



Global Forum on Sustainable Energy Bulletin

A summary report of the Seventh Meeting of the Global Forum on Sustainable Energy (GFSE-7)

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SEVENTH MEETING OF THE GLOBAL FORUM ON SUSTAINABLE ENERGY: "ENERGY EFFICIENCY FOR DEVELOPING COUNTRIES": 21-23 NOVEMBER 2007

The Seventh Meeting of the Global Forum on Sustainable Energy (GFSE-7) was held from 21-23 November 2007, at the Vienna International Centre, Vienna, Austria. The meeting convened under the theme "Energy Efficiency for Developing Countries – Strong Policies and New Technologies," and considered policies, case studies, and initiatives related to improving and promoting energy efficiency in developing countries, as well as opportunities, barriers, and the way forward.

GFSE-7 was organized by the Global Forum on Sustainable Energy in collaboration with the Austrian Development Cooperation at the Federal Ministry for European and International Affairs, the Austrian Ministry of Agriculture, Forestry, Environment and Water Management, and the Austrian Energy Agency.

The meeting brought together 184 representatives from government agencies, UN bodies and international organizations, academia, business and industry, civil society and financial institutions. Participants met in eight expert panel sessions to hear presentations and engage in discussions on a variety of relevant topics, including scenarios for developing countries, energy efficiency and industrial development, carbon finance, investing in energy efficiency, and connections to poverty reduction in urban and rural areas.

Participants attending GFSE-7 also watched video presentations showcasing energy efficiency success stories in developing countries, and visited Schwechat Brewery for a practical demonstration of energy efficiency in production processes.

A BRIEF HISTORY OF THE GFSE AND SUSTAINABLE ENERGY

The Global Forum on Sustainable Energy (GFSE) was launched by Austria's Foreign Minister in 1999. The initiative stems from outreach efforts of the World Energy Assessment, which was organized by the UN Development Programme (UNDP), the UN Department of Economic and Social Affairs and the World Energy Council. The GFSE provides a platform for multi-stakeholder dialogue aimed at facilitating decision-making on energy policy issues in relevant fora. It also seeks to foster public-private partnerships.

GFSE-1: The first GFSE meeting convened from 11-13 December 2000, in Laxenburg, Austria. GFSE-1 addressed the theme "Rural Energy – Priorities for Action," and contributed to preparations for the ninth session of the Commission on Sustainable Development (CSD-9), which took up various energy-related issues. Participants at GFSE-1 considered the linkages between rural energy and sustainable development, enabling frameworks for attracting investment for rural energy, lessons learned, financing issues, the challenges and opportunities of regulatory reform, and innovation.

GFSE-2: The second GFSE meeting convened from 28-30 November 2001, in Laxenburg, Austria, and addressed the issue of "Energy Technologies – Cooperation for Rural Development." Participants heard presentations and engaged in discussions on: stocktaking of the international energy discourse; facilitating the transfer of energy technologies suitable for rural development; case studies on successful modalities for transfer of energy technologies; and enabling policy environments and creating conditions for private sector involvement in the transfer of energy technologies for rural

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needs. Participants met in two regional working group sessions on rural electrification and clean fuels for rural needs in Africa, and in Asia and Latin America. Participants also considered the desired outcomes of and proposals for the upcoming World Summit on Sustainable Development (WSSD).

WSSD: Energy for sustainable development was not specifically dealt with at the UN Conference on Environment and Development (UNCED) held in Rio in 1992. However, as Agenda 21 and the Rio Conventions were being implemented in the 1990s, energy emerged as a significant issue. The five-year follow-up meeting to UNCED in 1997 decided that CSD-9 in 2001 would address energy, transport and atmosphere. CSD-9 was preceded by comprehensive preparations on energy issues, including meetings of the *Ad Hoc* Open-Ended Intersessional Group of Experts on Energy and Sustainable Development, and through regional intersessional meetings. CSD-9 recognized, *inter alia*, that the Millennium Development Goals (MDGs) would not be met without increased access to modern energy services.

Energy was one of the key areas addressed at the WSSD. In the Johannesburg Plan of Implementation (JPOI) agreed at the WSSD, governments made a commitment to improve access to reliable and affordable energy services, promote sustainable use of biomass, and support the transition to the cleaner use of fossil fuels. Energy issues were also addressed in JPOI chapters pertaining to small island developing States, Africa, regional initiatives, and health and sustainable development. The WSSD also encouraged the development of new “Type II” initiatives – voluntary public-private partnerships aimed at advancing implementation on the ground. Several of these Type II initiatives were launched in the area of energy for sustainable development.

GFSE-3: The third GFSE meeting convened from 27-29 November 2002, in Graz, Austria, and addressed public-private partnerships for rural energy development. It considered the relevant outcomes of the WSSD and sought to support the further development of initiatives to promote WSSD implementation, including the EU initiative on Energy for Poverty Eradication and Sustainable Development. Plenary sessions held during GFSE-3 covered topics such as innovative financial instruments for private sector involvement in rural energy development; implementation of the energy outcomes of the WSSD; how to make the WSSD work in Africa and Asia; and the role of operational international organizations and funding agencies for rural energy development.

