



**FOURTH MEETING OF THE GLOBAL FORUM
ON SUSTAINABLE ENERGY: ENERGY FOR
SUSTAINABLE DEVELOPMENT –
RECONSIDERING THE ROLE OF
INCENTIVE MEASURES
18-20 FEBRUARY 2004**

The Fourth Meeting of the Global Forum on Sustainable Energy (GFSE-4) was held from 18-20 February 2004, in Vienna, Austria. The meeting considered the theme of "Energy for sustainable development: reconsidering the role of incentive measures." In particular, GFSE-4 focused on renewable energy issues, providing input to the International Conference for Renewable Energies scheduled to take place in Bonn, Germany, in June 2004. The Forum also brought together various energy-related partnerships announced at the World Summit on Sustainable Development (WSSD) in Johannesburg in 2002, in order to discuss their progress. GFSE-4 was convened by Irene Freudenschuss-Reichl, Special Representative and Assistant Director-General for UN Affairs at the UN Industrial Development Organization (UNIDO). It was co-sponsored by the Austrian government, City of Vienna, Federation of Austrian Industry, UN Development Programme (UNDP) and UNIDO. An estimated 210 participants representing government agencies, UN bodies, business and industry, non-governmental organizations and academia attended the Forum.

Delegates met in Plenary sessions to hear presentations and engage in discussions on a variety of relevant topics, including: energy and the Millennium Development Goals (MDGs); public sector perspectives on incentive measures in developed and developing countries; private sector perspectives on incentive measures; and initiatives that promote energy for sustainable development. Participants also convened in two Working Groups to discuss supply and demand side measures to promote energy for sustainable development. On the final day of GFSE-4, delegates reconvened in Plenary to hear reports from the Working Groups, before concluding with a panel discussion on the next steps required to advance energy for sustainable development.

The meeting also included consultations held in parallel with the official Plenary sessions that related to two partnerships on sustainable energy. The first consultation considered the feasibility of a "Patient Capital Investment Vehicle" in the context of the Johannesburg Renewable Energy Coalition (JREC); the second was a prelimi-

nary meeting of the project consortium "Partners for Africa." In addition, participants attending GFSE-4 were invited on a field trip to Vienna Freudenau, the Danube Hydropower Plant.

GFSE-4 is expected to contribute to ongoing work on the use of incentive measures for sustainable energy, and on renewable energy. In particular, it will feed into the renewable energies conference taking place in June 2004, and various other multi-stakeholder forums.

**A BRIEF HISTORY OF ENERGY FOR SUSTAINABLE
DEVELOPMENT AND THE GFSE**

The Global Forum on Sustainable Energy (GFSE) was launched by Austria's Foreign Minister in 1999. It stems from outreach efforts of the World Energy Assessment, which was organized by UNDP, the UN Department of Economic and Social Affairs (DESA) 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 forums. 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.

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 transfer of energy technologies; and enabling policy environments and creating conditions for private sector involvement in the transfer of energy technologies for rural needs. Participants also 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).

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WSSD: Energy 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 consideration. The five-year follow-up meeting to UNCED in 1997 decided that the ninth session of the Commission on Sustainable Development 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 Millennium Development Goals (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. 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 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 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: The eleventh session of the Commission on Sustainable Development (CSD-11) was held at UN headquarters in New York from 28 April to 10 May 2003. Following-up on recommendations made at the WSSD for the Commission to have an enhanced role in promoting sustainable development, delegates discussed the future work of the Commission, adopting a new work programme for the period 2004-2017. CSD-11 agreed that 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.

REPORT OF GFSE-4

Irene Freudenschuss-Reichl, Special Representative and Assistant Director-General for UN Affairs at the UN Industrial Development Organization (UNIDO), opened the meeting at 9:30 am on Wednesday, 18 February. She welcomed GFSE-4 participants, noting the importance of the GFSE in addressing energy and implementation issues within various multi-stakeholder forums. She thanked the Austrian government, City of Vienna and the Federation of Austrian Industry for hosting the meeting.

Participants then heard a welcoming address by Lorenz Fritz, Secretary General of the Federation of Austrian Industry. He noted an emerging dialogue on sustainable energy between governments, the private sector and civil society since the World Summit on Sustainable Development in 2002. He described how the Austrian business community is engaging in ecological and social responsibility, and is adhering to a guiding vision of economic success combined with responsible action.

