



**Economic and Social
Council**

Distr.
GENERAL

ENERGY/2002/3
26 July 2002

Original: ENGLISH

ECONOMIC COMMISSION FOR EUROPE

COMMITTEE ON SUSTAINABLE ENERGY
Twelfth session, 20-21 November 2002

ECE INITIATIVES IN THE FIELD OF ENERGY

(prepared by the secretariat)

I. INTRODUCTION

1. The purpose of this paper is to provide an overview of the major initiatives and activities of the ECE in the field of energy. For convenience, these initiatives are classified into two broad categories: (a) pan-ECE activities related to energy norms, policies, practices and related issues; and (b) capacity building and training activities for the benefit of economies in transition.
2. The paper is not comprehensive. No attempt is made to present and discuss each and every element of the programme of work. Moreover, there is no attempt made to foreshadow changes to the programme of work that could arise either from the Secretary-General's current initiative to strengthen the United Nations or from the outcome of the World Summit on Sustainable Development, to be held in Johannesburg, 26 August – 4 September 2002. These could potentially affect the type and nature of activities carried out under the energy programme.
3. The paper begins by reviewing the overarching objectives that currently underpin the programme of work. Then, the initiatives are briefly described: first, those related to norms, policies and practices; followed by those pertaining to capacity building and training for the benefit of economies in transition. Some of the major gaps in the programme of work are then identified. The Annex provides a brief overview of the mandates of the intergovernmental bodies that have been established to carry out the ECE programme of work in the field of energy.

II. OVERARCHING OBJECTIVES

4. Two overarching objectives guide the programme of work, namely: (a) facilitating the transition to a more sustainable pattern of energy production and use; and (b) promoting the fuller integration of countries in the ECE region. These two policy challenges and the initiatives described below are consistent with the direction of work adopted by the Committee on Sustainable Energy following the Plan of Action endorsed by the Commission in 1997 and the Contribution/Statement to the ninth annual session of the Commission on Sustainable Development (CSD-9) developed and adopted by the Committee and the other partners of the civil society in November 2000. Likewise, these initiatives are consistent with the objectives of the United Nations Millennium Declaration.

5. In April 1997, the ECE adopted a Declaration on strengthening economic cooperation in Europe as well as a reform package on the strategic directions and priorities for the Commission. In response to these reforms, the ECE programme of work in energy was reoriented to give more emphasis to issues related to the sustainability of energy production, transport and use; the development of norms, classification systems and guidelines; the harmonization of energy policies and practices; and the provision of technical assistance to countries with economies in transition.

6. In November 2000, the Committee adopted a Statement, as a contribution to CSD-9, on sustainable energy development in a regional perspective, "One More Step on the Path to a Sustainable Energy Future". This contribution restated the sustainable energy policy objectives of ECE member countries, identified the key energy issues confronting the region, outlined in broad terms the energy policy responses required to meet the challenges, and suggested a number of initiatives to be implemented by the Committee and its subsidiary bodies. Some of the initiatives, such as reforming energy pricing for sustainable energy development and the Blue Corridor project described below, were initiated, at least in part, in response to this undertaking.

7. In addition, the initiatives described below are fully consistent with the United Nations Millennium Declaration (A/RES/55/2) especially Section I, Values and Principles (paragraph 5) with respect to policies and measures corresponding to the needs of countries with economies in transition; (paragraph 6) with respect to the currently unsustainable patterns of production and consumption of natural resources; Section III (paragraph 12) with respect to the creation of an environment conducive to development; Section IV (paragraph 22) in the implementation of the principles of sustainable development set out in Agenda 21; (paragraph 23) in providing assistance on the implementation of the Kyoto Protocol and reduction of greenhouse gas emissions; and Section VIII (paragraph 30) with respect to coordination with other international organizations, the private sector and non-governmental organizations to make the best use of resources in realizing the Organization's goals and programmes.

8. By improving international relations and economic cooperation in the field of energy, these activities also have the potential to indirectly help to promote democracy and strengthen the rule of law (Section V, paragraph 24) and reduce threats to international peace and security (Section I, Values and Principles (paragraph 6).

III. NORMS, POLICY AND RELATED ISSUES

(A) United Nations International Framework Classification for Reserves/Resources - Solid Fuels and Mineral Commodities

9. Over the past six years an international framework classification for solid fuels and mineral commodities has been elaborated under the auspices of the ECE and endorsed by the UN Economic and Social Council (ECOSOC) for worldwide application. More than sixty ECE and non-ECE countries and organisations participated in its elaboration. The classification scheme was subjected to a trial application period from 1997 to 2000. At this time, activities are focussed on monitoring the application of the classification framework and providing assistance to countries and groups of countries considering implementing the classification as a national standard.