CSD-11: CSD-11 took place at UN headquarters in New York from 28 April - 10 May 2003. Delegates discussed the future work of the Commission, which had been created in 1992 to ensure effective follow-up of UNCED in monitoring and reporting on the implementation of the Earth Summit Agreements at the local, national, regional and international levels. At CSD-11, governments adopted a new work programme for CSD for the period 2004-2017. CSD-11 agreed that future sessions would consider a limited number of topics, or “thematic clusters.” These clusters were to be examined over two-year “implementation cycles.” Energy issues were included in the thematic cluster for the 2006-2007 cycle.

GFSE REGIONAL SEMINAR: From 27-28 November 2003, GFSE held a regional seminar in Vienna, Austria, that focused on district heating in South Eastern Europe. This seminar underlined the importance of district heating for the social and economic wellbeing of large parts of the population in the countries of South Eastern Europe and emphasized the important contribution that district heating and combined heat and power generation could make to sustainable development.

GFSE-4: This meeting, entitled “Energy for Sustainable Development: Reconsidering the Role of Incentive Measures,” was held from 18-20 February 2004, in Vienna, Austria. GFSE-4 focused on renewable energy issues in order to provide input to the International Conference for Renewable Energies held in Bonn, Germany, in June 2004. GFSE-4 also brought together various energy-related partnerships announced at the WSSD in order to discuss their progress, and sought to contribute to ongoing work on the use of incentive measures for sustainable energy.

GFSE REGIONAL WORKSHOP: This GFSE regional workshop for countries that are members of the International Centre for Integrated Mountain Development was held from 24-26 November 2004, in Paro, Bhutan. The meeting considered the theme of “Access to Rural Energy for Sustainable Development and Policies for Rural Areas.” The workshop emphasized increasing awareness among the countries of the Himalaya-Hindukush Region (Afghanistan, Bangladesh, Bhutan, China (Tibet), India, Myanmar, Nepal, and Pakistan) and donor countries on rural energy supply for sustainable development as part of the MDGs.

GFSE-5: The fifth GFSE was held from 11-13 May 2005, in Vienna, Austria, under the theme “Enhancing International Cooperation on Biomass,” putting special emphasis on strengthening the institutional capacity to promote South-South cooperation. Participants also addressed a variety of relevant topics, including: potentials and challenges for increasing biomass use; synergies and risks between food and biofuel crops; biofuels for sustainable transport; and biomass for electricity production and household heating.

CSD-14: The fourteenth session of the Commission on Sustainable Development (CSD-14) met from 1-12 May 2006, at UN Headquarters in New York. CSD-14 was tasked with reviewing progress in the areas of energy for sustainable development, industrial development, air pollution/atmosphere, and climate change. CSD-14 included thematic discussions, expert panels, a multi-stakeholder dialogue, and a high-level segment. The meeting was dominated by the energy agenda, with discussions focusing on energy security, the impact of oil and gas prices, and the respective roles of renewable energy technologies, fossil fuels, nuclear power and the post-2012 multilateral climate change regime.

GFSE-6: The sixth GFSE was held from 29 November - 1 December 2006, in Vienna, Austria. The meeting convened under the theme “Africa is Energizing Itself” and focused on sustainable energy in the African continent, with particular attention to sub-regional issues, biofuels, hydropower, Clean Development Mechanism (CDM) opportunities in Africa, how GFSE can contribute to CSD-15, and financial engineering for energy in Africa.

CSD-15: CSD’s fifteenth session was held from 30 April - 11 May 2007, at UN headquarters in New York. Building on the outcomes of CSD-14, CSD-15 focused on expediting the implementation of commitments in the areas of energy for sustainable development, industrial development, air pollution/atmosphere and climate change, as contained in Agenda 21, the Programme for the Further Implementation of Agenda 21, the Johannesburg Plan of Implementation (JPOI) and the Millennium Declaration. Delegates were unable to agree on policy decisions on practical measures and options to expedite implementation of commitments, and a Chair’s Summary text was issued in lieu of a negotiated outcome.

REPORT OF GFSE-7

WELCOME AND KEYNOTE ADDRESSES

Irene Freudenschuss-Reichl, Director-General, Austrian Development Cooperation, Austrian Federal Ministry for European and International Affairs, welcomed participants to GFSE-7, noting the need to address energy efficiency matters in developing countries.

Brigitte Öppinger-Walchshofer, Managing Director, Austrian Development Agency, emphasized the urgency of energy efficiency discussions and recalled that the 2002 World Summit on Sustainable Development (WSSD) and subsequent relevant sessions of the Commission on Sustainable Development (CSD) had called for increased support for sustainable energy. She highlighted the Austrian Development Agency's commitment to support partner countries to implement sustainable energy strategies, and added that the Agency recently joined the Energy and Environment Partnership for Central America and also supports the Economic Community of West African States (ECOWAS) in implementing their rural energy policies.

Johannes Kyrle, Secretary General, Austrian Federal Ministry for European and International Affairs, emphasized that secure, reliable and affordable energy is required for development and political security. He indicated that Austria is working with ECOWAS to establish a center for renewable energy and energy efficiency in West Africa and also noted the need to improve energy efficiency in Organization for Economic Cooperation and Development (OECD) countries.

