



GFSE REGIONAL WORKSHOP FOR ICIMOD COUNTRIES: ACCESS TO ENERGY FOR SUSTAINABLE DEVELOPMENT AND POLICIES FOR RURAL AREAS: 24-26 NOVEMBER 2004

The regional workshop of the Global Forum on Sustainable Energy (GFSE) for countries that are members of the International Centre for Integrated Mountain Development (ICIMOD) was held from 24-26 November 2004, in Paro, Kingdom of 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 Millennium Development Goals (MDGs). The workshop also aimed to facilitate regional solutions and help Bhutan's efforts to achieve "electricity for all by 2020." In particular, the workshop set out to stimulate discussion and networking possibilities on sustainable energy matters related to: sector improvement and policy development/changes; capacity building and sharing of best practices within the region; empowerment for sustainable energy solutions; implementation of existing national and regional recommendations and plans; and improvement of stakeholder communication, including donors.

The workshop also sought to promote and explain the concept of the EU-Energy Initiative (EUEI) for poverty eradication and sustainable development and to explore the need for specific projects and areas of financial co-operation. Aiming to take a regional rather than bilateral approach to problems and solutions, the workshop focused on rural access to energy, solutions for remote mountain areas, affordability, rural development, electrification, climate protection, renewable energy, poverty reduction, lifestyle and consumer protection, consumer-driven approaches and gender participation.

The workshop was convened by Georg Lennkh, Director General of the Austrian Development Cooperation. It was co-hosted by the Department of Energy, Ministry of Trade and Industry of Bhutan, GFSE, the Austrian Coordination Bureau (ACB), Mountain Partnership, and the EUEI.

Approximately 45 participants representing government agencies, UN bodies, business and industry, non-governmental organizations (NGOs) and academia attended the workshop.

A BRIEF HISTORY OF ENERGY FOR SUSTAINABLE DEVELOPMENT AND THE GFSE

The GFSE was launched by Austria's Foreign Minister in 1999. It stems from outreach efforts of the World Energy Assessment, which was organized by the UN Development Programme, the UN Department of Economic and Social Affairs and the World Energy Council. The GFSE provides a platform for multi-stakeholder dialogues 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. It addressed the issue of 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 matters. 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.

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GFSE-2: The second GFSE meeting convened from 28-30 November 2001, 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 transferring energy technologies; and enabling policy environments and creating conditions for private sector involvement in the transfer of energy technologies for rural 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 desired outcomes of, and proposals for, the upcoming World Summit on Sustainable Development (WSSD).

WSSD: Energy was not specifically dealt with at the UN Conference on Environment and Development (UNCED) held in Rio de Janeiro, Brazil, in 1992. However, as Agenda 21 and the Rio Conventions were being implemented in the 1990s, energy emerged as a significant consideration. 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 through 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 MDGs (which were set out in the UN Millennium Declaration in September 2000 and include the target of halving the proportion of people subsisting on one dollar a day or less by the year 2015) would not be met without increased access to modern energy services.

Energy was one of the key areas proposed by UN Secretary-General Kofi Annan to receive a special focus at the WSSD held in Johannesburg, South Africa, in September 2002. Through 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 cleaner use of fossil fuels. Energy issues were also addressed in the 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, 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 EUEI. Plenary sessions held during GFSE-3 covered: innovative financial instruments for private sector involvement in rural energy development; implementation of the energy outcomes of the WSSD; how to make the WSSD outcomes work in Africa

and Asia; and the role of operational international organizations and funding agencies for rural energy development.

CSD-11: The eleventh session of the CSD was held at UN headquarters in New York from 28 April to 10 May 2003. CSD-11 agreed that its future sessions would consider a limited number of topics, or “thematic clusters.” These clusters would be examined over a two-year period or “implementation cycle.” Energy issues will be part of the thematic cluster to be taken up during the 2006-2007 cycle.

GFSE Regional Seminar: GFSE held a regional seminar focusing on district heating in South Eastern Europe from 27-28 November 2003, in Vienna, Austria. This seminar underlined the importance of district heating for the social and economic well-being 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 overall sustainable development. The intention of the meeting was to stimulate improvements in the sector and changes in policy, including: policy consultation; policy preparation; capacity building; empowerment for sustainable energy solutions; implementation of existing regional or national obligations; improvement of communication between stakeholders; transmission policy; and execution levels. It was agreed that links between policy and executing levels should be strengthened by focusing on the multi-causality of sustainable energy solutions, and by raising awareness for innovative solutions.