10. The classification framework was first developed to encourage economies in transition to re-evaluate their coal and mineral deposits using market criteria and bring their classification systems more in line with western terminology and practice in order to facilitate their integration into the European and world economies. In due course, most major non-ECE coal producing countries (such as Australia, Brazil, China, India, Indonesia, South Africa and others) also decided to be associated with the classification framework, making it a truly global framework.

11. The classification framework has been published in seven languages: English, French, Russian, Chinese, Spanish, German and Portuguese. In addition, some countries, such as Hungary and Bulgaria, have translated the framework classification into their own language. Guidelines for facilitating the implementation of the classification have also been prepared and widely disseminated.

12. Designed as an umbrella system, the UN Framework Classification for Reserves/Resources (UNFC) provides an efficient link between developed countries, countries with economies in transition and developing countries for reporting and communicating reserve and resource data in an internationally acceptable and universally comparable way. In short, the codification system has been developed provides a short, unambiguous identification of reserve/resource classes and facilitates computer processing of reserve/resource data. This should help and encourage private sector investment and facilitate loan financing of projects in transitional and developing economies.

(B) Reserve/Resource Classification of Energy Commodities – Petroleum, Natural Gas, Coal and Uranium

13. This initiative is aimed at harmonizing the terminology for the evaluation and assessment of all major conventional energy reserves and resources, on a worldwide basis. It was launched after extensive consultations with numerous international organizations and professional associations. The purpose of the initiative is to facilitate the compilation of reserve/resource data for all energy commodities in a consistent, uniform and comparable way while, at the same time, responding to the interests of both the public and private sectors.

14. The initiative is being directed by an Ad Hoc Group of Experts and conducted by a number of Task Forces, the members of which are experts from the petroleum, natural gas and uranium sectors and representing the various constituencies of the energy community. The first meeting of the Ad Hoc Group took place in June 2002 in Geneva with a second meeting planned for later in 2002.

15. The objective here is to build upon the earlier initiative that culminated with the development and implementation of the framework classification for solid fuels and mineral commodities (see above). Work is underway to apply the codification system developed for solid fuels and mineral commodities to petroleum, natural gas and uranium. This involves the harmonization of terms and definitions for classifying energy reserves/resources, including the preparation of a methodology for the application of the codification tools developed for the UNFC to the said energy commodities.

(C) Reforming Energy Pricing for Sustainable Energy Development

16. The Committee on Sustainable Energy and the Committee on Environmental Policy both have both recognized the importance of reforming energy pricing to promote the transition to a more sustainable energy future. To this end, they agreed to establish an Intergovernmental Task Force on Environment and Energy for the purpose of elaborating guidelines for decision-makers on reforming energy pricing, subsidization and the internalisation of environmental externalities. This Task Force is composed of experts from the energy and environment policy community as well as experts from industry. In addition, the initiative received the endorsement of the Commission at its fifty-sixth session in May 2001.

17. Work is now proceeding to elaborate guidelines for policy makers for raising energy prices in countries with economies in transition to levels approximating their "economic" value or to international market levels, in conjunction with measures to alleviate the full impact of higher energy prices on those least able to absorb higher prices. In parallel, work is proceeding to elaborate guidelines for ECE countries to phase out, in a socially responsive manner, (consumption) energy subsidies for environmentally damaging sources of energy. In due course, an assessment of methodologies for internalising environmental externalities through the use of fiscal instruments, including taxation, and measures to promote their use will be undertaken.

18. The main objective, at this time, is to elaborate guidelines for raising energy prices and removing environmentally damaging (consumption) subsidies in time for consideration by the Bureaux of both Committees with a view to forwarding these guidelines for Ministerial consideration at the May 2003 Kiev meeting under the "Environment for Europe" process. Energy pricing is a powerful instrument for affecting behaviour and, therefore, could become a potent tool for promoting the transition to a more sustainable energy future.

(D) The Greening of the Coal-Energy Chain

19. Energy services are and will continue to be needed for years to come to meet human needs and for economic development. Under present and projected market conditions, the bulk of these energy services will continue to be provided by fossil fuels. Coal in particular will remain an

important fuel for the generation of electricity. Hence, it is imperative that the environmental impacts from the coal-energy chain be reduced and public acceptance of coal enhanced.