Elfriede Anna More, Director, Austrian Ministry of Agriculture, Forestry, Environment and Water Management, reiterated that Austria has adopted comprehensive quantitative and time-bound targets on energy efficiency as well as the enhanced use of renewables across a broad range of productive sectors. She also highlighted Austria's expertise in environmental technologies, which is being leveraged through a number of technical cooperation programmes with developing countries.

Kandeh Yumkella, Director General, UN Industrial Development Organization (UNIDO), remarked that rising fuel prices pose a significant challenge to developing countries with limited foreign exchange reserves. He cited World Bank estimates that steep global energy prices could translate into a 2-4 percent reduction in growth rates in developing countries, which would greatly compromise recent gains in poverty reduction. Yumkella lauded the Austrian initiative to set up a renewable energy center in West Africa and urged all stakeholders to consider systems approaches to energy design and management, including making closer linkages between global business practice and environmental compliance.

Monyane Moleleki, Minister of Natural Resources, Lesotho, emphasized the threat of climate change and said efforts to achieve energy access for developing countries should be environmentally responsible and "leapfrog" the past errors of industrialized countries. He also outlined his country's energy efficiency initiatives, noting that improving energy efficiency requires: government and private sector cooperation; appropriate legislative and regulatory instruments; capacity building, including for energy audits; a review of energy tariff policies; and cooperation with development partners.

PANEL I: ENERGY EFFICIENCY SCENARIOS FOR DEVELOPING COUNTRIES: POTENTIALS, BARRIERS AND INTERVENTION LINES

Barbara Buchner, International Energy Agency (IEA), considered energy efficiency improvements in IEA countries over the last decade and concluded that energy efficiency policies have been effective and can be implemented without hindering economic growth. She called for increased promotion of such policies, including in developing countries, stating that energy efficiency improvements can be achieved through the use of best practices and available clean and efficient technologies.

Speaking on the topic "Energy Efficiency Chances for Africa," Thomas Kraneis of Lahmeyer International, a sustainable engineering consulting firm, noted that growing global energy demand provides an opportunity to scale up renewable energy production. He highlighted that although electrification rates in Africa are currently below 40 percent, some promising developments have occurred, including the world's first solar thermal plant in Algeria, geothermal energy development in Kenya, and wind power generation in Egypt.

Klaus Brendow, World Energy Council, outlined a survey of energy efficiency in 70 countries, emphasizing that the current worldwide efficiency growth rate of 1.6 percent is "desperately insufficient." He listed impediments to improving energy efficiency, especially incorrect price signals, ineffective governance of energy efficiency, and inefficient power generation, and suggested that power generation efficiency in all developing countries could be boosted to world-best levels at a cost of only US\$2.3 billion per year, saving 2.2 gigatonnes of carbon dioxide emissions.

Keywan Riahi, International Institute for Applied Systems Analysis, presented two energy consumption scenarios, one reflecting reliance on fossil fuels and the other a significant increase in the use of renewables. He stated that the second scenario showed increased energy efficiency, mostly due to improved quality of end use fuels. He called for increased investment in the energy sector, emphasizing that the main difference between the two scenarios was the intensity of investments and whether the renewables and bioenergy or fossil fuel sectors received these investments.

Facilitating the discussion, Chair Freudenschuss-Reichl asked delegates to consider how the high investment costs for improved energy efficiency in developing countries could be met, including ideas for leveraging existing development assistance. Several participants addressed measurement questions, noting that low energy intensity does not necessarily equate to energy efficiency. Others suggested re-examining what energy efficiency actually means, such as whether achieving energy savings alone is sufficient or if factors such as reduced greenhouse gas emissions should also be included. On technology transfer, a number of



Keynote addresses were delivered by L-R: Johannes Kyrle, Austrian Ministry for European and International Affairs; Monyane Moleleki, Minister of Natural Resources, Lesotho; Irene Freudenschuss-Reichl, Austrian Ministry for European and International Affairs; Kandeh Yumkella, Director General, UNIDO; Brigitte Öppinger-Walchshofer, Austrian Development Agency (ADA); and Elfriede Anna More, Austrian Ministry of Agriculture, Forestry, Environment and Water Management.



Delegates took part in expert discussion panels on energy policies and initiatives to help developing countries to improve their energy efficiency, security and sustainability.

delegates emphasized the need to strengthen intellectual property protection in developing countries in order to encourage foreign direct investment in the energy sector, while others called for more “creative” approaches to encourage access by developing countries to new technologies and skills. Participants also discussed enhancing energy efficiency targets, and the need to balance methodological precision with clear and practical recommendations for policy makers.

PANEL II: INITIATIVES AT THE EUROPEAN UNION AND MULTILATERAL LEVEL

Rainer Hakala, EC Directorate-General of Development, outlined the Africa/EU Energy Partnership, which aims to increase cooperation on issues related to energy prices and security, energy access, and climate change. He listed key elements of the Partnership, including: promotion of transparency in the energy sector; development-oriented use of oil and gas resources; mainstreaming climate change in energy development cooperation; and scaling up investment in energy infrastructure, including promotion of renewable energy solutions.