PLENARY I: SETTING THE STAGE

The first Plenary session was held immediately after the welcoming speeches on Wednesday morning, 18 February. This session, which was moderated by Irene Freudenschuss-Reichl, consisted of four keynote addresses aimed at setting the scene for discussions at GFSE-4.

Josef Pröll, Austria's Minister of Agriculture, Forestry, Environment and Water Management, noted the growing collaboration with industry and underscored the need for incentives and appropriate policies and legal frameworks to promote renewable energies. He described the legislation governing Austria's electricity market as a means to increase the share of electricity from renewable sources, stressing that renewable energy not only benefits the environment, but also helps the agricultural sector and rural development, generates employment, and contributes towards energy independence and a stronger economy. Pröll expressed hope that GFSE-4 would provide valuable input to the International Conference on Renewable Energies in Bonn in 2004 (also known as "Renewables 2004") and to the Johannesburg Renewable Energy Coalition (JREC). He also emphasized his Ministry's commitment to support the ongoing work of the GFSE.

Speaking on behalf of Benita Ferrero-Waldner, Austria's Foreign Affairs Minister, the Secretary General of Foreign Affairs, Johannes Kyrle, emphasized the need to sustain public interest in energy for sustainable development. He also stressed the importance of broadening the understanding of technical issues, creating incentives for research and identifying innovative solutions, sustaining the necessary political will, and addressing inter-related global challenges, such as security, poverty, and climate change. Kyrle made a variety of recommendations for further action, including: creating supportive policies and regulations to signal long-term political commitment; facilitating the exchange of knowledge; deepening understanding of the economic benefits of energy for sustainable development; and increasing public awareness and civil society involvement. Highlighting Austria's long history in the development of clean energy, he stressed its commitment to supporting the GFSE.

Sonam Tshering, Director of the Department of Energy, Bhutan, stressed the need to find solutions to poverty-related problems that result from inadequate energy supplies. He explained that hydropower in Bhutan contributes to economic development, the well-being of rural populations, educational standards, lower greenhouse gas emissions, and the level of forest cover. Tshering also described Bhutan's rural electrification efforts, stressing just how capital intensive the renewable energy sector is, and detailing various practical difficulties in providing energy services to rural populations at affordable prices. Commending donors' support for Bhutan's efforts, he also drew attention to a project being undertaken under the Kyoto Protocol's Clean Development Mechanism. He concluded by expressing confidence that Bhutan would achieve the Millennium Development Goals (MDGs).

Haruko Hirose, Deputy to the Director General and Managing Director, UNIDO, presented UNIDO's views on sustainable energy. She described the complex linkages between energy and various other global issues and called for multi-level strategies to tackle both the needs of low income groups and growing national energy demands. She

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noted that governments have an important role in setting policy, while the private sector provides funds and manages infrastructure. Hirose stressed that international policies and technology transfer need to be accompanied by effective legal and regulatory frameworks and by deregulation, and recommended that policy changes should include targeted social action to improve living standards and health in rural areas.

PLENARY II: ENERGY AND THE MILLENNIUM DEVELOPMENT GOALS

This Plenary session, which was held on Wednesday afternoon, 18 February, consisted of several presentations and a panel discussion on the Millennium Development Goals (MDGs) and their relevance to the energy sector. The session was moderated by Irene Freudenschuss-Reichl.

PRESENTATIONS: Mahendra Shah, International Institute for Applied Systems Analysis (IIASA), presented on the links between energy and the MDGs. While noting that energy is not mentioned in any of the eight MDGs, he stressed that energy and energy sources are critical to reaching these goals. He also emphasized that the MDGs need to be implemented at national and sub-national levels, and said they must take into account the needs of vulnerable populations. This, he argued, requires integrated thinking on energy and the MDGs, and concrete international targets and actions. Shah also addressed the issue of climate change, noting that it should be considered based on principles of fairness and justice.

Leonardo Barreto, IIASA, argued that renewable energy has an important role to play in achieving the MDGs, citing as an example its contribution to reducing greenhouse gas emissions. He noted the need to create markets for renewables and highlighted that while political targets have been set, achievements to date remain limited. He suggested that implementation of renewable energy requires a number of measures, including the removal of market barriers, cost-based pricing, monitoring and stimulating technology development, focusing on niche markets, and creating partnerships. Examining the case of biomass fuels, Barreto argued that energy consumption could become carbon neutral if energy is produced in a sustainable manner. He also concluded that international trade in bio-energy could be possible.