20. Clean coal technologies offer opportunities to mitigate the environmental impact of coal use at all stages of the coal cycle. To promote technical cooperation and the exchange of information in this area, workshops and seminars are organised on a regular basis within the ECE region. In May 2001, an international workshop on “Clean Coal Use – A Reliable Option for Sustainable Energy” was organised in Szczyrk, Poland. A workshop focussing on “Clean Coal Combustion in Small and Medium-Sized Boilers in Central and Eastern Europe” will be held in Brasov, Romania, in September 2002. A workshop on Carbon Sequestration will be held in Geneva on 19 November 2002, just prior to the annual session of the Committee.

21. In order to identify significant new developments affecting coal demand and supply for power generation in the region, a survey/questionnaire is circulated annually to all ECE member countries requesting current and forecast data. A paper on the Prospects for Coal is then prepared by the secretariat based on the material provided.

22. The economic transformation in countries with economies in transition has been particularly significant for the coal industries. Over the period 1990 to 2000, over one million coal miners lost their jobs. In order to better understand and deal with this complex economic and social issue, data is collected from affected economies on a regular basis, usually once every two years, on coal production, number of mines, number of employees, subsidy levels, productivity trends and investments in the industry. This data is then analyzed and a summary paper prepared which is subsequently shared and discussed with government and industry officials in order to exchange views on how best to deal with this economic and social problem.

23. Currently, an extensive questionnaire is being prepared, with the UN Department of Economic and Social Affairs, on the economic and social impacts of restructuring of the coal industries of transition economies. It is a wide ranging questionnaire touching upon issues such as workforce affected, qualification and skills, training/retraining, income support, compensation and pension schemes, job search assistance, out migration, housing policy, differentiated impact related to gender, restructuring planning processes, regeneration of local economic activity, rehabilitation of mine sites, and community and national support.

(E) The Opening Up and Liberalization of Energy Markets

24. In recent years, the energy sectors in ECE countries have been undergoing fundamental changes. One of these changes has been the opening up and liberalization of energy markets to competition. This trend has been most pronounced in North America, the Nordic countries and United Kingdom. And today, it is being implemented by the European Union and is also under serious consideration in countries of central and eastern Europe, particularly those aspiring to accede to the European Union.

25. To assess the fundamental changes arising from the liberalization of energy markets, in particular in the gas and electricity sectors, and to share experiences, a number of specific activities have been initiated.

26. Under the Gas Centre, two task forces are working on various aspects of the issue. The first is examining the ramifications of the EU Gas Directive for the 15 EU countries, their gas markets and gas industries as well as its implications for countries in central and east Europe. The task force is considering how central and eastern European countries and their gas industries can best prepare themselves and benefit from the experiences acquired in western Europe and North America.

27. The second task force is considering issues related to gas transmission in a liberalized market setting with a view to trying to harmonize as much as possible gas transportation rules within Europe and, thereby, optimize transportation efficiencies and minimize barriers to cross-border trade. The issues addressed range from access to pipeline facilities, transmission tariffs and fees, and technical considerations.

28. The two task forces have been meeting since 1999, about twice a year, on the basis of material produced by the secretariat and member companies of the Gas Centre. In addition, this year's Gas Centre High Level Meeting in Budapest, 29-30 April, hosted by MOL, the national gas company of Hungary, was dedicated to issues related to the interoperability of the European gas systems in an increasingly liberalized environment.

29. In addition to the Gas Centre, the issue is periodically discussed at annual sessions of the Committee on Sustainable Energy and its subsidiary bodies. At its last session, the Committee exchanged views on the implications of market liberalization for energy security on the basis of a paper prepared by the secretariat and a number of invited presentations from countries and international organizations. Likewise, at its last annual session, the Ad Hoc Group of Experts on Coal and Thermal Power considered the prospects for coal and coal-based electricity in liberalized energy markets on the basis of a report prepared by the secretariat and country presentations.

30. The ultimate aim of these activities is to develop a common understanding among countries about the necessary prerequisites and the legislative, regulatory and policy changes that need to be implemented for energy market liberalization to be successfully introduced. Obviously, this does not imply uniformity in the sense that all countries have to implement the same common legal, regulatory and policy framework. But it does imply a certain convergence of norms, standards and practices, and a certain degree of transparency and predictability, for increased cooperation, trade and investment to flourish between ECE countries in liberalized energy markets.

(F) Energy Security

31. In many respects, energy security is the "raison d'être" for energy policy. Therefore, the issue has been periodically reviewed at the Committee on Sustainable Energy and its subsidiary

bodies on the basis of papers prepared by the secretariat and invited presentations from countries and other international organizations.

32. In 2001, a study on Energy Efficiency and Energy Security in CIS was published. The study was a cooperative effort between the ECE and the Executive Committee of the Commonwealth of Independent States. Its purpose was to assess the potential for energy conservation in CIS countries and explain how improvements in energy efficiency could contribute to enhancing energy security.