Soren Krohn, World Bank, presented the Bank’s energy efficiency initiatives, including heat pricing and billing policy development in China, programmes to replace incandescent bulbs with compact fluorescent lamps, and the Bank’s Clean Energy Investment Framework. He explained that the Framework aims to assist countries in energy efficiency policy making and capital mobilization, based on the principles of increased energy access, transition to low carbon economies, and adaptation to climate change.

Marianne Osterkorn, Renewable Energy and Energy Efficiency Partnership (REEEP), outlined her organization’s work in enhancing energy access and promoting international cooperation, including 68 projects worldwide that encourage integrated resource planning and decentralized demand-side solutions such as improvements in agricultural equipment alongside rural electrification projects. Osterkorn also highlighted projects to support the local banking sector in developing countries to invest in energy efficiency projects.

Minoru Takada, UN Development Programme (UNDP), called for the debate on energy efficiency and energy intensity to take into account that least developed countries (LDCs) rely on traditional fuel sources and human muscle power rather than on modern fuels and mechanical power. He emphasized that simple measures, such as providing more efficient cooking stoves and replacing human muscle power with mechanical power, have

massive benefits for human development and productivity, and can be applied in many LDCs for as little as two to three dollars per person in rural areas.

Daniel Puig, UN Environment Programme (UNEP), underlined the need for progress in energy efficiency in developing countries’ building and transport sectors. He suggested achieving this by



Daniel Puig, UNEP

establishing technology and economic assessment panels for phasing out obsolete technologies, following the model used by the Montreal Protocol on Substances that Deplete the Ozone Layer.

Herbert Ritter, Austrian Energy Agency, said national energy agencies have an essential role in fostering energy efficiency, including: moderating between policy and market needs; developing and implementing national

energy efficiency measures; acting as a knowledge base on energy technology and sustainability; networking with other countries; and adapting global best practices to meet national needs. In conclusion, he outlined his agency’s work, including bilateral energy partnerships and support for other countries in establishing national energy agencies.

In the ensuing discussion, several participants lamented the scarcity of success stories “on the ground” despite the implementation of many promising energy projects. In this regard, many reiterated the need for integrated policy approaches that take account of the political and social environment and other important non-technical barriers. Delegates also urged funding agencies to link project funding to energy efficiency performance obligations. Other suggestions focused on the potential for replicating promising initiatives, such as the World Bank’s Lighting Africa project, which emphasizes the development of commercially sustainable and locally appropriate business models.

PANEL III: VIEWS FROM DEVELOPING AND TRANSFORMATION COUNTRIES AND REGIONS

Hussein Elhag, African Energy Commission, identified sectors with potential for energy savings in Africa, including the hydrocarbon, electricity generation, biomass, transportation, industry and residential sectors. He outlined the Commission’s work, which includes providing technical assistance, capacity building, information and guidance, and supporting the formation of partnerships between the private sector and the international community.

David Yuko, Institute of Research in Sustainable Energy and Development, Kenya, spoke on engaging governments and policy makers on renewable energy and energy efficiency issues in Africa. He explained that despite Africa’s large reservoir of unexploited renewable energy resources, governments in the region tend to focus on conventional energy options and short-term political interests. Yuko called for market-led and local-scale options and mobilizing sustainable financial resources for long-term investment in new energy sources.

Mentor Poveda, Latin American Energy Organization (OLADE), highlighted various energy efficiency initiatives in the region, including: Brazil’s efforts to promote energy



efficiency following privatization of Electrobras in 1985; energy saving projects in Costa Rica and Peru; promotion of compact fluorescent lamps in Cuba; technical assistance programmes in Mexico; and a refrigerator labeling programme in Jamaica. He described several support initiatives implemented by OLADE, including disseminating experiences, guidelines on energy auditing and training of energy professionals.

Roland Clarke, Caribbean Community and Common Market (CARICOM), presented the CARICOM Secretariat's programmes that aim to remove barriers to the development of renewable energy in the region, including a financial assistance mechanism and the provision of transactional assistance to renewable energy projects. He gave examples of success stories in the region and recommended policy action, increased financial assistance and awareness raising in order to promote renewable energy projects.

Gilberto Jannuzzi, University of Campinas, Brazil, commented on Brazil's national system of compulsory investments by energy utilities in energy efficiency, research and development, funded by a one percent charge on consumers' electricity bills. He reported some success but lamented poor reporting and evaluation and low cost-effectiveness, and explained that a new regulation currently under development aims to improve evaluation of energy savings and define major projects in which utilities can collaborate.

In the ensuing discussion, participants called for increased exploitation of wind energy and geothermal resources, and improved energy efficiency in the Caribbean hotel and tourism sectors. In response to a comment that persuading politicians and policy makers of the benefits of energy efficiency can improve the funding for its implementation and promotion, Elhag remarked that capacity building is often provided for this purpose to ministers, who often come from a non-energy background. Participants also pointed out the need to make clear who benefits from energy efficiency, in order to ensure increased support for energy efficiency activities. On the use of food crops for producing biofuels, a participant noted the need to balance food security and energy security.

