



SUMMARY OF THE HIGH LEVEL MEETING ON ENERGY IN PREPARATION FOR THE ROUND TABLE ON ENERGY AT THE THIRD UN CONFERENCE ON LEAST DEVELOPED COUNTRIES

14-16 MARCH 2001

The High Level Meeting on Energy in preparation for the Round Table on Energy at the Third United Nations Conference on Least Developed Countries was held from 14-16 March 2001 in Vienna, Austria. The meeting was organized by the United Nations Industrial Development Organization (UNIDO), in cooperation with the United Nations Conference on Trade and Development (UNCTAD) and the Federal Government of Austria. Over 50 experts and high level participants from government agencies, United Nations bodies, business and industry, academic institutions, and international and non-governmental organizations attended the meeting.

The meeting, which served as preparation for the Round Table on Energy at the Third UN Conference on Least Developed Countries (LDCs) scheduled for May 2001, provided an opportunity to examine energy for sustainable development in LDCs. Participants met in plenary sessions that focused on four key issues: access to energy; the rational use of energy, including energy efficiency; financing and promotion of investment in the energy sector; and LDCs and hydrocarbons, including innovative ways to address oil price fluctuations and their impact on LDCs' balance of payments. They also heard presentations and briefings on the Third UN Conference on LDCs, preparations for the ninth session of the Commission on Sustainable Development relating to energy, partnerships with LDCs, the World Energy Assessment, the World Energy Outlook 2000, and the Multi-functional Platform Programme.

On the meeting's final day, participants produced text summarizing suggested key outputs or deliverables to be carried forward to the Round Table on Energy at the Third Conference on LDCs. These proposed deliverables include support for large-scale initiatives in selected LDCs for an integrated rural development programme, promotion of the role of private Energy Service Companies, and organization of an event on the development of strategies to protect against oil price fluctuations.

REPORT OF THE MEETING

The High Level Meeting on Energy opened on Wednesday morning, 14 March. The Meeting was co-chaired by Madani Toure, Advisor to the Prime Minister of Mali, and Bruno Zluwa, Head of the

Department of Energy for Austria's Ministry for Economic Affairs. The two moderators were John Cuddy, Executive Secretary of the Third UN Conference on LDCs and Director of UNCTAD's Trade Division, and Cahit Gürkök, Director of UNIDO's Industrial Energy Efficiency Branch. Co-Moderator Gürkök called the first session to order and introduced the opening speakers.

Yo Maruno, Deputy to the Director-General of UNIDO, welcomed participants on behalf of Director-General Carlos Alfredo Magariños. He noted that this High Level Meeting on Energy was being held in preparation for the Round Table on Energy at the Third UN Conference on LDCs and highlighted the special significance of LDCs for UNIDO. He drew attention to UNIDO's mandate to assist LDCs and the importance accorded to this assistance in its Business Plan, which was elaborated in 1997. He also noted UNIDO's major focus on Africa. Stating that an adequate energy supply is a cornerstone for development and industry, he said UNIDO was pleased to be the lead agency organizing this High Level Meeting and the Round Table on Energy.

Co-Moderator Cuddy said energy issues had not received adequate attention in international development discussions. He suggested that difficulties encountered during the recent meeting of the Commission on Sustainable Development's *Ad Hoc* Open-Ended Energy Expert Working Group demonstrate that "we have a long and hard road ahead." However, he said the Third UN Conference on LDCs presented an opportunity to make progress by singling-out energy for LDCs as a key issue. He said this preparatory meeting would focus on deliverables for the Round Table on Energy. He thanked the Governments of Austria and Mali for agreeing to co-chair the Round Table, and UNIDO for taking the lead role in organizing this preparatory meeting.

Co-Chair Toure highlighted the critical importance of energy issues for LDCs, and said this preparatory meeting should produce concrete proposals for consideration by the Round Table on Energy. He highlighted the recent increase in oil prices as an additional barrier and constraint to development in LDCs and a matter that needs to be examined carefully.

Co-Chair Zluwa, speaking for Minister of Economic Affairs and Labor Martin Bartenstein, stressed Austria's commitment to assist LDCs, which he considered an "ethical imperative." He highlighted the need for adequate and affordable energy resources, as well as the linkages between poverty and the inadequate provision of energy. He stressed Austria's commitment to an environmentally-sound energy policy, noting that it had renounced nuclear energy as incompatible

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with its sustainable development goals. He highlighted the importance of sharing experiences and transferring knowledge and technology to support LDCs in addressing their energy needs, and noted the risks of repeating previous mistakes. He said the Austrian Government was preparing a compendium detailing past energy cooperation projects, including contact information to assist those organizing future projects.

PRESENTATIONS AND BRIEFINGS

Participants at the High Level Meeting on Energy heard introductory presentations and briefings and engaged in discussions on a number of specific topics. On Wednesday, 14 March, delegates were briefed on the Third UN Conference on LDCs, the Commission on Sustainable Development's Energy Expert Group, and the plan of work and key issues for this High Level Meeting, as well as some possible outcomes or deliverables. On Thursday, 15 March, presentations were made on partnerships between LDCs and donors, the recent World Energy Assessment, and the Multifunctional Platform Programme.

THIRD UN CONFERENCE ON LDCS: Co-Moderator Cuddy outlined the mandate of and preparations for the Third UN Conference on LDCs. He drew attention to other major development-related UN processes and goals, and noted the wide participation of agencies and actors within and outside the UN system in the Third LDC Conference. On activities related to the Conference, he discussed national country programmes for coordinating activities in preparation for and follow-up to the Conference, with a focus on concrete action, as well as inter-governmental negotiations on a global action programme. He highlighted thematic areas for the meeting, which include governance, enhancement of productive capacity and human resources, infrastructure, and trade, investment and financing issues. He said three Round Tables will convene on energy, transport and the digital economy, with the purpose of identifying and generating concrete deliverables for these issues. He provided examples of deliverables that had been committed to unilaterally, including debt relief and the provision of medical services. Calling for an emphasis on concrete action and country-driven initiatives from LDCs, he underscored the commitment to LDCs within the donor community.

