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ENERGY FOR SUSTAINABLE DEVELOPMENT IN THE UNECE REGION AND INPUT TO THE 2006-2007 CYCLE OF THE COMMISSION ON SUSTAINABLE DEVELOPMENT

Note by the secretariat

INTRODUCTION

1. At its eleventh session, the Commission on Sustainable Development (CSD) decided that its multi-year programme of work beyond 2003 would be organized on the basis of two-year implementation cycles, with each cycle focusing on selected thematic clusters of issues. Each implementation cycle would consist of a review year and a policy year. In the review year, the Commission would evaluate progress made in implementing sustainable development goals and identifying obstacles and constraints, while in the policy year it would decide on measures to speed up implementation and mobilize action to overcome these obstacles and constraints. The Commission furthermore invited the regional commissions to organize regional implementation meetings in order to provide regional inputs for the work of the Commission, preferably before the review sessions.

2. The CSD during its second two-year cycle (2006-2007) and its fourteenth and fifteenth sessions (CSD-14 and CSD-15 respectively) is focussing on the thematic clusters: energy for sustainable development, industrial development, air pollution/atmosphere and climate change. However, it is now consistently noted that energy for sustainable development is the issue binding these thematic clusters together.

3. This document is intended to provide an overview of the input from the UNECE Committee on Sustainable Energy to the 2006-2007 cycle of CSD.

4. The sustainable energy policy objectives set out in UNECE's contribution to CSD-9 have provided the basis for much of this input since they remain as relevant today as they did in 2000.

I. UNECE'S CONTRIBUTION TO CSD-9: "ONE MORE STEP ON THE PATH TO A SUSTAINABLE ENERGY FUTURE"

5. In UNECE's contribution to CSD-9: "One More Step on the Path to a Sustainable Energy Future" (ECE/ENERGY/43), six sustainable energy policy objectives were set out and these remain as relevant today as they did six years ago. Delegates from governments, the private sector and non-governmental organizations endorsed this contribution in 2000. The objectives are:

(a) sustained access to high quality energy services for all individuals in the UNECE region;
(b) security of energy supplies in the short, medium and long term;
(c) the reduction in health and environmental impacts resulting from the production, transport and use of energy;
(d) well-balanced energy network systems across the whole of the UNECE, tailored to optimise operating efficiencies and overall cooperation;
(e) sustained improvement in energy efficiency, in production and use, particularly in countries with economies in transition; and
(f) a steady reduction in energy-related environmental impacts through the development and application of environmentally sound and economically viable technologies, transition from pollution-intensive technology options (such as those producing greenhouse gases and other pollutants) to less intensive ones, and increased use of renewable energy resources.

6. These objectives provided the basis for the energy component of the background paper that was prepared for the Second UNECE Regional Implementation Meeting, December 2006.

II. SECOND UNECE REGIONAL IMPLEMENTATION FORUM ON SUSTAINABLE DEVELOPMENT

7. In order to provide substantial inputs for the 2006 review year and to contribute to CSD-14, UNECE held its second Regional Implementation Forum, Geneva, 15-16 December 2005. As a basis for the discussions, the secretariat prepared a background document "Energy for Sustainable Development, Industrial Development, Air Pollution/Atmosphere and Climate Change: Achievements, Trends and Challenges in the UNECE Region" (ECE/AC.25/2005/3).

8. In accordance with the CSD's multi-year programme of work, the Forum assessed the region's progress in implementing sustainable development commitments in the areas of energy for sustainable development, atmosphere/air pollution, climate change and industrial development as well as cross-cutting issues. The outcome of the discussions is reflected in the Chair's summary "UNECE Contribution to Cycles of the Commission on Sustainable

Development" (E/ECE/1442). This document was submitted to and presented at the fourteenth session of the Commission on Sustainable Development (CSD-14), New York, 1-12 May 2006. The secretariat also produced a report on the outcomes of the Regional Implementation Forum (ECE/AC.25/2005/2).