PANEL IV: ENERGY EFFICIENCY AND INDUSTRIAL DEVELOPMENT

Robert Williams, UNIDO, spoke on energy management standards, which he described as a tool for continuously managing energy efficiency in industry to achieve system optimization. He outlined components, including matching system supply to work requirements, and eliminating inefficient uses and practices. He concluded that the energy and cost savings of applying energy management standards are significant compared to the upfront costs, and that the payback period can be less than two years.

Mahesh Patankar, International Institute for Energy Conservation, India, reported that regulatory and market interventions in India's lighting sector have achieved estimated savings of up to 10,000 megawatts and improved services for consumers, with the revenues being reinvested in energy conservation programmes, public awareness, and other improvements. Patankar noted, however, that more should be done to enhance demand-side management, including entrepreneurship development, support for energy efficient equipment and service "aggregators," and continuous monitoring and evaluation.

Denis van Es, University of Cape Town, South Africa, described demand-side management efforts in his country, which are overseen by ESKOM, South Africa's primary electricity supplier, funded by a percentage of the electricity tariff and administered by a national regulator. Explaining that demand-side management is carried out for economic reasons due to electricity shortages, he noted successes in areas such as lighting, motor and pump efficiency, but said efficiency targets need to be much higher.

Paul Kirai, GEF-KAM Industrial Energy Efficiency Project, Kenya, reported that his project has achieved energy savings equivalent to 140 megawatts worth about US\$36 million, and reductions in carbon dioxide emissions of 580,000 tonnes. He highlighted the need to sustain the benefits from the project by institutionalizing energy efficiency through awareness raising, capacity building, implementation and financing, and establishing a policy and legal framework.

Astghine Pasoyan, Alliance to Save Energy, discussed a recent study of the residential energy sector in south-eastern Europe that found 82 percent savings from switching to local gas heat in the Ukraine, and a 15-20 percent reduction on household heating bills in Armenia due to the provision of revolving funds for energy efficiency. Her recommendations included: harmonizing the legal environment; establishing social safety nets; developing municipal energy plans; switching to consumption-based billing; and promoting long-term financing mechanisms that ensure sufficient rates of return on investments by municipalities.

In the discussion, one participant asked how to improve energy efficiency in developing countries where a major part of the national budget is spent on fuel subsidies. In response, Pasoyan recommended pilot projects to demonstrate that energy efficiency leads to lower utility bills for consumers, followed by policies to boost energy efficiency in low income households and allow subsidies to be gradually reduced as household bills decrease.

PANEL V: ENERGY EFFICIENCY AND CARBON FINANCE

Binu Parthan, REEEP, said that 97 of the 844 registered projects under the Kyoto Protocol's Clean Development Mechanism (CDM) address energy efficiency. He listed insufficient methodologies and the difficulty of demonstrating "additionality" as barriers to CDM projects on energy efficiency. Parthan then outlined initiatives to overcome these barriers, including the CDM Gold Standard, and adopting a programmatic approach to the CDM that allows the CDM Executive Board to approve a portfolio of projects, rather than considering initiatives on a single, project-by-project basis.

Marina Ploutakhina, UNIDO, spoke on energy efficiency and carbon finance under the CDM, noting that the CDM is failing to generate projects for improving end-use energy efficiency in industry due to methodological difficulties. Underlining that energy efficiency projects often struggle to demonstrate additionality, she said that CDM projects that help industry to achieve efficiency standards that are already in place should be allowed, and said a programmatic CDM approach should help to achieve this.

Gertraud Wollansky, Federal Ministry of Agriculture, Forestry, Environment and Water Management, Austria, described the Austrian initiative on the CDM in Africa, which aims to actively source projects from Africa, including projects focusing on energy efficiency. She said the initiative had organized workshops to identify projects, highlighting efficient charcoal production and



supply of efficient light bulbs as some of the projects identified, and envisaged financing the calculation of country emission factors and supporting the development of new Africa-specific methodologies.

Albrecht Kaupp, Indo-German Energy Programme, GTZ, asked “What Color Should Your Energy Supply Be?” Asserting that relying on green energy alone is unsustainable as benefits are continually outstripped by increased energy demand from economic growth, he suggested a “rainbow approach” combining energy efficiency, demand-side management and “energy modesty,” or not having more appliances and machines than necessary. Outlining India’s energy conservation policies, he challenged industrialized countries to reduce their *per capita* energy consumption, cautioning that the alternative might be a return to a pre-industrial society, “albeit one lit by energy-efficient candles.”

In the subsequent discussion, one participant noted that energy efficiency is improving in Europe but that energy demand continues to grow. Kaupp responded that “energy modesty” may be even more important than energy efficiency. In response to questions on the scale of CDM projects, panelists said that while countries such as India and China attract large amounts of CDM funding, relatively small-scale projects can have a big impact in smaller developing countries. Delegates also discussed links between sustainable development, electricity consumption and quality of life.

PANEL VI: CONNECTIONS TO POVERTY REDUCTION IN URBAN AND RURAL AREAS

Vincent Kitio, UN-HABITAT, spoke on energy efficiency and poverty reduction in urban areas, especially slums, where enhancing energy access can immediately improve living conditions. He stressed that affordable technical solutions such as improved cooking stoves and lighting are well known, but that governments and donors must set up strategies and campaigns to ensure large-scale delivery. Kitio also explained that slum electrification improves revenue for electricity utilities, which otherwise suffer losses due to illegal electricity use by slum dwellers.