GFSE-4: This meeting, entitled “Energy for Sustainable Development: Reconsidering the Role of Incentive Measures,” was held from 18-20 February 2004, in Vienna. 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 aimed to contribute to ongoing work on the use of incentive measures for sustainable energy.

REPORT OF THE WORKSHOP

This report summarizes the proceedings of the three-day workshop, and is organized chronologically from Wednesday, 24 November to Friday, 26 November. On the final day of the workshop, delegates participated in a fieldtrip to Tala Dam and Chukha Hydropower Plant.

WORKSHOP OPENING

Sonam Tshering, Director General of the Department of Energy, Bhutan, opened the workshop at 8.55 am on Wednesday. He welcomed workshop participants, noting the importance of rural energy for sustainable development of the region, and to achieve the national goal of “electricity for all by 2020” and said hydropower is the key to sustainable development in Bhutan. He said that harnessing this resource will allow access to energy in the rural areas and for Bhutan will offer the most viable way of reaching energy in the rural areas is through grid extension. He noted that, with the abundance of hydropower, other forms

of renewable energy are comparatively less viable. However, he said providing access to electricity in the rural areas is a major challenge given the geographical terrain and the significant cost associated with it and hence the issue of subsidies for rural areas is important.

PLENARY I: SETTING THE SCENE

Immediately following the opening, participants heard two keynote addresses aimed at setting the scene for discussions and networking at the workshop.

Georg Lennkh explained that the EUEI, conceived at the WSSD, aims to: assist developing countries in defining their energy needs and designing their energy policies as part of their overall poverty reduction strategies; promote private sector interests and energy partnerships between North and South; assist in the formation of regional initiatives; and set up appropriate financing channels for all aspects of energy provision. He emphasized that this workshop should not be an isolated event, and expressed hope that a regional network would be established to promote the work.

Participants then heard a welcoming address by Prime Minister Yeshey Zimba, speaking in his capacity of Minister for Trade and Industry, Bhutan. Minister Zimba expressed appreciation to the Government of Austria for its technical and financial support toward Bhutan's socioeconomic development. He recalled the need for improved rural energy access and said that the Himalaya-Hindukush countries have experienced significant obstacles to accessing clean energy technology. He noted that Bhutan faces threats from climate change, including impacts such as floods, glacier lake outbursts, and land slides. He emphasized that hydropower expansion is key to Bhutan's sustainable development and noted that investing in clean energy is hampered by the capital costs of providing energy alternatives. He mentioned the Clean Development Mechanism (CDM) of the UN Framework Convention on Climate Change's Kyoto Protocol as one option. Noting the high capital costs and management problems associated with CDM projects, he suggested that these risks could be reduced with clear and transparent government policies on subsidies and regulatory reforms.

Marie-Christine Weinberger, Coordinator of the ACB, concluded the plenary with a vote of thanks to workshop participants.

PLENARY II: RURAL ENERGY PROJECTS AND PROGRAMMES

This plenary session, which extended through Wednesday morning and afternoon, consisted of seven presentations on rural energy projects and programmes in the Himalaya-Hindukush Region. Georg Lennkh chaired the morning presentations and Sonam Tshering chaired the afternoon session.

PRESENTATIONS: Tshering gave an overview of Bhutan's rural electrification programme. Highlighting that hydropower development in Bhutan is key to achieving economic self-reliance, he noted that the export of electricity provides 45% of national revenue, and that these earnings are reinvested in

the social sector. He explained that hydropower development in Bhutan is environmentally benign and domestic tariffs are kept low to stimulate economic growth. He emphasized that rural electrification is a high priority of his Government, which aims to provide electricity to all by 2020 through grid extension, off-grid micro-hydropower, solar photovoltaic power, and other technical and economic renewable energy solutions, such as biomass, biogas, wind power and fuel cells. Noting that Bhutan has the world's highest *per capita* consumption of firewood, Tshering explained that improved rural electrification would reduce environmental degradation, greenhouse gas emissions, poverty and dependence on fossil fuel imports. He also highlighted community participation in rural electrification projects in Bhutan. Tshering outlined the Government's current five-year plan targets, including two micro-hydro off-grid installations, rural electrification of 15,000 households, and transmission grid extension. He drew attention to barriers to rural electrification in Bhutan, including: the high costs of electricity supply, transmission and distribution due to scattered rural households and difficult terrain; the financial means of end users; and the low load factor.