33. Anxieties over energy security, which abated in the 1980s and 1990s, are once again re-emerging for a host of reasons, including increasing import dependence, longer supply routes, uncertainty regarding the full implications of market liberalization, the potential for social unrest and ethnic strife in a number of producing and transit countries, and the 11 September terrorist attacks in New York and Washington. This growing concern over energy security will invariably affect the debate, and influence decisions on a number of important and thorny energy policy issues, related to nuclear power, coal and environmental standards.

34. Consequently, a more intensive assessment of energy security risks and potential policy responses is required. With this in mind, the Committee on Sustainable Energy will address this issue at its forthcoming twelfth annual session in November 2002 with renewed interest and vigour. In addition, the member companies of the Gas Centre have set up a Task Force to assess the situation with respect to natural gas and suggest options for reducing risks if warranted.

(G) The Blue Corridor

35. The rapid increase in vehicle numbers, particularly for the transport of freight, has resulted in high levels of atmospheric pollution. One possible avenue for mitigating the problem might be the development of transport infrastructure and transport corridors for vehicles using gaseous fuels rather than petroleum-based fuels for the trans-boundary transport of freight.

36. The Committee on Sustainable Energy, including the Working Party on Gas, and the Inland Transport Committee decided to establish a Task Force, representing both the gas and transport sectors, to assess the economic and technical feasibility of the project and formulate a strategy for its implementation. In addition, the Commission at its fifty-sixth session in May 2001 requested the Committee on Sustainable Energy and the Inland Transport Committee to consider this project and report back to the Commission. The first meeting of the Task Force took place in Warsaw, 27-28 June 2002, with a second meeting planned for autumn 2002.

37. The substitution of petrol or diesel with high octane, high calorific value gaseous motor fuels could significantly reduce harmful emissions, such as carbon monoxide, carbon dioxide, nitrogen oxides and others. Today, there are about 1.5 million natural gas-powered vehicles in the world and over 3,500 natural gas filling stations. Most European countries have experience with natural gas vehicles (NGVs) and new NGV markets are emerging. The European Commission recently adopted a transport policy to replace 10% of the diesel/petrol in the transport sector with natural gas by the year 2020.

(H) Regional Studies in the Field of Natural Gas

38. In 1999, the Working Party on Gas completed a three-hundred-page report "Study on Underground Gas Storage in Europe and Central Asia" in order to review the current and future needs (up to the year 2020) for underground gas storage in countries of Europe and central Asia. An Ad Hoc Group of Experts was established to carry out the study (about 50 experts from companies and organizations were involved in its preparation). The Group met periodically in different locations over a period of three years.

39. The report deals with a wide range of issues related to underground gas storage, such as, current status of storages, new and emerging technologies, new and existing underground gas storage projects, regulatory framework, cost of storage in USA and in Europe, and future gas market developments. An attempt was also made to identify storage facilities that ensure international contract border services today and in the future.

40. Storage is becoming a strategic component of the gas chain; it constitutes a strategic reserve, ensures higher flexibility and security of supplies, and constitutes a means to balance irregular consumption - daily peaks and seasonal peak consumption. The growth in underground gas storage capacity is being stimulated by the continuing restructuring and liberalization of gas industries and gas markets, the development of spot markets and the emergence of new participants. Hence, the Working Party on Gas intends to monitor, on an ongoing basis, developments in this area and update the study when warranted.

41. In addition to the study on underground gas storage, the Working Party on Gas is currently in the process of updating an International Map of Natural Gas Fields in Europe last updated in 1984, reflecting major gas fields and geological basins in Europe. Since new modern technologies provide better facilities to visualize and analyze data, this new edition will be produced on CD-ROM, which will enable the printing of map sheets and explanatory notes of selected areas. In order to provide information not only of geological but also of economic relevance, the map of gas fields will be combined with existing maps of international gas transmission lines and underground gas storage facilities.

IV. CAPACITY BUILDING FOR THE BENEFIT OF ECONOMIES IN TRANSITION

(A) Energy Efficiency 21 Project

42. The Energy Efficiency 21 project is a region-wide project to enhance trade and co-operation in energy efficient, environmentally-sound techniques and management practices in order to help close the energy efficiency gap between actual practice and best technologies, and between ECE countries, in particular market developed countries and economies in transition. It is the successor of the Energy Efficiency 2000 Project that was launched in 1991.