Michael Kelly, World LP Gas Association, said the use of liquefied petroleum gas (LPG) in developing countries has health benefits, as it burns cleaner than traditional fuels such as charcoal, and environmental benefits, as it can replace fuels like fuelwood. Kelly said the aim is not for LPG to replace electricity, but to be an alternative energy source for processes such as cooking and heating, where LPG is more efficient.

Amitav Rath, Policy Research International, explored direct and indirect linkages between alleviating poverty and improving energy access and efficiency. Noting that the positive impacts of energy conservation for the poor have been clearly demonstrated, he called for concerted and long-term institutional change, improved macro-micro linkages, better indicators of success, and the incorporation of inputs from a wider knowledge base “beyond engineers and economists” to identify missing dimensions.

Ana Christina Romano Mascarenhas, COELBA (a Brazilian energy distribution company), described energy efficiency and income generation projects in low-income communities in Salvador, such as installing windows for natural ventilation and lighting, improving wiring, and granting electricity discounts in return for recycling. She highlighted a “new-for-old” refrigerator replacement project, which cuts household energy

consumption by a third, leverages Montreal Protocol funding for chlorofluorocarbon (CFC) elimination, and recycles the old appliances as scrap.

The subsequent discussion was facilitated by Peter Davies, UK Department for International Development. Participants commented on the cost and affordability of LPG, particularly compared to other energy sources such as coal, with one participant observing that externalities, such as health and environmental benefits, should be emphasized, as these make using LPG more attractive. Davies commented on the possibility of using LPG for cooking in Johannesburg townships, where there is high reliance on coal. Responding to a question about the efficiency of solar and LPG cookers, Kelly stated that there is increasing innovation aimed at reducing wastage from the use of such cookers.

PANEL VII: CASE STUDIES FROM DEVELOPING TRANSFORMATION COUNTRIES

James Baanabe Isingoma, Ministry of Energy and Mineral Development, Uganda, explained how his country is achieving reduced energy demand through energy efficiency interventions. He listed specific measures taken, including the distribution of free and subsidized compact fluorescent lamps, training of energy managers and consultants, sensitization campaigns and energy auditing of high-consuming enterprises. He concluded that while barriers remain, progress is being achieved in terms of improved practices and public awareness.

Marco Matteini, UNIDO, described the Global Sustainable Energy Islands Initiative, a partnership between UNIDO, donors and governments of small island developing States. He said the Initiative helps these States to achieve energy sustainability by providing technical cooperation and funding to develop and implement national sustainable development plans, and programmes for energy efficiency awareness raising and capacity building. He added that UN core funding had been vital in leveraging additional donor funding.

Atul Raturi, University of the South Pacific, Fiji, described some of the energy efficiency initiatives being taken by Pacific island countries, which include: the introduction of standards and labeling of appliances, with energy savings worth an estimated US\$163 million; the promotion of compact fluorescent lamps in Fiji through a “buy one, get one free” scheme; the replacement of kerosene lights with white light-emitting diodes; and energy audits.

Alex Pavlov, GE Jenbacher, reported on a coal mine gas-to-energy project implemented by his company in the Ukraine. He said the innovative project, commissioned by a coal mine in the east of the country, generated 270 million kilowatt hours of electricity in two years, while safely disposing of waste methane gas emitted by the mine. Pavlov added that this achievement led to the plant’s recognition as the Ukraine’s first Joint Implementation project under the Kyoto Protocol.

Oliver Percl, Allplan (an Austrian energy and environmental management company), outlined projects to promote solar water heating in Albania and Macedonia. Listing favorable factors such as high solar radiation and strong government support in those countries, he explained the projects’ multi-stakeholder approach, including training, site visits and workshops for local producers, improving consumer uptake of solar water heating through information campaigns, quality standards and labeling, and strengthening administration and inter-agency policy coherence on solar power within governments.



Bikash Sharma, International Centre for Integrated Mountain Development, discussed challenges for sustainable energy use in the Himalayan region, such as affordability and overcoming cultural barriers. He suggested addressing these problems through interventions such as innovative financing mechanisms with “comfortable” lending terms. He also highlighted an Austrian Development Agency-supported project, “Development of Sustainable Energy for Rangelands,” which aims to address the poor energy access and lack of investment in the region’s rangelands.

In the ensuing discussion, Irene Freudenschuss-Reichl asked whether Pacific and Caribbean countries have made efforts to collaborate on regional programmes to share experiences. In response, Matteini mentioned: efforts to implement common building codes; capacity-building programmes facilitated by the energy unit of the Organization of Eastern Caribbean States; and a recent joint initiative by universities in the region. Raturi added that a number of joint programmes also exist in the Pacific Islands region to develop collaborative energy policies and help governments to develop appropriate energy legislation.

