia and (2007) and Kazakhstan (2008), and are in process for Kyrgyzstan, Ukraine and Uzbekistan.

52. By disseminating relevant information, they contribute to enhancing public access to information about the environment and environmental issues and thus to more informed decision-making, relevant to the climate change debate. In future, they can provide a comprehensive analysis of instruments used in the context of regional climate change mitigation and adaptation efforts, a means to share good practice and highlight gaps in this area, and a way to offer important policy recommendations.

### **D. Statistics related to climate change**

53. The global official statistics community still only engages in an ad hoc way with the issues of climate change. The Conference of European Statisticians, is reviewing the possibility of setting up a task force, subject to the approval of its Bureau, to review the methodology for the compilation of GHG emissions in one of three possible sectors: housing, forestry or transport. The feasibility of joint sectoral activities within ECE will be explored. Any work undertaken by the Conference of European Statisticians will be carried out in close collaboration with UNFCCC. The work will be conducted within the global statistical action plan to deal with climate change and official statistics to be coordinated by the United Nations Committee of Experts on Environmental-Economic Accounting and the United Nations Statistical Commission.

54. Statistics on emissions should become part of the regular production and dissemination process of official statistics at the national level. In this context, national statistical offices should gradually take on the responsibility for regularly compiling emission statistics and contributing to the review of guidelines to assembling emission registers.

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<sup>16</sup> ECE/BELGRADE.CONF/2007/4/Add.3, para. 14.

55. Further work will be needed to contribute to the global initiative to mainstream the environment and climate change dimensions in official statistics and to strengthen the capability of countries to produce high quality basic statistics for climate change analysis following internationally agreed standard concepts and classifications; to review methodologies in sectoral statistics taking into account the requirements of climate change related reporting; to promote the production of robust, authoritative and comparable statistics for climate relevant emissions and the human activities that cause them as the basis for discussions at national, sub-national and international levels; and to support further joint work among the environmental authorities, statistical institutes and research community to improve the production of climate change data as part of official statistics that are needed for the climate policy debate.

#### **E. Innovation and financing**

56. ECE has organized workshops and seminars with a view to enhancing the understanding of the process of technology diffusion, identifying possible barriers to take-up and providing training and technical assistance to the region's Governments on their innovation policies. This includes a financing dimension, in particular that of early-stage financing of innovative enterprises. During the International Conference on Investing in Innovation, held in April 2008 in Geneva, a session on how environmental challenges can be addressed through innovation brought together policymakers and specialized financial intermediaries. They discussed emerging trends in the allocation of risk capital for eco-investing and the type of policies required to encourage the mobilization of private financing in this area.

57. Efforts to mitigate or adapt to climate change are significantly boosted not only by the dissemination of existing technologies, but also by the introduction of new ones. Given the scale and systemic nature of the necessary shift towards low-carbon technologies, there is a clear link between the challenges posed by climate change mitigation and innovative policies. In the future, work on innovation and its related financing and intellectual property aspects will vitally inform climate-change policy.

58. Future work will continue the policy dialogue on addressing environmental challenges such as climate change through innovation and the establishment of a supportive environment for the financing of eco-innovation.

### **III. RECOMMENDATIONS FOR FURTHER ACTION**

59. Recognizing the high relevance and importance of ECE's work on climate change adaptation and mitigation, and in view of the importance of combating climate change, the Commission is invited to:

(a) reiterate that the ECE region has a crucial role in contributing to the local and regional success of UNFCCC, as emphasised by ECE member States at the Sixth Ministerial Conference "Environment for Europe;

(b) confirm the importance of ECE as a convening agency on climate change, with a significant role in the consultative and substantive process in support of global, regional and national action in the pan-European region, as proposed by the Secretary-General;

(c) endorse ECE's climate change work in progress; and

(d) bearing in mind that further work needs to be developed along the lines set out above, request the Sectoral Committees to take up future activities as appropriate to address the challenges of Climate Change, with due account to the work of other partner organizations and developments in this area at the global level.

60. Noting that efforts to combat climate change lend themselves to an intersectoral approach, the Commission may also wish to encourage all Sectoral Committees to give special emphasis to cross-cutting climate change activities, including by considering how their current work programmes / ongoing activities may be suitably adjusted, as well as by developing new modalities of working together across sectors and regions.

61. In conclusion, the Commission may consider requesting the Executive Committee to keep the issue of ECE's activities related to climate change under review and to report back to the Commission at its next session.

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