CSD-9 ENERGY EXPERT GROUP: Irene Freudenschuss-Reichl, Co-Chair of the *Ad Hoc* Open-Ended Intergovernmental Group of Experts on Energy and Sustainable Development, which is preparing input for the ninth session of the Commission on Sustainable Development (CSD-9), presented an overview of the Expert Group's recently concluded work and highlighted outcomes of interest to the High Level Meeting. She noted wide agreement on substantive and technical aspects of energy for sustainable development. However, she said there was disagreement on whether to take an approach based on shared objectives applying to all countries, as opposed to a range of policy options that each country could choose from to fit national circumstances. Also, negotiators had yet to agree on whether to include a set of indicative targets for all countries, as well as on the role of the market and new and additional funding. On challenges and recommendations relating to key issues identified by the Expert Group, she said the High Level Meeting could benefit from considering chapters in the Expert Group's outcome report on accessibility, energy efficiency, rural energy, and renewable energy as it relates to rural energy. She noted that while the Expert Group had agreed on issues of regional cooperation, divergence remained with regard to international cooperation. She suggested that the upcoming Round Table on Energy identify priorities in terms of meeting LDCs' energy needs, as well as links that can be made to the CSD's work, as this would send the signal that energy is a key contributor to LDCs' development.

OVERVIEW OF KEY ISSUES AND PLAN OF WORK: Co-Moderator Gürkök provided an overview of the issues, plan of work, and possible outcomes for this High Level Meeting on Energy. He outlined key upcoming UN meetings relating to energy, including CSD-9 in April 2001, the Round Table on Energy in May 2001, and the World Summit on Sustainable Development (Rio+10) in mid-2002.

He drew attention to statistics on access to electricity in LDCs demonstrating inadequate availability, particularly for people in rural areas and with low incomes, while adding that energy was often not used efficiently. He highlighted the linkages between energy and social development, noting that women bear most of the negative impacts of inadequate energy services. He said issues to be addressed at this meeting included access to energy, the rational use of energy, financing issues, and the impact of oil prices on LDCs.

In the ensuing discussion, a number of speakers raised the issue of energy indicators. Responding to a question on statistics on households with access to electricity, Co-Moderator Gürkök said the statistics he had presented sought to demonstrate that there can be significant differences in energy access between rural and urban areas, and rich and poor. Several participants highlighted questions of financing as critical to making progress on energy issues. Co-Moderator Cuddy said it might be useful to identify the preconditions for attracting investment to the energy sector. One participant identified the "cross-cutting issue" of LDCs' low technological capacity. Speakers also discussed the pourehere plant and its potential industrial/bio-fuel uses.

BUILDING ENERGY PARTNERSHIPS WITH LDCS: Alois Geisslhofer, Project Manager, Austrian Energy Agency, introduced his agency's "energy partnership" programme, which is targeted at countries in Eastern and Central Europe and supports sustainable energy development through the promotion of energy efficiency and renewable energy. He said such energy partnerships should be adapted to LDCs, used as platforms for identifying and implementing concrete projects, and form part of a wider North-South network promoting innovative energy technologies and capacity building.

As potential deliverables to be carried forward from this meeting to the Round Table on Energy, he proposed that Austria could assist in the development of pilot partnerships, starting with the establishment of energy agencies in some LDCs and cooperation with these new agencies to establish appropriate infrastructure and know-how regarding energy efficiency and renewable energy. EU networks would also participate in this initiative to ensure access to EU financing schemes.

In the ensuing discussion, several participants noted that many LDCs already have some form of energy agency and suggested that their performance should be examined critically to ensure their capacity and ability to act. One participant called for strengthening existing agencies, for instance through twinning programmes.

Several participants underscored the need for both small-scale, decentralized sources of renewable energy and for energy for urban and industrial applications. One participant stressed the need for a greater focus on market access and trade and the need for catalytic activities to create an environment that attracts investment in large-scale energy applications. Co-Moderator Cuddy said a clear message should be delivered at the Round Table on Energy on the macro issue of large-scale energy needs, along with suggestions for concrete deliverables in the form of smaller projects for which financing exists.

WORLD ENERGY ASSESSMENT: Thomas Johansson, Director, Energy and Atmosphere Programme, UNDP, presented an overview of the World Energy Assessment, which was published in September 2000. He noted that this initiative, which addresses energy and the challenge of sustainability, was established in 1998 by the UN Development Programme, the UN Department of Economic and Social

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Affairs (UNDESA), and the World Energy Council. He said the World Energy Assessment had provided input for the CSD-9 preparatory process and would contribute to the Third Conference on LDCs, the Financing for Development initiative, and the World Summit for Sustainable Development (Rio+10).

He identified current energy challenges, including the fact that two billion people have no access to electricity and an additional two billion have access only to unreliable energy. He added that two billion people are using traditional cooking fuels, with serious health consequences. He also drew attention to environmental impacts of current energy use, such as climate change and air pollution, as well as many countries' dependence on oil imports.

He said the World Energy Assessment proposes a paradigm shift in terms of achieving sustainable energy. Significant policy changes are required to:

- make markets work better by, *inter alia*, mobilizing investments and setting accurate price signals, such as by removing subsidies to fossil fuel energy;
- increase attention to the innovation chain by focusing on research and development, demonstration projects, early deployment of technologies, and widespread dissemination of innovation; and
- reform the power sector so it functions more effectively.

On liberalization of the electricity sector, he said this could impact future rural electrification in LDCs, noting that previous electrification in Europe and North America was funded by cross subsidies and governments. He also highlighted the importance of an effective regulatory regime.