PANEL VIII: INVESTING IN ENERGY EFFICIENCY

Josh Carmody, Asian Development Bank (ADB), noted the importance of private sector investment for climate change mitigation and energy efficiency, and explained that financiers perceive energy efficiency investments as too risky, with small deals and low returns. He described the Energy Efficiency Initiative of the ADB, which aims to overcome some of these challenges using innovative financing and risk-sharing mechanisms, and sets a target of investing US\$1 billion per year into energy efficiency and clean energy initiatives.

Carmody said that under this initiative, the ADB would share energy efficiency investment risks with local financial institutions, in some cases guaranteeing loans.

Thomas Scheutzlich, Caribbean Renewable Energy Development Programme, said the joint GTZ/UNDP project undertakes interventions at four levels: supporting governments to formulate renewable energy policy and legislation; identifying potential renewable energy projects and investors and facilitating project development; building the capacity of key stakeholders; and disseminating information. He highlighted the Caribbean Wind Power Initiative, which bundles projects on different islands to create sufficient critical mass to attract energy investors. Scheutzlich said governments should exert stronger policy and regulatory control over the energy sector, and implement sustainable energy policies in order to create the right incentives for additional technical and financial innovation by renewable energy players in the region.

Dominique Richard, French Development Agency, described his organization’s efforts to promote energy efficiency in developing countries. He said that sustainable energy generation and demand-side management initiatives are supported through use of financial tools such as grants, risk guarantees and loans, and budgetary support for policy making, research and

development, and pilot projects. Richard highlighted as examples: a project to achieve interconnection of geothermal energy in Dominica, Guadeloupe and Martinique; a credit line in Turkey for refinancing renewable energy projects and distributing natural gas to isolated areas; and an energy-efficiency building programme in China that resulted in energy savings of up to 50 percent following development of local energy efficiency standards and dissemination of advanced technology, materials and know-how.

Oliver Walter, VA TECH Finance, presented an overview of a hydropower plant project in Bulgaria, with a total project cost of €200 million, expected to generate a total of one million emission reduction units by 2012. He identified problems with sourcing finance from traditional financial institutions, and stressed that using the Kyoto Protocol’s Joint Implementation mechanism was key to eventually obtaining financing. He outlined elements of the project’s unique collateral structure, including asset pledges and letters of support, under which escrow accounts based on the expected emission reduction units were accepted as collateral by commercial banks for the first time.

Daniel Puig, UNEP, described the work of the UNEP/BASE Sustainable Energy Finance Initiative (SEFI), a platform for clean energy practitioners that gathers policy-relevant data and analysis. Citing the recent SEFI report on global clean energy investment flows, he noted that traditional data sources do not sufficiently capture the rising share of new renewable energy sources in the global fuel mix. Puig proposed the use of new indicators that reflect the true market value of renewables, including: research and development spending by venture capitalists and private equity funds; carbon funds; CDM pipeline projects and public investment; and investments in energy efficiency by domestic and industrial consumers.

CONCLUDING PLENARY

On Friday morning, 23 November, delegates met for the final plenary session. Chair Freudenschuss-Reichl emphasized that through technical cooperation, economic growth and energy consumption can be “decoupled,” allowing developing countries to choose less energy-intensive paths to industrialization than those followed by developed countries in the past. She also reiterated that regional- and sector-specific approaches to achieving energy efficiency may be needed, as well as different strategies for rural and urban areas, and for consumers and producers.

Elfriede Anna More, Austrian Ministry of Agriculture, Forestry, Environment and Water Management, highlighted the need to overcome barriers to using CDM assistance for energy efficiency projects. Noting that energy efficiency policies and plans already exist in many regions, Marianne Osterkorn, REEEP, said her organization can help support on-the-ground implementation, but added that governments must show political will and take the lead in committing to implementation. James Baanabe Isingoma, Ministry of Energy and Mineral Development, Uganda, emphasized the Forum of Energy Ministers of Africa’s call for more regional-level action, cooperation and communication on energy-related initiatives, experiences and programmes. Robert Williams, UNIDO, reported that the UN’s interagency mechanism on energy issues, UN-Energy, plans to address issues including climate change, energy efficiency and energy access in order to create a more cohesive approach to energy within the UN System. He added that energy access and efficiency are closely linked,



Josh Carmody, Asian Development Bank (ADB)



and that technology transfer is required to ensure that countries working to improve their energy access adopt efficient, affordable and low-emission options.

Chair Freudenschuss-Reichl then asked participants to reflect on the main points raised at the meeting and to consider the way forward. Some participants called for the involvement of industry in discussions about energy efficiency, with others highlighting that the housing and transportation sectors should also be included. Osterkorn commented on the need for a systematic portfolio on energy efficiency, work on which is currently being carried out by REEEP, and also emphasized the need for energy ministries to dedicate more staff to energy efficiency issues.

Some delegates asserted that although technologies such as solar panels are becoming more efficient, they are not becoming more affordable. Commenting on energy policy making, one participant noted that government should play a role in energy planning, rather than relying on the market to resolve all energy supply problems. Participants also discussed: the need to mainstream energy efficiency into development assistance; the benefits of regional and worldwide cooperation on energy efficiency strategies and plans; and the need for mountain areas to be given special consideration with regard to energy efficiency, in order to address the problems of affordability, accessibility and availability of energy.