Atal Manalai, Renewable Energy and Environment (GERES), Afghanistan, presented on passive solar architecture in Afghanistan. He described the impacts of war on Afghanistan's health services, poverty, and the displacement of its population. Manalai stated that over two million refugees had returned to Afghanistan since 2001, and that despite increased international funding for long-term development, the Government lacks financial and natural resources to address recurring costs for heating in public and domestic buildings. He explained that GERES, a French NGO working with rural energy since 1976, has begun to promote the concept of passive solar architecture in clinics and schools. Manalai explained that the concept involves insulation of walls, floors, roofs and windows to retain heat and reduce energy consumption, as well as maintenance and running costs. He illustrated several on-the-ground projects that had adopted the concept in clinics and schools, with successful cost-effective outcomes. He recommended the passive solar concept, saying that it had increased building temperatures, reduced fuel wood consumption and provided social and economic community benefits.

Wang Sicheng, Energy Research Institute, China, discussed China's solar programme for mountain regions, highlighting solar photovoltaic applications in mountain areas, including direct current (DC) and alternating current (AC) power supply, village power plants and wind-photovoltaic hybrid power systems. He drew attention to various solar-powered installations in the communication and industrial sectors, as well as rural electrification projects, including for schools and village. He also noted possible future applications, including hydrogen production and moveable power supply. Sicheng outlined the 1992-2000 solar photovoltaic programme for unelectrified counties in Tibet, sponsored by the China Electric Power Company, and the world's largest rural electrification

photovoltaic project, Song Dian Dao Xiang, sponsored by the National Development and Reform Commission. He also described the 2001 Brightness Program in Arli District, Tibet, which involved 38 solar photovoltaic village systems, 20 solar pumping systems, 22,000 solar home systems, and 20 solar-powered satellite television stations.

S.K. Chopra, Ministry of Non-conventional Energy Sources, India, spoke on the Integrated Rural Energy Programme in India (IREP). He explained that IREP aims to develop capabilities to prepare for implementation of micro-level rural energy plans and projects, and to provide a delivery system for effective technology transfer and utilization of energy for rural development. He highlighted that rural energy is an equity issue since rural communities are “trapped” in subsistence dependency on non-commercial fuels and biomass. He noted that lessons from IREP included the importance of: local institutions; national capacity training centers; and micro-level planning and grass-roots assessments in identifying local energy priorities and needs in programme design. He then outlined barriers encountered by IREP, including: lack of awareness of technology development; lack of technology demonstration; financial constraints; uncertainties about the cost effectiveness of energy efficient options; market imperfections; and absence of infrastructure and stakeholder communication. He recommended that energy policies should encourage rural solar power, improved cooking stoves, and active involvement of local institutions, as well as coordination with other rural development programmes. He proposed that IREP could be a model for integrated rural energy programmes in the region, and emphasized compatibility with Bhutan’s concept of “Gross National Happiness.”

Speaking on biogas use in Nepal, Sundar Bajgain, Biogas Sector Partnership Nepal (BSP-Nepal), noted that 90% of biogas is used for cooking and the remaining 10% for lighting. He highlighted the benefits of biogas use, including: fuel wood savings of three tonnes per plant per year; better health resulting from reduced indoor smoke; workload reduction of three hours per plant per year; high quality fertilizer; better sanitation; carbon dioxide reduction of 4.6 metric tons per plant per year; better light from biogas lamps; and economic benefits. Bajgain noted the installation of 123,000 biogas plants in Nepal since 1992, of which 72% are connected to toilets, and he said BSP-Nepal is aiming for 200,000 additional plants between 2003-2009. He pointed to the reasons for successful biogas development in Nepal, including: appropriate, simple and reliable design; private sector involvement; strong quality control and standardized management systems; a transparent and effective credit mechanism; “word of mouth” promotion from satisfied biogas users; and the use of local materials and local communities in plant construction. Highlighting that a biogas programme is being developed as Nepal’s first CDM project, he said the project would reduce carbon dioxide emissions by roughly 500,000 metric tons per year and benefit the rural poor. He described some additional possibilities for biogas use in Nepal, including community-managed plants, biogas for rainwater harvesting,

smaller-sized plants and plants that use fuels other than cattle dung.