9. At its sixty-first session, the Commission noted the success of this Forum. It found that the assessment of the region's progress in implementing sustainable development commitments in the areas of energy for sustainable development, atmosphere/air pollution, climate change, industrial development and cross-cutting issues had clearly shown the various challenges and experiences of countries in the region. Due to the interlinkages between the issues, the Commission considered that intersectoral cooperation at the national and international levels was vital to achieving further progress in these areas. Further, the Commission hoped that the outcomes of this and other regional implementation forums would be taken into account at the global level, and it encouraged UNECE member States to be active at the CSD.

III. CSD-14

10. The fourteenth session of the Commission on Sustainable Development (CSD-14), addressed a particularly important thematic cluster for achieving sustainable development goals: energy for sustainable development, industrial development, atmosphere/air pollution and climate change.

11. CSD-14 exchanged ideas on barriers and constraints to as well as progress made in the implementation of sustainable development goals in these areas. The findings will serve as a basis for developing and negotiating policy recommendations at the fifteenth session of the CSD (CSD-15) in 2007.

12. The UN regional commissions organized a series of discussions during CSD-14 in order to exchange regional experiences. The discussion for the UNECE region included a presentation on the outcomes of the Second UNECE Regional Implementation Forum on Sustainable Development, held in Geneva in December 2005.

13. During the UNECE regional discussion session, Mr. Jean-Christophe Fuëg, Special Representative for International Energy Affairs, Swiss Federal Office of Energy, and Vice Chairman of the Committee on Sustainable Energy, delivered a presentation focusing on "Energy for Sustainable Development: Region-Specific Barriers and Constraints, Lessons Learnt and Good Practices".

14. The presentation highlighted that the UNECE sub-region faces a number of common challenges, but also a number of specific ones. It was noted that the three pillars of sustainable energy as defined by the International Energy Agency, notably energy security, economic sustainability and environmental sustainability, are by and large applicable to the UNECE region.

(a) Energy security: this is a common concern throughout the UNECE region, albeit with a different slant, depending on the sub-region:

(i) Importing countries, largely the European Union and the United States, are concerned about security of supply, especially in the light of declining indigenous oil and gas production, increasing world energy demand and rising oil and gas prices.
(ii) Energy producing countries, first and foremost the Russian Federation, are concerned about security of demand to underwrite the necessary investment.
(iii) A shared concern is the transit of energy through third countries.

(b) Economic sustainability: the UNECE distinguishes itself from much of the rest of the world by the fact that access to energy is almost universal in the region. In a number of countries, however, there remains the challenge of affordability. Other economic concerns are shared by the rest of the world, notably:

(i) Rising energy prices – both pre- and post-tax – and their impact on economic growth and competitiveness.
(ii) The huge investment needs, not so much to add new capacity, but to replace the ageing capacity. In the electricity sector, investment decisions are complicated by issues such as inter-fuel pricing, tax and emissions quotas. These all require long-term policies.
(iii) A number of UNECE countries decoupled economic and energy growth decades ago, but the energy efficiency gains have slowed down in recent years. The countries with economies in transition, however, still have enormous untapped energy efficiency potential.

(c) Environmental sustainability: climate change is recognized as a major energy-induced environmental problem. Most UNECE countries have ratified the Kyoto Protocol and adopted policies to seek to meet their targets.

15. In terms of the remedies, the following were offered:

(a) Energy efficiency: the countries with economies in transition have huge energy efficiency potential. The European Union and North America are rekindling the slackened efforts to reduce energy intensity with a new array of polices, technology options and research, development and deployment initiatives. Awareness of this issue is rising as illustrated by the European Union Green Book, initiatives in the housing/building sector, etc.

(b) Geographic diversification: here there is reduced scope for benefits since the world will inexorably depend on fewer suppliers of oil and gas.

(c) Technological diversification: the energy mix depends on the endowment of national resources and policy choices. Options include promotion of renewables in the electricity, heat and transport sectors; heavier reliance on domestic coal – coupled with cleaner coal technologies; and nuclear energy.

16. The CSD also emphasized the need for integrated approaches to combating air pollution and climate change. It was observed that air pollution problems were far from solved, even in developed countries, and greenhouse gas (GHG) targets were often difficult to achieve. A

number of pollution sources, such as ship and aircraft emissions, and in many countries motor vehicle emissions, needed future attention.