For developing countries, he stressed capacity and institution building and good governance as critical prerequisites for generating investment-friendly environments that are socially and environmentally responsible. He also noted the value of technological leap-frogging and drew attention to a shift toward small-scale, decentralized sources of electricity.

He highlighted a recently proposed target to reduce the proportion of people without access to clean and affordable fuels and electricity by half by 2015. Such a goal would focus attention on the issue and assist in meeting the goal of halving the number of people living on less than one dollar a day by 2015.

In the ensuing discussion, one participant raised the prospect that deliverables under discussion at this meeting should include reference to their linkages with and contribution to achieving poverty alleviation and sustainable development.

On the World Energy Assessment's finding that there was vast energy capacity globally, one participant noted that accessing this was difficult for LDCs. Another said the issue of energy availability should be tackled before energy efficiency was addressed. He said the key to achieving wider availability is investment and the lack of domestic financing means donors and international funding must play a crucial role.

One speaker stressed rural electrification as an essential prerequisite and priority in terms of eradicating poverty, as it supports health and education infrastructure in addition to providing income-generating possibilities. He also highlighted the transmission and distribution of energy as a key issue for rural development and supported cooperation between LDCs.

In response to a question on short-term actions for LDCs, Thomas Johansson highlighted donor-LDC collaboration to support the Multifunctional Platform initiative. Regarding a query on the significant role forecast for solar power in 50-100 years, Johansson said solar energy is expected to become significantly more cost-effective over time.

THE MULTIFUNCTIONAL PLATFORM: Laurent Coche, Regional Coordinator, UNDP, discussed the Multifunctional Platform, which is being used for energy production in villages in Mali. He described the Platform as a basic diesel engine that can power a variety of attached tools to carry out a range of tasks, including milling, dehusking and welding, as well as generating electricity for pumping water, lighting, welding and battery charging. He said the Platform seeks to address poverty among rural women by providing a simple source of energy, and the simplicity, sturdiness and multiple applications of the engine provide a positive example of a suitable technology for village conditions. He highlighted benefits such as improved well-being of women and children in the form of increased opportunity for rest and relaxation, education for girls and income generation, as well as improved gender equality. He noted that local technologies are used in collaboration with various stakeholders, and said the sustainability of projects is ensured by UNDP through participatory feasibility studies and a results monitoring system.

ISSUE ONE: ACCESS TO ENERGY

PRESENTATION: On Wednesday afternoon, 14 March, participants considered the issue of access to energy in LDCs. Anthony Bromley, Senior Industrial Development Officer, Industrial Energy Efficiency Branch of UNIDO, made the keynote presentation. Defining "access" as the provision of reliable and affordable energy, he stressed that an increase in consumption of energy and electricity is inevitable in LDCs in order to alleviate poverty and emphasized the importance of energy access for income generation and the subsequent achievement of social goals. Regarding demand for cooking fuels, he highlighted the role of renewable energy, environmentally-acceptable fossil fuels and decentralized access to energy. He proposed the identification of appropriate policies, awareness building, creation of links between research and commercial applications, technology transfer, and local manufacture and installation as actions to promote renewable forms of energy. On promoting electrification, he advocated innovative financing schemes, appropriate policies and local involvement.

He presented proposed deliverables for consideration by participants, including promotion of: mechanisms to link ODA and national public funding to raise incomes of the poor so as to create an environment attracting investment; large-scale initiatives in selected LDCs for an integrated rural development programme; regional/sub-regional/national pilot programmes promoting decentralized energy generation; and identification and formulation of projects that could be funded by the GEF, with a particular emphasis on renewable energies.

DISCUSSION: In the ensuing discussion, several participants stressed the need to look at all possible options when dealing with access, including fossil fuels. Some noted that these are still important alternatives in LDCs and called for an examination and use of clean fossil fuels technologies where possible. One participant stressed that the use of existing local coal resources should be continued where these are relatively inexpensive.

On energy distribution, one speaker highlighted the fact that where gas and other resources exist, distribution within countries and sub-regions should be improved and financing made available for relevant infrastructure. Another suggested support by the international community for such regional cooperative projects as a possible deliverable.

One participant questioned the apparent emphasis on renewable forms of energy and called for a focus on large-scale commercial energy, stressing that renewable forms of energy are not sufficiently large-scale to allow industrial applications, which is the only way for LDCs to develop. Another participant called for the distinction between energy for the poor without access and other objectives related to

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energy, including environmental and climate change objectives. Several participants raised issues related to climate change and stressed that, while the High Level Meeting was not called to address this topic, overlapping issues related to technology transfer and capacity building are on both the High Level Meeting and climate change agendas. One participant stressed that LDCs are already promoting and producing renewable energy and underscored the need for technical assistance for LDCs in the formulation of fundable projects.

Regarding possible deliverables, one comment focused on the need to create complementarities with and avoid duplication of other initiatives, such as transfer of technology within the climate change context. Co-Moderator Cuddy stressed the need to focus on concrete projects that can be easily developed to generate forward movement. He also asked whether the expansion of electricity at all levels should be the basic message. One participant suggested that this meeting could make a concrete recommendation on a fund to explore natural gas resources for development in LDCs, particularly in Africa. Another speaker supported emphasizing the national level when formulating the proposed deliverables, keeping specific country energy needs in mind when considering regional connections.

ISSUE TWO: RATIONAL USE OF ENERGY

PRESENTATION: Participants addressed the issue of rational energy use, including energy efficiency, on Wednesday afternoon, 14 March. George Anestis, Senior Industrial Development Officer, Industrial Energy Efficiency Branch of UNIDO, introduced the topic by highlighting the critical role of energy in bringing about development. He stated that rational energy use involves reducing the energy consumed for a given purpose or service and that methods to achieve rational energy use include avoiding unnecessary consumption, reducing specific energy demands, improving efficiency and performance, and ensuring effective energy recovery.