43. The objectives of the current three year programme (2000 – 2003) are to: enhance the dissemination and exchange of information, analyses and experiences on energy efficient, environmentally-sound technologies; improve the networking of institutions, organizations and

individuals working in the area of energy efficiency; provide institutional capacity development and training in business planning, financial engineering and project development; promote the implementation of energy efficiency legislation; and identify energy efficiency investment projects and potential sources of financing.

44. Extrabudgetary resources for this project are contributed by a variety of sources, notably governments, development agencies and UN organizations, such as the Global Environment Facility (GEF). Over the last ten years, cash contributions to the Trust Fund have averaged about US\$ 200,000 per year. In addition, significant financial and 'in-kind' contributions are directly provided to support the activities of the project. For example, the Commission of the European Union provided about 400,000 Euros to support a joint project on energy efficiency labelling and standards in a number of transition countries under the auspices of the EE 2000 Project and the EU SAVE Programme. This study has been issued as an e-book publication by the United Nations, with a CD-ROM containing 500 pages of text and graphical illustrations.

45. The EE21 project is guided and monitored by a Steering Committee composed of delegates from national participating ministries and institutions, international organizations and donor agencies. The Steering Committee determines the activities, results, work methods, participation, procedures, budget, calendar of events and timetable of the project, and secures cooperation from other interested parties. In addition, the Steering Committee provides general guidance and oversight to the other operational activities of the Sustainable Energy Division in the field of energy efficiency, such as the UNFIP/UNF project described below.

(B) Energy Efficiency Investment Project Development for Climate Change Mitigation (UNF/UNFIP)

46. In 1999, the United Nations Foundation (UNF) approved a US \$2 million project on energy efficiency for climate change mitigation within the framework of the then EE 2000 Project. The funding was provided to support market formation activities in economies in transition aimed at improving the investment climate for energy efficiency investments so that these could take place in a market environment, that is, on the basis of market criteria. It was also to encourage local and regional authorities to participate in the objectives of the United Nations Framework Convention on Climate Change and UN ECE environmental accords.

47. The project covers five east European and CIS countries - Belarus, Bulgaria, Kazakhstan, Russian Federation and Ukraine. It focuses specifically on three areas - municipal lighting, hospitals and district heating. Activities include capacity development and training for private and public officials at the local level to identify, develop and implement energy efficiency investment projects; assistance to municipal authorities and national administrations to introduce economic, institutional and regulatory reforms needed to support investment projects; and the development of energy efficiency investment proposals, with the help of consultants and trainers, for potential investment by commercial banks, private companies and financial service companies.

48. The United Nations Foundation, through the United Nations Fund for International Partnerships (UNFIP), provided US \$ 1.250 million to the project while co-financing partners,

such as development agencies and private sector companies and institutions, provided the remainder, US \$ 750,000. The ECE, as the executing agency, manages and disburses the funds.

49. An Ad Hoc Group of Experts guides the implementation of the activities and deals with operational issues. General oversight is provided by the Steering Committee of the EE 21 Project. Because of co-financing arrangements, new modalities and mechanisms to expedite the implementation of activities and disbursement of funds were implemented. The project is now more than halfway through its implementation phase, with project completion anticipated by the end of 2003.

(C) Rational Network for Efficient Use of Energy Resources (RENEUER)

50. This project is primarily intended for countries with economies in transition in southeast Europe - Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Republic of Moldova, Romania, the former Yugoslav Republic of Macedonia and Yugoslavia. The project's strategic goal is to promote conditions for sustainable development in the region by overcoming regional barriers and creating favourable conditions for the penetration of advanced technologies for the efficient use of local energy resources.

51. More specifically, the project is intended to: (a) provide technical assistance to improve the capacity at the municipal and local level for the identification, development and implementation of bankable projects for the efficient use of energy resources; (b) designate new energy efficiency investment zones and identify pilot investment projects in each of the participating countries; (c) develop and maintain a pipeline of bankable projects; and (d) develop an information pool to meet the information needs of project owners, project developers, financing institutions, companies and experts.

52. Secretariat support to the project is provided by the Center for Energy Efficiency (EnEffect) in Sofia and the Black Sea Regional Energy Centre in Bucharest. The Executive Director of EnEffect, who is also Vice-Chairman of the Steering Committee of the EE 21 Project, is the Regional Coordinator of the project. The ECE via the Steering Committee of the EE 21 Project and the Sustainable Energy Division provides overall coordination. The project is under the auspices of the Southeast European Cooperative Initiative (SECI) and the Stability Pact. Funding is provided by a number of donor agencies, and most notably by the US Agency for International Development

(4) Gas Centre

53. The UN ECE Gas Centre was launched in 1994 as a technical cooperation programme "Promotion and Development of a Market-Based Gas Industry in Economies in Transition - the Gas Centre". It was established to assist governments and gas companies in central and eastern Europe in their efforts to create more decentralized and market-based gas industries.