Parvez Akhter, Pakistan Council of Renewable Energy Technologies, presented on the role of renewable energy technologies in rural development and Pakistan’s strategy. Akhter provided an historical account of renewable energy development in Pakistan, lessons learned and suggestions for future avenues. He explained that renewable energy appeared in Pakistan in the 1960s, when the first solar desalinization plant was established. The 1970s saw the development of small-scale rural electrification by photovoltaic stations and the creation of the Solar Energy Research Centre. He said that renewable energy advanced further in 2001 with the establishment of the Pakistan Council for Renewable Energy Technology. Akhter said sufficient political will existed to support renewable energy, evident in the recognition of renewable energy in Pakistan’s energy policy and reduction in relevant State duties and taxes. He also noted Pakistan’s 2004 National Development Vision, which emphasizes the indigenization of technologies and includes targets for rural electrification. He stressed the benefits of micro-hydro plants in rural development, noting their size, community management and cost-effective potential.

Karuna Bajracharya, Alternative Energy Promotion Centre, Nepal, noted that Nepal’s poverty reduction strategy plan aims to expand renewable energy technologies to alleviate poverty and increase the purchasing capabilities of rural communities. She said the Government’s strategy includes the improvement of subsidy policies and the establishment of a rural energy fund, with emphasis on individual and community ownership and management. Bajracharya said the Government’s goal is to increase electrification from 39% to 55%, or one million additional rural households, by extending the national grid and through off-grid electrification. She gave an overview of micro-hydro and solar power projects in Nepal, and described a programme to support the dissemination of improved cooking stoves. She concluded that a lack of awareness of the impact of traditional cooking stoves on health, workload and the environment, and the low incomes of rural families are major factors contributing to the slow dissemination rate of improved cooking stoves.

DISCUSSION: Lennkh moderated the discussion session. Delegates addressed, *inter alia*, national policies relating to renewable energy subsidies. One participant suggested that Bhutan should further increase its electricity tariffs for foreign customers, and questioned whether providing electricity access to rural areas can be truly sustainable, considering the long payback period. Delegates also considered the definition of sustainable development, noting that sustainability implies that resources are not depleted for future generations, and that environmental, social and economic sustainability are all important.

Pointing to the abundance of hydropower in Bhutan and the barriers to solar-power uptake, one delegate sought advice on how Bhutan should proceed with rural electrification. Participants from China and India shared their experiences,

noting that government subsidies are often necessary. Other topics that were raised included: scaling-up and replicating renewable energy projects; the integration of solar photovoltaics and solar thermal installations into a building's architectural design; the role of small and medium-sized enterprises; access to carbon financing; the specific energy needs of rural homes, especially for cooking; and the human resources necessary to meet rural electrification targets.

In summary, Lennkh raised three emerging questions: What technologies are available, and what is their suitability in the region? What is the comparative price of various technologies and energy sources? And how should policy be formulated to obtain optimum energy targets and harmonize policy objectives? Sonam Tshering concluded that energy is a prerequisite to sustainable development, while the challenge is how to achieve this in practice.

PLENARY III: REGIONAL PANEL DISCUSSION

On Thursday morning, a panel of regional experts discussed the draft of a summary report, put forward by the organizers, on issues raised the previous day. Sonam Tshering chaired the session.

Tshering introduced the draft summary report which identified four cluster issues on: technology transfer; investment opportunities; institutional capacity; and future action for energy for sustainable development. He proposed the establishment of regional subgroups to address technology development and follow-up action in a future workshop.

S.K. Chopra said that institutions and delivery systems are essential for providing energy access to individuals. He stressed the importance of finance, and the role of donors, beneficiaries and wider stakeholders. He proposed that the GFSE should set a timetable for a follow-up meeting.

Jagan Nath Shrestha, Centre for Energy Studies, Tribhuvan University, Nepal, said the Centre for Energy Studies has learned the importance of communication from delivering solar home systems to rural households. He stressed the importance of education and the inclusion of the education sector in promoting renewable energy.

Khin Maung Nyunt, Forest Department, West Gyogon, Myanmar, highlighted the threats of fuelwood consumption to forests. He called for robust energy policies, investment in stakeholder coalitions, training and education, and extension services to local populations.