On energy efficiency, he drew attention to the considerable potential for increased efficiency and the benefits of establishing priorities for action. He also outlined various challenges and barriers to energy efficiency. Market-related barriers include a weak enabling environment for energy efficiency investments by the private sector, such as inadequate legal and regulatory frameworks and a lack of fiscal/financial incentives, as well as low consumer awareness and interest. Institutional barriers to energy efficiency include the absence of explicit national policies at the end-use level and the limited credit available in financial institutions and the national economy.

He then outlined some options and strategies for more efficient energy systems and concluded by proposing three possible deliverables for consideration by participants: establishment of a regional/sub-regional center and network for energy efficiency that would make use of existing capacities and mechanisms; establishment of regional/sub-regional/national pilot programmes promoting Energy Service Companies (ESCOs) particularly emphasizing private sector involvement; and identification and formulation of projects eligible for GEF funding and mobilization of the required additional cost-sharing resources.

DISCUSSION: In the subsequent discussion, several participants addressed the role of the GEF. One speaker noted that the GEF featured in the suggested deliverables for both rational energy use and access issues and questioned whether such an emphasis is warranted. While agreeing that it is not a universal panacea, Co-Moderator Gürkök noted that the GEF has given every indication that it would support capacity building in LDCs, particularly in the removal of barriers to energy efficiency and in conservation, as well as renewables. He also said that the GEF co-financing requirements for LDCs can be quite low. This means

there is a window of opportunity for LDCs to secure funding through the GEF that he deemed worthy of highlighting for participants' consideration.

In response to a question on the nature of ESCOs, Chair Gürkök noted that these companies are supposed to encourage energy efficiency. One participant highlighted the role of local ESCOs in maintaining infrastructure that has been set up in rural areas.

Several speakers raised the issue of energy projects utilizing solar power/photovoltaics. One participant noted difficulties in securing ongoing funding for replacing batteries and other equipment, while another said such projects are inevitably a learning process where challenges and difficulties arise. Participants also discussed solar energy as a durable solution, with one speaker expressing doubts that they provide a viable or sustainable option.

ISSUE THREE: FINANCING

PRESENTATION: On Thursday afternoon, 15 March, Bernard Jamet, UNIDO Consultant, discussed financing for LDC energy provision. He stressed the need to prioritize and plan effectively given scarce resources and said investments in increased energy efficiency are often less costly than those in energy production. He said financing can be derived from public sources, international financial institutions or private investments, and emphasized the need to make energy-related projects in LDCs attractive for investors. He stressed the need for security in terms of stable institutional and regulatory frameworks, as well as for attractive rates of return to promote investment. He said profitability is a challenge in the energy sector, as return on investment is typically low, and advocated additional mechanisms such as a carbon credit system or fiscal measures to attract investors.

Noting that financing by means of traditional banking is not usually appropriate or possible for small-scale traditional and renewable energy projects, especially in areas with low-income levels, he stressed the need for innovative mechanisms to overcome this barrier. He said local ESCOs present an attractive solution involving private investors, and supported bundling small-scale projects, investment funds and micro-credit schemes. He highlighted the need for stable investment frameworks in LDCs, training and capacity building, and sensitization in international financial institutions with regard to LDC energy issues.

ISSUE FOUR: LDCS AND HYDROCARBONS

On Thursday afternoon, 15 March, and Friday morning, 16 March, participants addressed the issue of LDCs and hydrocarbons, including energy trends and forecasts and their implications for LDCs, oil price volatility and responses, regional cooperation, and problems faced by landlocked LDCs in relation to hydrocarbon supply.

WORLD ENERGY OUTLOOK 2000: Kiroyuki Kato, Energy Analyst, Economic Analysis Division of the International Energy Agency, presented the World Energy Outlook 2000 report, focusing on its findings and implications for developing countries and LDCs. He outlined forecasts for 1997-2020, noting that there would be an increase in commercial primary energy demand of 57%, as well as a likely increase in carbon dioxide emissions of 60%. He said developing countries would account for 70% of the increase in energy demand. Oil and gas use would continue to increase and dominate overall energy use. Regarding the supply of oil, he noted an increasing reliance on OPEC. Some price uncertainty or variability could be expected both for oil and gas. For renewables, he anticipated rapid growth, although its overall share would remain very small, doubling to two percent of total energy use.

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On the implications of the forecasts for LDCs, he noted that they are not energy rich countries and observed that their energy import requirements and costs could be expected to rise rapidly. He then considered the impact of energy subsidies, arguing that there are more effective methods to meet important social and economic development objectives. He cited a study of eight developing countries that found that ending subsidies would increase GDP, reduce carbon dioxide emissions by 17%, and produce long-term benefits in terms of investment and technology transfer. He highlighted appropriate pricing policies as fundamental to improving energy efficiency.

SUPPLY OF HYDROCARBONS TO LANDLOCKED LDCS:

Participants then heard an audio presentation transmitted live from Washington, DC by Yusupha Crookes, Senior Manager of the World Bank's Oil, Gas and Chemicals Group. He presented the Bank's perspective and activities regarding the supply of petroleum and petroleum-based products to landlocked LDCs. He highlighted transportation and logistical matters as one of the greatest constraints to delivering petroleum products to landlocked countries in Africa. In particular, the efficiency and adequacy of surface transport is a major hurdle, with specific problems including the absence or inefficiency of rail systems, lack of pipelines, and country border and bilateral problems for all surface transport. Other challenges relate to procurement, with economies of scale and the need for regional cooperation being significant factors.