54. In the light of the fundamental and profound changes which have been taking place in the natural gas markets of Europe, the Gas Centre's mandate has been re-focussed over the years. Last

year, a forward looking assessment of the objectives, work methods, fee schedule and programme of work was carried out by the member companies of the Centre, with the help of staff, with the aim of strengthening it.

55. Today, in addition to contributing to institutional capacity development and training for the benefit of economies in transition (e.g., on industry restructuring and privatisation), the Centre has become a pivotal forum for: (a) the exchange of know-how, information and experience among gas companies, institutions and individuals from ECE member States (e.g., on the opening up and liberalization of gas markets); (b) promoting dialogue between the gas industries and governments on policy matters (e.g., on policy, legal and regulatory issues and energy security); (c) promoting cooperation and facilitating the integration of the natural gas industries in Europe by encouraging new investment and trade, through the greater convergence and harmonization of norms and practices (e.g., on transportation tariffs, rate making, financing and investment criteria).

56. The strategic directions, programme of work and budget of the Gas Centre are established and overseen by an Executive Board, consisting of the institutions that participate in the Centre. The work of the Centre is carried out through various means such as task forces, workshops, seminars, conferences, publications, the development of sources of information/databases, training, and technical and advisory missions.

57. To carry out its programme of work, the Centre depends exclusively on extrabudgetary resources. The funding institutions are 25 major private and state-owned gas companies that contribute to its Trust Fund. Cash contributions to the Trust Fund average about US\$ 400,000 per year. Additional resources are made available by the companies to support specific activities and events.

(E) Regional Advisory Services

58. The purpose of the Regional Advisory Programme on Energy is to provide advice and technical assistance, of an operational nature, to countries with economies in transition and, most notably, to the most disadvantaged of these. It also complements and re-enforces the regular and extrabudgetary programmes in energy.

59. The forms and methods of operational activities undertaken vary according to the needs of the recipient countries and the sub-regions, but invariably involve a combination of the following: the preparation and implementation of specific programmes, both issue-oriented and sub-regional in nature; the preparation of project proposals for funding by international organizations and donor countries; the development and preparation of substantive studies with participating countries relating to policy issues and energy strategies; participation in the development and implementation of programmes for capacity and institutional building and training; the organization of workshops, seminars and other group meetings; consultative and advisory missions; and study tours.

60. The programme on energy has one Regional Advisor dedicated to it. Over the last two years, the Regional Advisor has participated in the preparation of analyses on the energy situation,

energy efficiency potential and prospects for CIS countries; assisted in the elaboration and preparation of plans and programmes to facilitate the implementation of energy policies and strategies; assisted in the planning and implementation of programmes for capacity and institutional building and in the provision of training on business planning, financial engineering, project development and sources of financing; provided advice and participated in workshops and seminars on the restructuring, rehabilitation and modernization of the energy sector in the CIS countries; and assisted in the preparation of project proposals for funding by UNDP and GEF.

61. In addition to funding from the Regional Advisory Services budget (section 21), activities are supported by extrabudgetary resources, notably from the Energy Efficiency 21 Project, UNDP, GEF, donor countries and countries with transitional economies. Because of limited staff resources, activities continue to have to be focussed on a limited number of countries taking into account priority areas for development, government support as well as the availability of extrabudgetary financing.

(F) The Rational and Efficient Use of Energy and Water Resources in Central Asia (SPECA)

62. This project on 'The Rational and Efficient Use of Energy and Water Resources in Central Asia' is carried out under the auspices of the Special Programme for Economies of Central Asia. The objective of the project is to foster cooperation on energy and water resources among the countries in central Asia - Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan. A more rational and effective use of energy and water resources would significantly ease energy and water supply problems and reduce environmental problems in the region.

63. The project's main objectives are to: (a) develop regional solutions to common priority problems related to energy and water resources; (b) promote region-wide economic and technical cooperation among the participating countries and their integration into the world economy; (c) strengthen the institutional capacity with respect to energy and water management of States and their public administrations; and (d) electronically link energy and water agencies in the region to enhance information transfers regarding policy reforms, financing and energy and water management issues. The project is also aimed at assisting the participating States to meet their international environmental and energy treaty obligations under UN ECE, UN FCCC and the Energy Charter.