17. It was consistently noted that energy for sustainable development was the issue binding together the thematic clusters for CSD-14 and CSD-15. Key challenges for the UNECE region specifically were to increase the availability of energy services and reduce energy-related environmental and health problems, in particular those related to air pollution and climate change.

18. In the main sessions, and in more depth at side events, attention was drawn to the importance of the various regional air pollution control agreements and initiatives in operation or under development. UNECE's Convention on Long-range Transboundary Air Pollution is the oldest such regional agreement and was described by the Secretary-General as "a model for reducing transboundary air pollution" in his report to the CSD. The need was stressed for continued outreach activities by the Convention and for collaboration between regions to promote progress on a more global scale.

IV. REPORT ON CSD-14

19. A report on the fourteenth session of the Commission on Sustainable Development was prepared by the CSD secretariat entitled "Commission on Sustainable Development, Report on the fourteenth session (22 April 2005 and 1-12 May 2006) Economic and Social Council Official Records, 2006, Supplement No. 9", E/2006/29(SUPP) / E/CN.17/2006/15(SUPP).

20. The CSD-14 Report includes the Chairman's Summary of the thematic discussions on energy for sustainable development, industrial development, air pollution/atmosphere and climate change. This summary also provides an overview of the obstacles and constraints, lessons learned/best practices, means of implementation and continuing challenges. It should be noted that the text refers not only to the UNECE region but also globally. Many, if not all, of the activities of the UNECE Sustainable Energy Programme have some facet to them that is global in nature and/or have implications/benefits for countries outside the UNECE region.

21. The Chairman's Summary of CSD-14 noted that achieving sustainable development goals requires energy use and industrial development but, in turn, they are major contributors to air pollution, atmospheric problems and GHG emissions. It further noted that despite some progress in diversifying the energy supply, fossil-fuel based energy resources will continue to play a dominant role in the supply mix for the foreseeable future.

22. Energy efficiency was identified as providing a win-win opportunity with many benefits, including greater industrial competitiveness, better energy security and substantial reductions in carbon dioxide and other GHG emissions in a cost-effective way. There was noted to be considerable scope for improving energy efficiency in households, the transport sector and industry, including the energy industry, by changing consumption and production patterns, behaviours and lifestyles.

23. At CSD-14, there was overall agreement that a sensible mix of energy from all sources will be needed in order to meet the rising global energy demand with optimal efficiency, with advanced, cleaner fossil fuel technologies playing an important role. The importance of developing renewable sources of energy was highlighted, while some participants also noted that it will be some time before renewable energy sources are able to deliver the large amounts of energy required for bulk energy needs for most countries. Appropriate policies and incentives and providing more resources for research and development can reduce this time.

24. A summary is provided below of the key obstacles and constraints, lessons learned/best practices, means of implementation and continuing challenges facing the energy sector as identified at CSD-14 and as contained in the CSD-14 Report (E/2006/29 / E/CN.17/2006/15).

(a) Obstacles and Constraints

25. A range of obstacles and constraints to delivering on energy for sustainable development were identified, including:

(i) Improving access to modern energy services, high equipment costs, insufficient human and technical capacity to sustain and maintain equipment, inappropriate subsidies, and an inability or unwillingness to pay for services.

(ii) It was noted that recent high energy prices have added to these constraints, and contributed to increasing concerns about energy security. Escalating energy prices have an especially negative impact on those countries with a heavy reliance on imported fossil fuels.

(iii) Barriers to improved energy efficiency were highlighted to include weak energy regulations and enforcement, lack of public awareness, lack of incentives, lack of technology, technological knowledge and capacity, lack of financing, fragmented government decision- making, and lack of competition among energy suppliers.

(iv) The lack of appropriate institutional and legal frameworks, including accountability and transparency, and inadequate capacities were identified as barriers to the promotion of renewable and advanced energy technologies, and in particular advanced fossil fuel technologies. Without such frameworks, creation of an enabling environment, which stimulates markets and provides the necessary incentives is not possible.

(v) It was further noted that insufficient research and development funding and low levels of appropriate technical skills affect the ability of developing countries to innovate, absorb and use advanced energy technologies, including advanced fossil fuel technologies.