In terms of setting an agenda for making progress on this issue, he said the World Bank had identified three or four transport corridors of significant petroleum product flows to landlocked countries in Africa to examine in terms of barriers to and opportunities for enhancing the efficiency of operations. He said other areas for action include identifying gaps and challenges that could be addressed by policy makers, and examining how the Bank's regional and country assistance strategies could support initiatives to improve the supply of hydrocarbons to LDCs. He also supported a dialogue to help mobilize the private sector and remove barriers to investment.

In a live audio question-and-answer session between participants at the High Level Meeting and World Bank personnel in Washington, DC, a number of participants stressed the need for landlocked LDCs to possess strategic storage facilities that could provide reserves for emergency services should there be problems with the transport corridor(s) usually used to supply petroleum. A World Bank speaker said the private sector could be encouraged to play a role in establishing a petroleum reserve, for instance by offering tax credits as an incentive.

Speakers also highlighted the importance of cooperative regional/sub-regional initiatives, for instance in developing refineries or pipelines. In this regard, examples from Central Africa and West Africa were discussed. Several participants raised the building of a pipeline from Abidjan in Cote d'Ivoire, which could help supply other areas and neighboring landlocked countries with oil.

On the outcome of the Third UN Conference on LDCs in May 2001, participants said the Conference should produce clear proposals in relation to landlocked LDCs. Regarding the contribution of the World Bank to the Conference, a World Bank speaker said the Bank has identified some currently existing transport corridors to landlocked LDCs and has proposed considering the state of these corridors and the most appropriate options to make them operate more effectively.

OIL PRICE VOLATILITY AND RESPONSES: Claudine Sigam, Energy Focal Point, UNCTAD Secretariat for the Third UN Conference on LDCs, highlighted problems faced by LDCs due to oil price volatility and possible responses. Focusing on countries in sub-Saharan Africa, she stressed the importance of oil for their economies and the effects of the "oil shock" in 1999-2000, whose impact she said

continues to be felt. She differentiated between impacts on oil exporters, now facing inflation and the need to adjust social programmes, and oil importers, now attempting to address disadvantageous terms of trade, decreased debt servicing ability, and public sector problems with regard to funding social services. She noted the difficulty in forecasting oil prices and consequently for planning in this area.

Sigam said LDCs must develop strategies to protect themselves against price fluctuations and highlighted risk management options, including the use of new financial mechanisms. She stressed that preconditions for sound financial systems include reserves in foreign currency and stable legal and regulatory frameworks - conditions often not present in LDCs.

She highlighted an UNCTAD proposal to focus on capacity building and training with regard to risk management, particularly price fluctuation risk management. She underscored the advantages of understanding both international markets and the national and regional situations in LDCs, and called for links between local and international actors to share experiences.

In the ensuing discussion, one participant stressed that LDCs are undergoing changes due to privatization of energy services and said this compounds problems caused by oil price fluctuations. One participant called for governmental and/or intergovernmental regulation of oil prices while another questioned whether the oil sector should be fully liberalized. He stressed that authorities need skills and capacities to analyze and respond to global trends in a deregulated market. Another participant stressed that government officials are dealing with oil professionals and need training to handle these situations. Sigam responded that in the course of liberalization processes, government monopolies often are replaced by private monopolies and it becomes difficult to monitor and respond to price developments. She noted that management costs may be passed on to consumers.

One participant underscored the difficulties for LDCs in establishing an appropriate or reasonable purchase price for oil, since the price is composed of access costs, taxes, distributors' margins and other elements that are often difficult to track or verify. Supported by several participants, Sigam stressed the need for proper training and domestic capacity building to increase expertise on pricing issues. In this regard, one speaker suggested a focus on interagency cooperation and exchange of experiences.

A representative of OPEC presented OPEC's perspective on oil supply and implications for LDCs. He noted international institutional advances to provide security against price fluctuations, including closer collaboration between producers and consumers and between OPEC and other oil producers and stakeholders. He underscored that oil producers are highly vulnerable to price fluctuations, as they depend on oil exports, and said secure, stable oil markets benefit all parties. He suggested that US\$22-28 per barrel is a reasonable price range for oil. Questioning the concept of an "oil shock," he said recent price hikes had occurred in response to the Asian Crisis and represented a rebalancing following a period of exceptionally low prices. He noted problems related to under-investment in the oil sector and said price stability and a reasonable outlook for prices would attract investment in infrastructure to support effective exploitation of oil and gas supplies, including in LDCs. On the removal of energy subsidies, he said the process should be gradual so as not to provoke social problems. On energy taxation, he supported a "green" restructuring that reflects sources' carbon content.

Commenting on OPEC's perspective, several speakers welcomed collaboration between OPEC and LDCs and stressed that the high oil prices in the year 2000 had been felt as a "shock" in their economies. Co-Chair Toure said positive economic developments and debt relief

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had been lost due to the high oil prices and advocated a compensation scheme for LDCs in the case of price discontinuities, possibly with the support of OPEC.

REGIONAL COOPERATION ON ENERGY IN LDCS IN AFRICA: Yvette Stevens, Special Coordinator for Africa and LDCs, UN Department of Economic and Social Affairs, made a presentation on regional cooperation on energy in LDCs in sub-Saharan Africa. Stressing the importance of regional cooperation, she suggested that resources be shared between energy rich and energy poor countries. She suggested that cooperation could provide benefits in terms of economies of scale and proposed that limited resources for research and development be pooled. She stressed the importance of fossil fuels for LDCs and proposed exploitation of regional sources of natural gas, development of cross-border electricity networks, and research, development and dissemination of renewable energy technologies. She said national governments, donor countries, multilateral financial institutions and UN agencies all have roles to play in promoting regional and sub-regional cooperation. She proposed that the following deliverables be carried forward to the Third UN Conference on LDCs: launching a natural gas exploration and development initiative for LDCs, as proposed during the CSD Energy Expert Group meeting, and a possible fund to support it; developing a technical cooperation project to enable South-South LDC cooperation for the sharing of experiences with regard to renewable energy technologies; establishing a network of centers of excellence for the demonstration and dissemination of sustainable energy technology; and developing a technical cooperation project to assist LDCs and sub-regional organizations to draw up strategies to encourage regional cooperation.