Parvez Akhter emphasized the need for regional knowledge transfer on good practice. He stressed that social inertia was a barrier to technology change and said projects could be sustainable if communities participated in all stages of the process. He proposed that bilateral capacity-building efforts could support regional cooperation, working through existing organizations such as ICIMOD or the South Asian Research Council.

Atal Manalai said investors would be willing to invest in passive solar solutions if they were shown some exemplary buildings demonstrating the efficiency of such techniques.

Wang Sicheng stressed the unsustainability of rural electrification projects that fail to take into account the need for follow-up servicing. He noted that although 150,000 solar home systems have been sold in China, village power systems require continual support from the government.

B.D. Ramatullah, Ministry of Power, Bangladesh, underscored that providing energy access to everyone may not be sustainable or financially viable, therefore government programmes are necessary. He emphasized the need for integrated rural energy development and regional cooperation.

In summary, Tshering noted that technology transfer, institutional development, capacity building, access to financing, and information dissemination through regional bodies are important aspects of rural energy development. He emphasized that linking rural energy with economic activities increases sustainability. Tshering supported the call for increased regional cooperation, including for technology transfer and information exchange, and requested donor assistance in this regard.

DISCUSSION: In the ensuing discussion, one participant identified the need for capacity building for village leaders, who often serve as the bridge between planners and end users. Some participants recommended that the end users' needs be taken into greater consideration during rural energy planning, and noted that processes at the village level take time. Irene Freudenschuss-Reichl, Austrian Ministry for Foreign Affairs, suggested that regional cooperation could be strengthened using existing regional centers of excellence, such as the Global Network on Energy for Sustainable Development.

Stressing the importance of follow-up, Tshering said mechanisms were needed to exchange ideas and technology, build capacity, and deliver recommendations to donors. He also suggested that a regional renewable energy inventory be compiled. Brian O'Neill, European Commission, was optimistic about the scope for regional cooperation, but emphasized that any proposal must include a long-term strategy. Freudenschuss-Reichl asked how ICIMOD sees its role in a follow-up workshop. The ICIMOD representative assured that it had the capacity to facilitate future knowledge exchange. Lennkh said that donors are eager to support future workshops and encouraged countries to map their energy situation.

PLENARY IV: REGIONAL FINANCIAL INITIATIVES

Following the regional panel discussion, participants heard presentations on financial initiatives in the region. This session extended through the morning and afternoon. The morning session was chaired by Irene Freudenschuss-Reichl and the afternoon session by Lennkh.

PRESENTATIONS: Jürgen Wahl, Verbundplan, Austria, and Gerard Dicks, VATEch Hydro, Austria, spoke on the CDM in Bhutan. Wahl said that CDM projects, which are emissions reduction projects between developed and developing countries that result in the generation of emissions certificates, are an attractive financial option for Bhutan. He said that the CDM could help Bhutan to: provide additional revenues and encourage private capital in the market; reach win-win social

and environmental standards, such as local employment; provide business opportunities; and strengthen relations with donors. Noting risk concerns, he suggested these could be hedged by timely project planning and flexible design. He outlined success factors for CDM projects in Bhutan, including: guidance from formal institutions, including Bhutan's 1998 National Environmental Strategy and its National Energy Policy, which promotes renewable energy; and sound knowledge of CDM procedures, rules and regulations.

Dicks demonstrated how to calculate carbon dioxide savings from CDM projects and the resulting earnings from certified emissions reduction credits. Drawing attention to a hydropower project in Bhutan that was implemented by an Austrian consortium and local partners, he highlighted that 10-15% of the project's cost could have been offset if it had been a CDM project. Noting a trend toward financially-driven support of small, environmentally-friendly hydropower plants, Dicks said a mid-sized hydropower plant could avoid 1.5-3 million metric tons of carbon dioxide during the Kyoto Protocol's first commitment period (2008-2012). He pointed to innovative uses of hydropower, including ship locks, irrigation and drinking water reservoirs.

Bikash Sharma, ICIMOD, spoke on the joint UN Environment Programme and ICIMOD project on incorporating needs and roles of women in water and energy management in rural areas of the Himalayas, which highlights lessons from Bhutan, India and Nepal. He said focusing on women's needs and roles in water and energy management can make significant differences in meeting development challenges, including the MDGs. Sharma explained that the project's objectives are to build capabilities of women to organize themselves in order to identify their needs, and to adopt water and energy-related technologies that will address inequities. He said that pilot implementation focuses on capacity building, revolving funds and adoption of water and energy-related technology. Noting the project's benefits to women, he pointed to: enhanced capacity in water and energy management; improved access to credit through revolving fund/group saving; realization of multiple benefits from water and energy technologies; new roles for women as energy entrepreneurs; and demonstration effects in neighboring villages and districts, resulting in high demand for similar programmes. He stated that this is an effective model for accelerating the technology transfer process and provides a permanent solution to water scarcity in many parts of the region.