Leo Schratzenholzer, IIASA, spoke about long-term trends involved in various global energy scenarios. Discussing trends in biomass consumption, he noted that technological progress can make the difference between energy consumption being “sustainable” or “not sustainable,” and that support for energy research and development is likely to bring both economic and environmental benefits. He also emphasized the benefits of synthetic fuel produced from renewable energy sources.

Cao Guiying, IIASA Population Project, highlighted sustainable rural development as a central issue for China. She underscored the differences between urban and rural populations in China in terms of economic and social development, energy use, and energy service availability and access. Noting that the anticipated increase in China’s urban population will have significant impacts on energy use, including greater demand for commercial sources of energy, she underscored the need for sustainable energy.

Janusz Cofala, IIASA Transboundary Air Pollution project, explained that this project demonstrated a high potential for increasing the share of renewable energy in India and China through various policy measures. Cofala explained that renewable energies are appropriate for decentralized systems that more easily reach the poor, and recommended various policies to harness the potential for renewable energies. At the international level, policies included technology transfer, demon-

stration projects, and institutional strengthening. At national level, they included energy pricing, innovative financing, and support to equipment producers and service companies, tailored to fit the needs of the specific country. Meanwhile, at the local level, Cofala suggested that appropriate policies could include support for establishing the necessary infrastructure, including vendors, operators, equipment, servicing, micro-credits, and risk sharing arrangements.

Alan McDonald, International Atomic Energy Agency, discussed the role of energy in implementing the MDGs. McDonald stressed the need to focus on energy services, particularly on “connecting the unconnected.” He recommended that discussions at GFSE-4 should focus on helping to further the links between MDGs and energy services, and described the potential contribution of nuclear energy to the MDGs.

DISCUSSION: In the ensuing discussion, participants addressed the issue of poverty and problems of internalizing external social and economic costs. On the issue of international funding and technology transfer, Shah recommended that developing countries take a proactive approach. He pointed to the development of fuel-efficient stoves in India and the entrepreneurial spirit required to “take the stove and run with the market.”

PLENARY III: INCENTIVE MEASURES IN DEVELOPED COUNTRIES – PUBLIC SECTOR PERSPECTIVES

Heinz Felsner, Austrian Business Council for Sustainable Development, moderated this Plenary session, which consisted of four presentations and a brief discussion on public sector perspectives relating to incentive measures in developed countries. The presentations covered the work of the International Energy Agency, energy policies in central and eastern Europe and in the European Union, and the role of incentives in promoting sustainability in the private sector.

IEA’S WORK ON POLICIES AND MEASURES FOR RENEWABLE ENERGY: Piotr Tulej, International Energy Agency (IEA), presented the Agency’s work on policies and measures for renewable energies. He highlighted various activities, including the production of publications such as the *World Energy Investment Outlook 2003* and the annual *Renewables Information* series, as well as a searchable online database on renewable energy policies and measures in IEA member countries. He also drew attention to a project designed to analyze the effectiveness of best policies and practices, and an ongoing joint project with the JREC to identify current renewable energy policies and targets.

CENTRAL AND EASTERN EUROPE - BASELINE AND SELECTED INCENTIVES: Johannes Schmidl, Austrian Energy Agency, spoke about the status of incentives in central and eastern Europe. Citing cases from the Czech Republic, Belarus, Ukraine and Austria, he highlighted factors limiting the production of sustainable energy, including a lack of security for investors, the limited number of projects, high interest rates and costs, and the short time periods for project realization. Schmidl stressed that incentives are successful when they take into account existing practices and available infrastructure and regulatory frameworks. He also highlighted the need to encourage community initiatives, secure regional political support, and use the expertise of regional technical managers.

THE EUROPEAN UNION: A DRIVING FORCE FOR GREATER SUSTAINABILITY OF ENERGY SYSTEMS: Günther Hanreich, European Commission, presented the EU’s policy and its 2010 targets on renewable energy, outlining the methods being used to reach these targets. He highlighted, *inter alia*: different rates of progress among Member States; slow progress in the heating and transport sectors compared to the electricity sector; and the need to ensure further

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progress in the development of the biomass, solar and wind sectors. Hanreich identified future priorities related to renewables, including the need to deliver on electricity and biofuels directives, ensure sufficient investment, obtain sufficient biomass for the biofuel sector, and address the slow growth of renewable energy in the heating sector. He also emphasized the need to further develop policy approaches to maintain progress in the renewable energy sector.