In the ensuing discussion, one participant stressed that regional cooperation depends on political will. He highlighted developmental aspects of regional cooperation and underscored ongoing regional initiatives and greater African unity. He said economic integration, promoted in particular through sub-regional organizations, is important to cope with globalization. Another participant supported sharing energy resources among LDCs in the region and the interconnection of electricity grids. One speaker stressed the complexity of managing common regional energy authorities, noting the need for adequate administrative capacity. He also highlighted the political difficulties in reaching agreement on pricing.

MEETING OUTCOMES AND DELIVERABLES

On Friday, 16 March, participants discussed possible deliverables for transmission from this High Level Meeting on Energy to the Round Table on Energy at the Third UN Conference on LDCs in May 2001. Those in attendance considered two discussion papers prepared by the UNIDO Secretariat. The first paper presented draft text for an introduction providing context/background on energy issues for LDCs. The second paper presented some of the deliverables suggested and discussed during the High Level Meeting. It was intended as a starting point for further deliberation. It listed deliverables relating to a variety of issues, including access to energy, rational use of energy, financing, LDCs and hydrocarbons, LDC-donor partnerships, and the Multifunctional Platform.

DISCUSSION: Commenting on the discussion papers, meeting Co-Moderator Cuddy suggested that the introduction paper should include an overarching objective, such as that proposed by Thomas Johansson of UNDP calling for halving the proportion of people without access to clean and affordable fuels and electricity by 2015. On the second paper outlining possible deliverables, he suggested drawing a clear distinction between urban and rural issues. On the rural side, he said participants

had raised several specific project-level deliverables, including those related to the Multifunctional Platform, solar energy, and the use of clean fuels in cooking. On industrial/urban energy matters, he detected more suggestions at the broader programmatic level that he said could nevertheless be articulated as deliverables. These included steps to reduce energy loss, such as proposals on capture and use of flared-off natural gas, a fund for natural gas exploration, and pooling of energy flows among regions, including proper training and technical assistance to help countries manage that process.

Participants then considered both papers with a view to articulating some clear text on the introduction and the deliverables for transmission to the Third UN Conference on LDCs. Regarding the introductory paper, a suggestion was made to restructure it to reflect the context and current situation for LDCs and to include some general principles and objectives. Several participants stressed the need to signal clearly the difference between rural and urban/industrial needs and solutions.

Participants then considered the paper outlining possible suggestions and ideas for deliverables, addressing the draft section-by-section. In the section on access to energy, a participant suggested that a number of countries propose integrated rural development programmes and communicate them to the Co-Chairs of the Round Table on Energy, after which projects and cooperation partners could be sought. Some participants questioned whether there was sufficient time to complete the process prior to the Third UN Conference on LDCs and what the criteria would be to select countries and projects to receive financing, while others stressed the importance of generating momentum. Co-Moderator Gürkök and Thomas Johansson indicated that UNIDO and UNDP would be willing to participate in this proposal.

Regarding possible deliverables on rational use of energy, participants removed general text referring to discussion of the role of solar power and added a sentence noting that participants discussed capacity and institution building for sustainable access to energy supply.

On financing, reference to GEF funding was inserted. One participant noted the role of ODA in attracting additional investment. Another participant drew attention to other meetings on energy, such as the recent African Energy Ministers meeting in Nairobi, and said the various meeting outcomes and processes should be linked.

On the section on LDCs and hydrocarbons, several participants said a proposed deliverable on landlocked LDCs should refer specifically to supply corridors. Participants disagreed on whether to refer to ending or addressing subsidies as an example of appropriate pricing policies in improving energy efficiency, with several speakers noting the politically sensitive nature of this issue, the importance of some subsidies for rural areas, and the need for a policy on the issue when interacting with the World Bank. Reference to the example of subsidies was deleted from the final text.

Participants supported a suggestion by an OPEC representative for an event or events to be held on the functioning of oil markets and strategies to respond to oil price fluctuations. An UNCTAD representative drew attention to its initiative to coordinate a training programme for professionals from LDC governments to develop oil market expertise.

On other issues, participants discussed text on promoting cooperative programmes on renewable energies between LDCs and donor countries. One participant stressed that this does not imply only government-to-government cooperation and suggested adding reference to the private sector, as well as moving the proposal to the section on access to energy. Another participant said the text should highlight not only the difference between rural and urban areas, but also between different geographic regions.

SUSTAINABLE DEVELOPMENTS

OUTCOME TEXT ON DELIVERABLES: The outcome text on deliverables that emerged following discussions among participants consists of an introduction and sections containing a number of specific deliverables for transmission to the Third UN Conference on LDCs.

Introduction: The introduction highlights key challenges in terms of energy issues facing LDCs, including the fact that two billion people have no access to electricity and an additional two billion have access only to unreliable energy. It notes the linkages between energy availability and poverty, as well as related environmental problems. It also highlights a proposed energy goal of reducing the proportion of people without access to clean and affordable fuels and electricity by half by 2015, and suggests that such a goal would help achieve broader poverty alleviation goals.

The text lists deliverables under a variety of categories, including access to energy, rational use of energy, financing, LDCs and oil, and other issues.

Access to energy: This section includes specific deliverables to, *inter alia*:

- introduce development mechanisms to link ODA and national public funding to raise incomes of the poor so as to create an environment attractive for investment;
- invite LDCs' governments to assign a higher priority to the energy sector;
- support large-scale initiatives in selected LDCs for an integrated rural development programme, and identify a number of LDCs that can draft rural development programmes with energy components;
- establish regional/sub-regional/national pilot programmes promoting decentralized energy generation, for instance through the Multifunctional Platforms;
- promote cooperative programmes between LDCs and donors for the local assembly/manufacture of renewable energy equipment, including private sector involvement; and
- identify and formulate projects that could be funded by the GEF and mobilize additional cost-sharing resources.