(vi) It was also highlighted that insufficient attention has been given to evaluating and publicizing the benefits of improved energy efficiency, renewable energy and other energy policies and to evaluating policy effectiveness and the costs of not taking action to address energy needs.

(b) Lessons Learned/Best Practices

26. A range of lessons learned and best practices to facilitate energy for sustainable development were highlighted, including:

(i) Sound and predictable legislation, regulatory frameworks and tax policies are demonstrated to be instrumental in promoting private investment in the energy sector and improving access to modern energy services for cooking and heating and electricity in rural and urban areas.

(ii) Energy efficiency has been shown, in many cases, to be the cleanest and cheapest energy resource and contributor to reducing air pollution and GHG emissions. The social benefits of improved energy efficiency, including job creation and reduced public health costs, have also been recognized. Among measures found to be effective in promoting energy efficiency are mandatory performance standards, appliance and building standards and labels, financial incentives for technology improvements, and elimination of perverse incentives whereby energy utilities maximize profits by maximizing electricity sales.

(iii) Demand-side management programmes to improve energy efficiency and reduce unnecessary demand have been enhanced with the active involvement of non-profit organizations and energy service companies. Measures and regulations that provide or strengthen market signals have been very effective in encouraging energy efficiency. Maintenance and servicing of equipment are important for maintaining energy efficiency.

(iv) Energy efficiency and sustainable consumption and production (SCP) activities in some countries have included more sustainable products, sustainable procurement, sustainable lifestyles and sustainable buildings, which are considered mutually reinforcing and synergistic.

(v) Standards and labeling programmes for appliances, buildings and other products have been cost-effective in improving energy efficiency. “World best” standards can be easily used to establish national standards. Energy efficiency achievements have been most notable in countries that have made it part of their national economic development strategy.

(vi) Economic incentives and disincentives have been effective in some countries in encouraging energy efficiency in industry. Negotiated targets for industrial energy use have also been successfully employed in several countries, as have energy efficiency codes for buildings.

(vii) Efforts to reduce natural gas flaring and venting and promote energy efficiency investments in the petrochemical and refinery industries, in some cases through cooperation among government, industry and NGOs, have produced positive results.

(viii) The development of natural gas resources and infrastructure has contributed to

diversifying the energy supply mix in some countries, as well as helping to reduce air pollution and GHG emissions.

(ix) The development and application of advanced fossil fuel technologies, such as carbon capture and storage, are beginning to be applied in several countries. Partnerships have provided important opportunities for international cooperation, exchange of information and technology transfer.

(c) Means of Implementation

27. An array of means of implementation for delivering on energy for sustainable development were highlighted, including:

(i) Targeted energy subsidies continue to be needed to ensure energy access for the poor. With higher world energy prices, however, many governments are facing a difficult choice of whether to cut energy subsidies, at the risk of public discontent, or reduce other budgetary expenditures. It was estimated that the increase in energy import bills in 2005 of heavily indebted developing countries was several times greater than the total debt relief agreed at the G8 Gleneagles Summit.

(ii) Public-private partnerships, including the WSSD Partnerships, have had success in leveraging scarce public and private sector resources, promoting multi-stakeholder involvement and facilitating technology diffusion. The synergies of cooperation between public, private and finance sectors need to be encouraged.

(iii) The World Bank has inaugurated a Clean Energy and Development Investment Framework, which is designed to guide financing for energy access, incremental costs of low carbon energy technologies, and climate change adaptation.

(iv) Investments in energy efficiency and renewable energy projects have often had particular difficulty attracting commercial financing. The Global Environment Facility (GEF) has been working with the banking sector in several countries to support an extension of financing to such projects. Partial loan guarantees were cited as one form of innovative financing to leverage private lending for energy efficiency and renewable energy investments.

(v) The Clean Development Mechanism (CDM) could also foster investment by the private sector in the financing of energy efficiency and renewable energy projects.

(vi) The transfer and dissemination of environmentally sound technologies at affordable prices is important for helping developing countries achieve sustainable development.

(vii) The continued need for training, capacity building and promoting greater awareness regarding the advantages of energy efficiency in industry, governments and households was highlighted.