64. The project is coordinated by a Working Group of officials from the central Asian Republics, responsible for energy and water matters. The programme of work is carried out by Groups of Experts from the region, with the help of consultants. The Regional Advisors for Energy and for the Environment have responsibility, within the ECE, for its implementation and for monitoring its progress.

65. Activities under this project are funded by the UN Development Fund that has allocated US \$ 1.75 million to the project with the approval of the UN General Assembly. The ECE is the

executing agency for the project and manages and disburses the funds. ESCAP participates as an associated agency. Activities have progressed beyond the halfway mark with project completion anticipated by the end of 2003.

(G) Development of Interconnection of Electric Power Systems of Southeast European countries (under SECI)

66. The project was launched in December 1997 under the auspices of SECI. The following countries from the region participate: Albania, Bosnia and Herzegovina, Bulgaria, Croatia, Greece, Romania, Slovenia, Turkey, the former Yugoslav Republic of Macedonia and Yugoslavia. The former Yugoslav Republic of Macedonia, as lead country, has been hosting and chairing most of the meetings.

67. The main aims of this regional and intra regional project are: (a) to reconnect the south wing of the European Electricity System through the rehabilitation of existing electricity lines and substations in Bosnia and Herzegovina and in Croatia; (b) to extend and reinforce the interconnections between SECI countries through the construction of new interconnection links among the countries in the region, and with the west European grid system; and (c) to facilitate the opening up of the electricity markets in the region in order to promote electricity exchanges and trade.

68. The SECI Project Group, consisting of participating and donor countries as well as international organizations and institutions, provides overall coordination and oversight. For each individual project, general direction and management is provided by a Steering Committee, supported by a Technical Coordinating Group. Detailed expert work is carried out by Working Groups with the support of consultants. The ECE secretariat provides technical backup and secretariat support.

69. Of the five priority sub-projects identified by participating countries one of these has now been completed, namely, on the tele-information systems linking the electric power dispatching centres in the region. A second sub-project on the interconnection of the high voltage transmission systems in the region has been initiated. The ultimate purpose of this particular sub-project is to promote a regional competitive market for electricity in southeast Europe and, thereby, encourage greater electricity trade and exchanges. Both of these sub-projects have been supported financially by the US Agency for International Development (USAID).

V. PROGRAMME GAPS

70. The programme of work in energy currently has three important gaps. There is no programme in the area of oil/petroleum, no programme in new and renewable energy, including on carbon sequestration and zero emission fossil fuel technologies, and only a very limited programme of work in electricity.

71. The lack of a programme of work in oil/petroleum is a particularly important gap. Almost 40% of total world energy requirements, and almost 100% of energy needs for road, water and air transport, are derived from petroleum. In addition, oil is the energy source with the highest associated security risks; oil prices, either directly or indirectly, affect the prices of most other

sources of energy; and road, water and air transport, fuelled by oil, are major contributors to environmental pollution, notably air pollution.

72. In the past, work in petroleum was constrained because it was judged to be too politically sensitive. This is no longer the case. Therefore, consideration should be given to the development of a programme of work in the field of oil/petroleum with special attention focussed on the energy-transport-environment dimension. The importance of oil to energy markets, now and in the future; the inherent security risks of oil supplies, trade routes and markets; and the strong interdependence between oil consumption, transport and the quality of the environment call for such a programme.

73. While the share of total energy requirements met by new and renewable energy, other than hydro, is small, these are nonetheless important in some regional and local markets. They are also environmentally more benign than non-renewable energy resources, such as fossil fuels, and can contribute significantly to meeting sustainable development objectives. Over the long term, new and renewable sources of energy will be required in increasing numbers, if the transition to a sustainable energy future is to be achieved.

74. Political support for renewables is growing, with enhanced expectation that renewables, in conjunction with increased energy conservation and efficiency, will contribute to resolving many of the world's environmental problems. The European Union's Renewable Energy Strategy, as defined under the ALTENER Programme, called for renewable energies to increase their market share in total energy demand from 4% in 1991 to 8% in 2005. The recent European Commission White Paper on energy strategy and the related Action Plan fixed a new target level of 12% by 2010. The World Summit on Sustainable Development is also likely to call for renewed efforts in the development and use of new and renewable forms of energy.

75. In the past, the programme of work in energy included some programme elements on new and renewable sources of energy. But during the 1997 Reforms, the Commission decided to abolish these from the programme of work on energy. However, given the growing importance of renewable energy (such as small hydro power, biomass, wind power and solar) as well as the development of new technologies that could make possible the use of fossil fuels to generate energy at very low or no emissions, serious consideration should be given to re-introducing some activities along those lines into the ECE programme of work on energy.