The text notes that participants discussed a variety of other issues under this section, including: the need for technical assistance for LDCs in the formulation of fundable projects; the need to improve energy distribution and cooperation within countries, sub-regions and regions and to make financing available for relevant infrastructure; the value of South-South cooperation for the sharing of experiences in the area of renewable energy; and the need to avoid duplication and build on complementarities with other initiatives, such as transfer of technology in the context of climate change.

Rational use of energy: This section includes deliverables that propose the: establishment of a network of regional/sub-regional centers for energy efficiency that would make use of existing capacities and mechanisms; establishment of regional/sub-regional/national pilot programmes promoting Energy Service Companies (ESCOs) particularly emphasizing private sector involvement; and identification and formulation of projects eligible for GEF funding and mobilization of the required additional cost-sharing resources.

Financing: On the issue of financing, the text that emerged from the High Level Meeting refers to deliverables to: identify the preconditions for attracting investment in the energy sector; promote the role of ESCOs; support investments in energy efficiency as a cost-effective solution; promote stable institutional and regulatory frameworks; assist in the development of possible mechanisms (such as a carbon credit system or fiscal measures) to attract investors; bundle small-scale projects, and promote investment funds and micro-credit schemes;

support relevant training and capacity building; assist in the development of plans for investment strategies; and conduct feasibility studies for national/regional projects.

LDCs and hydrocarbons: Deliverables on this issue call for:

- organization of a conference on the development of strategies to protect against oil price fluctuations, such as risk management strategies, with UNCTAD acting as the lead agency in cooperation with other parties, including UNIDO and OPEC, and with the support of Austria;
- the launch of the African training programme on hydrocarbons trade, risk management and finance, to be coordinated by UNCTAD;
- a focus on the critical role of efficient and appropriate pricing policies in improving energy efficiency;
- the launch of natural gas exploration and development initiatives for LDCs as proposed by the UN Secretary-General;
- a technical cooperation project to assist LDCs and sub-regional organizations to draw effective policies and strategies to encourage regional cooperation for cross-border energy supply;
- further consideration of specific deliverables for landlocked LDCs and corridors to those LDCs;
- support for the establishment of strategic petrol storage facilities in landlocked LDCs, including encouragement to the private sector to be actively involved in this initiative; and
- strengthening of institutional capacities in the hydrocarbon sector through comprehensive training programmes.

Other issues: The High Level Meeting also articulated deliverables relating to several other issue areas. On LDC-donor partnerships, the outcome document said pilot partnerships should be promoted, beginning with the establishment of energy agencies in selected LDCs and cooperation with these new agencies to establish appropriate infrastructure and know-how regarding energy efficiency and renewable energy. In this regard, EU networks could participate to ensure access to EU financing schemes and Austria could play an active role. Other deliverables on partnerships supported an initiative for strengthening existing agencies - such as through twinning programmes - and the preparation by Austria of a compendium outlining its experiences and useful lessons and contacts in the area of energy projects.

In other text, the Multifunctional Platform - a decentralized energy system for rural use - was supported and its contribution to village-level development, income generation, and the advancement of women was noted. The outcome document also highlighted the promotion of technological leap-frogging and stressed support for rural electrification as an essential prerequisite in poverty eradication.

CLOSING PLENARY

During the closing plenary session, Co-Moderator Gürkök outlined the process leading from this meeting to the Round Table on Energy in May 2001. He said the possible deliverables would be considered in April 2001 by the Preparatory Committee for the Third UN Conference on LDCs. He encouraged meeting participants to contact UNIDO with any ideas they might have on the process leading to the Round Table on Energy and beyond.

Irene Freudenschuss-Reichl, Co-Chair of the CSD Energy Experts Group, thanked UNIDO for organizing this meeting. Discussing the upcoming Round Table on Energy, she expressed the hope that concrete outcomes would emerge and said the Round Table co-chairs should play an important role both prior to and during the event.

Co-Chair Toure and Co-Moderator Gürkök thanked participants for their valuable contributions and closed the meeting at 5:00 pm.

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THINGS TO LOOK FOR

SECOND INTERNATIONAL EXHIBITION ON NEW ENERGY AND CLEAN ENERGY 2001: This exhibition will be held from 30 March -1 April 2001 in Shanghai, China. The exhibition will profile: solar power equipment; wind power accessories and manufacturing equipment; and application technology and manufacturing equipment of hydrogen energy. For more information contact: Sylvia Cheng, Coastal International Exhibition; tel: +13 852-2827-6766; fax: +13 852-2827-6870; e-mail: general@coastal.com.hk; Internet: <http://www.coastal.com.hk>

SIXTH INTERNATIONAL CONFERENCE ON SOLAR ENERGY AND APPLIED PHOTOCHEMISTRY: This meeting will convene from 3-8 April 2001 in Cairo, Egypt, and will focus on basic and applied photochemistry, photophysics, photobiology, as well as their industrial and environmental implications. For more information contact: Sabry Abdel-Mottaleb, Faculty of Science, Ain Shams University, Cairo, Egypt; tel: +20 12-216-9584; fax: +20 2-244-7683; e-mail: solar@photoenergy.org; Internet: <http://www.photoenergy.org/solar2001.html>

CONFERENCE ON EQUITY AND GLOBAL CLIMATE CHANGE: This international conference will take place from 17-18 April 2001 in Washington, DC. It is being organized by the Pew Center on Global Climate Change. The meeting will consider "fair and reasonable" actions for all countries in addressing climate change, as well as how issues of competitiveness, economic growth and ethics relate to this debate. For more information contact: Christie Jorge Santelises; tel: +1-703-516-4146; e-mail: jorgec@pewclimate.org; Internet: <http://pewclimate.org/events>