Chair Freudenschuss-Reichl informed participants that links to the full report of GFSE-7 as well as the various PowerPoint presentations would be made available on the GFSE website (<http://www.gfse.at>) and that an executive summary containing salient points from the meeting would be developed by the GFSE Convenor. She then thanked all participants, panelists and organizers, and closed the meeting at 12:16 pm.

UPCOMING MEETINGS

THIRTEENTH CONFERENCE OF THE PARTIES TO THE UNFCCC AND THIRD MEETING OF THE PARTIES TO THE KYOTO PROTOCOL:

The UN Framework Convention on Climate Change (UNFCCC) COP 13 and Kyoto Protocol COP/MOP 3 will take place from 3-14 December 2007 at the Bali International Conference Center and adjacent Nusa Dua facilities, Indonesia. These meetings will coincide with the 27th sessions of the UNFCCC's subsidiary bodies and a meeting of the *Ad Hoc* Working Group on Further Commitments from Annex I Parties under the Kyoto Protocol. For more information, contact: UNFCCC Secretariat; tel: +49-228-815-1000; fax: +49-228-815-1999; e-mail: secretariat@unfccc.int; internet: <http://www.unfccc.int>

EXPERT SYMPOSIUM ON CLIMATE CHANGE:

MODELLING, IMPACTS & ADAPTATIONS: This symposium is organized by the Tropical Marine Science Institute (TMSI) and Department of Civil Engineering of the National University of Singapore, and the British High Commission, Singapore, and will take place from 17-19 December 2007, in Singapore. In addition to the main Symposium, the Department of Civil Engineering of the National University of Singapore will organize a Workshop on "Climate Change and Slope Stability" to be held on 18 December 2007. For more information, contact: Integrated Meetings Specialist; tel: +65-6356-4727; fax: +65-6356-7471; e-mail: climatechange@inmeet.com.sg; internet: <http://climatechange2007.org/>

INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC) SCOPING MEETING FOR THE SPECIAL REPORT ON RENEWABLE ENERGY:

This meeting will take place in Lübeck, Germany, from 21-25 January 2008. For more information, contact: IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-730-8025/13; e-mail: IPCC-Sec@wmo.int; internet: <http://www.ipcc.ch/>

FOURTH AUSTRIAN JI/CDM WORKSHOP: This workshop will take place in Vienna, Austria, from 24-25 January 2008. Addressing Joint Implementation (JI) and the Clean Development Mechanism (CDM) under the Kyoto Protocol, the workshop will bring together project developers, investors, validators and governmental authorities with the aim of updating participants about recent developments and future perspectives after the UN climate change conference in Bali. The workshop is aimed at companies and institutions interested in exchanging information and lessons learned. For more information, contact: Peter Koegler, Kommunalkredit; tel: +43-1-31-631-246; fax: +43-1-31-631-104; e-mail: p.koegler@kommunalkredit.at; internet: <http://www.ji-cdm-austria.at/en/portal/index.php>

DELHI SUSTAINABLE DEVELOPMENT SUMMIT 2008: SUSTAINABLE DEVELOPMENT AND CLIMATE CHANGE:

This Summit will take place in New Delhi, India, from 7-9 February 2008, and will offer a platform for leading figures from North and South to address the vital issues of climate change and sustainable development, and to set the stage for an intensified search for global solutions during the year. For more information, contact: Summit Secretariat, TERI; tel: +91-11-2468-2100; fax: +91-11-2468-2144; e-mail: dsds@teri.res.in; internet: <http://www.teriin.org/dsds/2008/>

INTERNATIONAL CONFERENCE ON RENEWABLE ENERGY IN AFRICA:

This event, tentatively scheduled to take place in February 2008, is a joint initiative of the African Union, Government of Senegal, the German Ministry of Economic Cooperation and Development, and UNIDO. For more information, contact: UNIDO Energy and Cleaner Production Branch; tel: +43-1-260-265-177.

WASHINGTON INTERNATIONAL RENEWABLE ENERGY CONFERENCE 2008:

This conference will be held in Washington, D.C., US, from 4-6 March 2008. The event will aim to advance goals on energy security, climate change, air quality, and sustainable development, including agriculture and rural development. It will also seek to demonstrate global leadership in renewable energy research, policy development, technology innovation, commercialization and development, and to foster industry and government collaboration. For more information, contact: American Council on Renewable Energy; tel: +1-202-393-0001; fax: +1-202-393-0606; internet: <http://www.wirec2008.org/>

28TH SESSION OF THE IPCC: This meeting is tentatively scheduled to be held in Budapest, Hungary, from 9-10 April 2008. For more information, contact: IPCC Secretariat; tel: +41-22-730-8208; fax: +41-22-730-8025/13; e-mail: IPCC-Sec@wmo.int; internet: <http://www.ipcc.ch/>

SYMPOSIUM ON RENEWABLE ENERGY AND WATER PRODUCTIVITY:

This meeting will take place from 7-9 December 2008 in Manama, Bahrain, and is co-organized by Crans Montana Forum Middle-East in association with the Bahrain Economic Development Board and UNIDO. For more information, contact: UNIDO Energy and Cleaner Production Branch; tel: +43-1-260-265-177.