76. Likewise, as a result of the ECE Reforms of 1997, the work programme on electric power was significantly cut back. Only activities related to the interconnection of electric power network systems were retained, including the SECI technical assistance project on electric power interconnections.

77. The "winds of change" are blowing across the ECE region. Governments in central and eastern Europe as well as central Asia are busy reshaping, restructuring and, in some cases, privatising their electricity industries. In western Europe and North America, governments are aggressively opening up and liberalizing electricity markets.

78. In addition, many economies in transition are saddled with aging, highly energy inefficient and technologically old infrastructure. In some cases, systems are unreliable, prone to failure, and experience frequent shortages. Electricity trade and exchanges between countries of the CIS and the west as well as between southeast Europe and western Europe are hampered by technical and other incompatibilities.

79. The barriers to trade in electricity are not only technical but are also policy induced, influenced by social and political considerations and by concern for self-sufficiency and security of supply. A more pro-active ECE programme in electricity would benefit all ECE countries and, in particular, east European countries.

ANNEX

Organization of Work: **Intergovernmental Structure**

Committee on Sustainable Energy (Principal Subsidiary Body): contribute to the harmonization of energy policies and practices; disseminate information and exchange of views/experiences on best practices; assess new developments and issues particularly related to energy pricing, security of supply and the environment; develop norms, classifications and guidelines.

Ad Hoc Group of Experts on Coal and Thermal Power: assess/analyze and exchange views/experiences on industry restructuring, market adaptation and environmental issues, including clean coal technologies, carbon sequestration, and 'zero emission' fossil fuel energy; assess economic and social consequences, international experiences and lessons learned on mine/plant closures.

Ad Hoc Group of Experts on Extension of European Electricity Interconnection: assess and promote electric power network system interconnections, electricity exchanges and trade.

Ad Hoc Group of Experts on the Harmonization of Energy Reserves/Resources Terminology: harmonize the terminology for the evaluation and assessment of all major conventional energy reserves and resources by applying the codification system development for solid fuels and minerals.

Joint Energy/Environment Task Force on Reforming Energy Prices for Sustainable Development: develop guidelines on energy pricing and removal of (consumption) subsidies.

Working Party on Gas: carry out activities related to natural gas resources, infrastructure and market development; prepare major regional studies, such as underground gas storage.

Ad Hoc Group of Experts on Natural Gas Resources: analyse and exchange information on natural gas reserves/resources and related issues, such as geological/geophysical methods for prospecting for natural gas; prepare digitised International Map of Natural Gas Fields in Europe on CD-ROM.

Ad Hoc Group of Experts on Supply and Use of Gas: assess and exchange information on the management, diagnostic techniques and technological developments for gas transportation systems; assess the technical and ecological norms and standards for gas distribution networks and appliances.

Joint Energy/Transport Task Force on 'Blue Corridor' Project: assess economic and technical feasibility of transport infrastructure and transport corridors for vehicles using gaseous fuels.

Advisory/Executive Board of Gas Centre: provide strategic directions for the programme of work and approve budget of the Gas Centre.

GC Task Force on EU Gas Directive: assess and exchange views/experiences, including with EU Commission, on the implementation of the EU Gas Directive and regulations, and their implications for central and east European countries.

GC Task Force on Gate 2010, Transmission and Tariffs: assess and recommend ways to harmonize gas transportation rules within Europe with a view to optimising transportation efficiencies and minimizing barriers to cross-border trade.

GC Task Force on Security of Natural Gas Supply: assess security risks of natural gas supplies and suggest options for reducing risks if warranted.

Steering Committee of the Energy Efficiency 21 Project: develop, guide and monitor the activities of the Project aimed at promoting energy efficiency measures, particularly in and for the benefit of countries with economies in transition; provide general guidance and oversight to other operational activities in the area of energy efficiency, such as the UNFIP/UNF and RENEUER projects.

Ad Hoc Group of Experts on Energy Efficiency Investments – UNFIP/UNF: guide the implementation of activities and deal with operational issues with respect to the “Energy Efficiency Investment Project Development for Climate Change Mitigation” funded by United Nations Foundation.

Sub-regional intergovernmental bodies, SECI & SPECA:

Project Working Group-Energo: guide the implementation of the project on “The Rational and Efficient Use of Energy and Water Resources in Central Asia” funded by the Development Account and carried out under the auspices of the Special Programme for Economies of Central Asia (SPECA).

Project Group on Interconnection of Electric Power Systems of Southeast European Countries: provide general coordination and oversight for the project on the interconnection of electric power systems in southeast Europe under the auspices of the Southeast European Cooperative Initiative (SECI) and the Stability Pact.