Binu Parthan, Renewable Energy and Energy Efficiency Partnership (REEEP), spoke on REEEP's innovative renewable energy financing for mountain regions. Noting that REEEP plans to become more active in the Himalayan region and is looking for partners, he explained that REEEP focuses on financing, policy and regulation, and currently has 40 projects, mostly in Brazil, China, India and South Africa. He identified barriers to financing renewable energy in mountain regions, drawing attention to risks, institutional mechanisms and transaction costs. Parthan stressed the importance of using local institutions for supply service and financing, and suggested portfolio funding as

a way to create a critical mass for financing. Highlighting that REEEP is looking to finance 15 new projects worth €70,000, he invited countries to submit proposals dealing with financing, policy and regulatory aspects by 22 January 2005.

Brian O'Neill spoke on the EUEI for poverty eradication and sustainable development. O'Neill explained that EUEI was launched at the WSSD in 2002. It aims to: contribute to the MDGs through the provision of adequate, affordable sustainable energy services to the poor; attract political attention and new resources to energy development and poverty eradication; and is implemented in dialogue with participating developing countries. O'Neill outlined key principles for the EUEI, including: ownership by developing countries; ability to attract additional funds from banks and the private sector; and close collaboration with EU Member States and financing institutions. He suggested that future actions under the EUEI could include: following-up on regional programmes, such as the Association of South East Asian Nations (ASEAN); including energy in country strategies; further developing energy through bilateral cooperation at sectoral and cross-sectoral levels; and continuing EUEI facilitation at the country level. He proposed that partner countries could give priority to energy in national policies, development plans and strategies on, for example, poverty reduction.

DISCUSSION: In the ensuing discussion, participants addressed Bhutan's net negative *per capita* carbon dioxide emissions, noting that these are a result of its low fossil fuel consumption and high carbon sequestration from forests. A representative of E+Co, an NGO managing investments in small and medium-sized enterprises in 22 countries, explained that his organization aims to blend investments from private capital with grants and foundations to provide concrete capital for small and medium-sized renewable energy projects. Participants discussed the project design cycle for a CDM project, the complexity of accurately estimating emissions reductions, and the risk of non-acceptance by the CDM Executive Board. One delegate said that to mitigate this risk, project design documents must be designed carefully, and draw on experience from other projects. Lennkh noted that various approaches to financing are now being explored, and suggested that financing could be the subject of a future working group. Tshering stated that it is difficult to provide rural energy on a commercial basis, and therefore grants or soft money are often necessary. Parthan said REEEP provides funding to give confidence to other investors, and emphasized that REEEP's local partners run the projects. One participant stated that governments should invest and provide regulatory frameworks for rural energy development, and donors could provide expertise and model projects. He noted that rural energy projects may not yield immediate returns, but if integrated into rural development programmes, they would yield returns over time.

PLENARY V: CONCLUSIONS

In the final session, held on Thursday afternoon, draft workshop report recommendations were presented to

participants, who engaged in a short discussion on the text. Following the plenary recommendations were circulated to participants for written feedback and then compiled by the Department of Energy. The report sets out the following recommendations:

- Each country in the region needs to have a comprehensive integrated rural energy policy and programme. In this respect, the required institutional and regulatory framework needs to be developed;
- Himalaya-Hindukush countries will benefit from increased cooperation in technology, finance, capacity building, and information exchange as well as implementation arrangements to increase access to energy for sustainable development in rural areas. The countries should work together on how to share these experiences and facilities through study tours, training programmes through existing educational and other institutions, and other technology and skill transfer exchanging mechanisms;
- There are a vast number of technologies, capacity-building facilities and experiences of rural energy programmes available in the region, including unique experiences and success stories. Donors are invited to facilitate such exchanges among member countries;
- Since access to energy is socially justifiable, it is pertinent that there be government support and also continued support from donors on projects, capacity building and technology transfer;
- Himalaya-Hindukush countries may create an environment and establish mechanisms to facilitate private sector participation in providing energy access;
- ICIMOD shall provide a database containing regional information on technology and best practices that can be accessed by the regional countries; and
- The collaborative process may be continued through sustained regional initiatives, including a follow-up workshop. Austria has offered to hold a preparatory meeting for a possible follow-up workshop.