(viii) Strengthening South-South cooperation in the fields of renewable energy and advanced fossil fuel technologies was seen as a particularly promising option for information and data sharing on these technologies for the benefit of other developing countries. Such cooperation would benefit from effective assistance through capacity building and technological research and diffusion. North-South assistance and involvement of the donor community in support of such South-South cooperation could greatly facilitate this enterprise.

(d) Continuing Challenges

28. A wide range of continuing challenges were identified, and in particular those focusing on energy included:

(i) Securing private sector financing for investment in the energy and industry sectors, in particular for energy efficiency, renewable energy and cleaner production, remains a major challenge.

(ii) Good governance, anti-corruption measures and facilitating an enabling environment are critical for attracting private sector investment.

(iii) Enhanced international cooperation is needed in research and development of new cost-effective and sustainable industrial and energy technologies and in the broad dissemination of information on those technologies.

(iv) Countries face a continuing challenge in decoupling economic growth from GHG emissions.

(v) International cooperation and technical assistance have supported a variety of demonstration projects, including energy audits and cleaner production systems, but sustaining and replicating those initiatives remains a challenge, in part due to lack of commercial funding.

(vi) The transition to cleaner energy technologies at affordable cost remains essential. Global energy needs are so large and energy prices so volatile that all energy options will need to be explored, while preserving the integrity of the environment and ensuring socio-economic development.

(vii) Energy security, including for producers and consumers, remains a continuing challenge.

(viii) The institutional, legal and technical barriers to the cost-effective employment and diffusion of carbon capture and storage technologies will need to be addressed.

(ix) For the share of renewable energy to be increased in the total energy supply and for energy efficiency to be promoted, further effort is needed on market support, through

innovative financing mechanisms, increased investments, accelerated R&D, adequate legislation, education, awareness raising and information and data exchange.

(x) Overcoming the cost barrier in order to make renewable energy technologies economically competitive can be achieved through the scaling up of their production and deployment.

(xi) Nuclear energy technologies were identified by some as a possible supply option in interested countries, and for them the challenge lies in ensuring environmentally sound, socially acceptable and cost effective solutions and in addressing nuclear safety and spent fuel and waste management, as well as public concerns on these issues.

(xii) More technological cooperation is needed on advanced energy technologies, including advanced, cleaner fossil fuel technologies.

(xiii) Further and more effective cooperation among petroleum companies to eliminate gas flaring and venting would make an important contribution to reducing GHG emissions, conserving energy resources and ensuring a larger energy supply.

V. CSD-15

29. The fifteenth session of the Commission on Sustainable Development (CSD-15), will be held from 30 April to 11 May 2007 at the UN Headquarters in New York. CSD-15 is a policy session under the current two-year cycle and will focus on policy options and possible actions to expedite implementation in the areas of energy for sustainable development, industrial development, air pollution/atmosphere, and climate change. It will be preceded by an intergovernmental preparatory meeting (IPM), scheduled for 26 February -2 March 2007 in New York.

30. Inputs have been requested on (i) those Policy Options that have been identified in the UNECE region that are feasible, workable and acceptable to the region; and (ii) Possible Actions and Practical Measures that have been undertaken with success in the UNECE region and/or those which have been recommended and are under active implementation by governments.

31. In requesting input for CSD-15, the secretariat of the UN Department of Economic and Social Affairs (DESA) drew attention to the flagship report “Energy in the United Nations: An Overview of UN-Energy Activities”, which highlights the key activities of UN-Energy entities in the relevant thematic areas of the current CSD cycle. A summary of the work of the Sustainable Energy Subprogramme is featured in this publication.

32. The Committee on Sustainable Energy will provide an input to both the IPM and CSD-15, however member countries are also encouraged to take part.

33. A report on CSD-15 will be provided to the sixteenth session of the Committee.

34. In view of the emphasis on energy during CSD-14, the Committee might wish to discuss and consider what role it could usefully play in the Intergovernmental Preparatory Meeting for CSD-15 (New York, 26 February – 2 March 2007) and CSD-15 itself (New York, 30 April – 11 May 2007).