WTO SUB-COMMITTEE ON LEAST DEVELOPED COUNTRIES: During the remainder of 2001, this sub-committee will meet from 17-18 April and 27-28 November. For more information contact: WTO; e-mail: enquiries@wto.org; Internet: http://www.wto.org/english/news_e/meets.doc

CSD-9: The Ninth Session of the Commission on Sustainable Development will convene in New York from 16-27 April 2001. This session will focus on: atmosphere; energy/transport; information for decision making and participation; and international cooperation for an enabling environment. A multi-stakeholder dialogue segment will consider energy and transport. For more information contact: Andrey Vasilyev, Division for Sustainable Development; tel: +1-212-963-5949; fax: +1-212-963-4260; e-mail: vasilyev@un.org; Internet: http://www.un.org/esa/sustdev/csd9/csd9_2001.htm. For information for major groups, contact Zehra Aydin-Sipos, Division for Sustainable Development; tel: +1-212-963-8811; fax: +1-212-963-1267; e-mail: aydin@un.org

KYOTO MECHANISMS: EMERGING BUSINESS OPPORTUNITIES: This forum, which will meet from 10-11 May 2001 in Hong Kong, will examine the business opportunities and risks as countries work towards a final agreement under the UNFCCC Conference of the Parties. Several companies will outline emissions trading market structures and provide insights on global corporate initiatives in promoting emissions trading. Government officials from India and China will discuss investment opportunities available under the Kyoto mechanisms. Case studies on Malaysian and Indonesian CDM projects will examine legal, auditing and finance issues. For more information contact: Centre for Management Technology, Christina Lu Jialing; tel: +65-346-9132; e-mail: christina@cmtp.com.sg; Internet: <http://www.cmtevents.com>

THIRD UN CONFERENCE ON LEAST DEVELOPED COUNTRIES: This meeting will convene from 14-20 May 2001 in Brussels, Belgium. It will include the Round Table on Energy. The

Conference is preceded by a number of preparatory meetings. Those still to be held will address: mainstreaming gender in development strategies (Cape Town, South Africa, 21-23 March); commodity products diversification (Geneva, 22-23 March); education (Washington, DC, 23-24 March); and tourism (Las Palmas, Spain, 26-29 March). For more information contact: Office of the Special Coordinator for Least Developed, Landlocked and Island Developing Countries, UNCTAD, Geneva, Switzerland; tel: +41-22-907-5893; fax: +41-22-907-0046; Internet: <http://www.unctad.org/en/subsites/ldcs/document.htm> and <http://www.un.org/events/ldc3/conference/>

"ISTANBUL+5" - SPECIAL SESSION OF THE UN GENERAL ASSEMBLY FOR AN OVERALL REVIEW AND APPRAISAL OF THE IMPLEMENTATION OF THE HABITAT AGENDA: This Special Session of the UN General Assembly will be held in June 2001. It will review and appraise progress made on the implementation of the outcome of the second UN Conference on Human Settlements (Habitat II), which was held in Istanbul, Turkey in 1996. For more information contact: Axumite Gebre-Egziabher, Coordinator, Istanbul+5, UN Centre for Human Settlements, Nairobi, Kenya; tel: +254-2-623-831; e-mail: Axumite.Gebre-Egziabher@unhcs.org; Internet: <http://www.istanbul5.org/meetings/>

RESUMED COP-6/14TH SESSIONS OF THE UNFCCC SUBSIDIARY BODIES: The resumed COP-6 (as outlined under COP-6 decision FCCC/CP/2000/L.3) and the 14th sessions of the Subsidiary Bodies of the UN Framework Convention on Climate Change will be held from 16-27 July 2001 in Bonn. For more information contact: the UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; Internet: <http://www.unfccc.int>

FIFTH SESSION OF THE CONFERENCE OF THE PARTIES TO THE UN CONFERENCE TO COMBAT DESERTIFICATION: COP-5 is scheduled to meet from 17-28 September 2001 in Bonn, Germany. For more information contact: the UNCCD Secretariat; tel: +49-228-815-2800; fax: +49-228-815-2898/99; e-mail: secretariat@unccd.int; Internet: <http://www.unccd.int>

18TH WORLD ENERGY CONGRESS: This meeting will take place from 21-25 October 2001 in Buenos Aires, Argentina. For more information contact: World Energy Council, United Kingdom; tel: +44-20-7734-5996; fax: +44-20-7734-5926; Internet: <http://www.mbendi.co.za/wec/contact.htm>

INTERNATIONAL CONFERENCE ON FINANCING FOR DEVELOPMENT: The UN International Conference on Financing for Development will be held in February/March 2002. It will bring together high-level representatives from governments, the United Nations and other leading international trade, finance and development-related organizations. The Preparatory Committee is expected to meet in 2001 in New York from 2-8 May and in October/November at a date to be decided. For more information contact: Financing for Development Coordinating Secretariat, United Nations Headquarters, New York; Harris Gleckman, tel: +1-212-963-4690; e-mail: gleckman@un.org; or Federica Pietracci, tel: +1-212-963-8497; e-mail: pietracci@un.org; Internet: <http://www.un.org/esa/ffd>

WORLD SUMMIT ON SUSTAINABLE DEVELOPMENT (RIO+10): The World Summit on Sustainable Development for the ten-year review of progress in implementing the outcome of the UN Conference on Environment and Development held in Rio in 1992, will take place in Johannesburg, South Africa, in 2002. The exact dates are yet to be determined. The Summit will aim to reinvigorate the global commitment to sustainable development at the highest level. More information is available online at: <http://www.un.org/rio%2b10/>