CLOSING REMARKS

Tshering thanked participants and the Government of Austria and expressed high hopes for continuation of the process. On behalf of participants, Karuna Bajracharya thanked the Government of Bhutan, Georg Lennkh, Marie-Christine Weinberger, Sonam Tshering, and the workshop organizers. In conclusion, Lennkh said that there would be a follow-up workshop with ICIMOD and hoped that there would be logistical support from donors. He noted that there could be an inter-session meeting in 2005, in Vienna. He closed the meeting at 4:00 pm on Thursday.

UPCOMING MEETINGS

WORLD CONFERENCE ON ENERGY FOR SUSTAINABLE DEVELOPMENT – TECHNOLOGY ADVANCES AND ENVIRONMENTAL ISSUES: This Conference will take place from 6-9 December 2004, in Cairo, Egypt. For more information, contact: Fuad Abulfotuh, Arab

Academy for Science & Technology and Maritime Transport; e-mail: mceet@link.net; Internet: <http://www.aast.edu/mceet/confindex.htm>

TENTH CONFERENCE OF THE PARTIES TO THE UNFCCC: The tenth Conference of the Parties (COP-10) to the UN Framework Convention on Climate Change (UNFCCC) will convene from 6-17 December 2004, in Buenos Aires, Argentina. 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>

WORLD CONFERENCE ON ENERGY FOR DEVELOPMENT: This meeting will take place from 12-14 December 2004, in Noordwijk, the Netherlands. For more information, contact: Secretariat, tel: +31-70-339-1812; fax: +31-70-339-1306; e-mail: projectteam@energyfordevelopment.org; Internet: <http://www.energyfordevelopment.org>

RIO 05 CONGRESS – WORLD CLIMATE AND ENERGY EVENT: The Rio 05 Congress will take place from 15-17 February 2005, in Rio de Janeiro, and from 18-20 February 2005, in Fortaleza, Brazil. For more information, contact: Vanessa Espi, Organizing Committee; tel: +55-21-2233-5184; fax: +55-21-2518-2220; e-mail: info@rio5.com; Internet: <http://www.rio5.com>

PRITHVI 2005: ENERGY EFFICIENCY & RENEWABLES: This Global Eco-Meet will be held from 19-28 February 2005 in Thiruvananthapuram, Kerala, India. For more information, contact: Swadeshi Science Movement; tel: +91-484-2393242; fax: +91-484-2393256; e-mail: ssmkerala@eth.net; Internet: <http://www.prithvionline.org/default.asp>

CARBON MARKET INSIGHTS EVENT 2005: This annual event, organized by the emissions consultancy Point Carbon, will take place from 1-3 March 2005, in Amsterdam, the Netherlands. For more information, contact: Point Carbon Organizing Committee; tel: +47-924-29-400; fax: +47-925-70-818; e-mail: conference@pointcarbon.com; Internet: <http://www.pointcarbon.com/category.php?categoryID=286>

CAIRO NINTH INTERNATIONAL CONFERENCE ON ENERGY & ENVIRONMENT (EE9): This Conference will take place from 13-19 March 2005, in Cairo and Sharm El-Sheikh, Egypt. For more information, contact: Ralph Kummler, Wayne State University; tel: +1-313-577-3775; fax: +1-313-577-5300; e-mail: rkummler@chem1.eng.wayne.edu; Internet: <http://ee9.sat-eng.com/index.htm>

5TH GLOBAL FORUM ON SUSTAINABLE ENERGY (GFSE) - ENHANCING INTERNATIONAL COOPERATION ON BIOMASS: GFSE-5 will take place from 11-13 May 2005, in Vienna, convening under the theme “Enhancing international cooperation on biomass.” For more information, contact: Irene Freudenschuss-Reichl, Austrian Ministry for Foreign Affairs; tel: +43-5-01150-4486; fax: +43-5-01159-274 e-mail: irene.freudenschuss-reichl@bmaa.gv.at; Internet: http://www.gfse.at/gfse5_preannouncement.htm