DO INCENTIVES REALLY ACCELERATE ENERGY SUSTAINABILITY IN THE PRIVATE SECTOR?: Peter Garforth, Garforth International, stressed the need to factor in issues of competitiveness, supply security, the environment and economics in creating effective incentives. Garforth argued that homes and buildings use 40 percent of all global energy consumption, of which only 5-15 percent is used productively. He described the energy system used in industrialized countries as one that focuses too heavily on fossil fuels and is characterized by rigid market and ownership structures and perverse incentives. He concluded with a set of policy recommendations aimed at improving government policies, ownership structures, and market access, as well as integrating community and project planning, and establishing energy performance-based standards. He also supported industry training.

DISCUSSION: In the ensuing discussion, participants deliberated on the possibility of achieving the EU renewable energy targets by importing renewable energy, strengthening the biofuel sector, and amending the taxation and subsidies policies. Hanreich underscored the importance of stable and coherent long-term policies and strategies in order to secure investment in the renewables sector. Garforth said clear targets and standards would help expose and eliminate perverse subsidies. Responding to a question on the need to promote zero-energy buildings, he said that, while such buildings are a possibility, low-energy buildings represent a more immediate step towards an energy efficient building sector.

PLENARY IV: INCENTIVE MEASURES IN DEVELOPING COUNTRIES – PUBLIC SECTOR PERSPECTIVES

This session was moderated by Thomas Johansson, International Institute for Industrial Environmental Economics. The session included four presentations and a discussion on public sector perspectives relating to incentive measures in developing countries. The presentations focused on experiences and lessons learned in Brazil, Africa and the New Partnership for Africa's Development, the Mediterranean region, and the Johannesburg Renewable Energy Coalition (JREC).

BRAZILIAN APPROACHES AND EXPERIENCES: Suani Coelho, Brazil, discussed Brazilian experiences with introducing incentive measures, highlighting, *inter alia*, the Brazilian Alcohol Programme, which resulted in job creation and a 10 percent reduction in Brazil's total carbon emissions. He also highlighted a number of government-subsidized programmes to provide energy for cooking in remote areas, improve electricity supplies in isolated communities, and promote diesel and renewable energy generation in isolated communities. Coelho then discussed the link between human development and energy access, noting that rural electrification is not always economically feasible. Finally, he highlighted the need for: decentralized energy supplies; incentives to stimulate the diversification of supply options and the best use of available resources; renewable energy technologies; community participation in electricity management; and the implementation of sustainable activities at a local level.

NEW PARTNERSHIP FOR AFRICA'S DEVELOPMENT (NEPAD): Yvette Stevens, UN Office of the Special Adviser on Africa, addressed the scope for incentives in Africa. She outlined various energy constraints, including the limited access to appropriate energy

resources, low consumption of modern energy supplies, and poor investment capacity of individual countries to exploit energy resources. Stevens explained that NEPAD is addressing these constraints through a focused set of objectives and a short-term action plan that, *inter alia*, aims to tackle the energy sector in the form of power system projects, gas and oil transmission projects, feasibility studies, capacity building, and "facilitation" activities. She proposed a list of incentive measures for Africa that included regional cooperation and attracting foreign investment. She also argued that the introduction of renewable technologies in the past had sometimes been sociologically inappropriate and had resulted in disincentives for local people. The challenge, she said, was to overcome social barriers, revive some renewable energies, and provide comprehensive and holistic incentives for Africa as a part of national, sub-regional and regional strategies. She concluded that energy in Africa should be carefully considered in order to meet MDGs.

JOHANNESBURG RENEWABLE ENERGY COALITION: Thomas Verheye, JREC, described how the Coalition helps ensure a focus on renewable energies. He said JREC is supported by 85 global members from North and South and offers a platform for dialogue, rather than negotiation. He explained that JREC focuses on strategic, non-prescriptive targets to drive policy and investment.

MEDITERRANEAN RENEWABLE ENERGY PROGRAMME (MEDREP) – THE ITALIAN APPROACH: Angelo D'Ambrosio, Italy, stressed the importance of renewables for diversifying energy supply portfolios and increasing energy supply security. He noted barriers to the diffusion of technologies, including insufficient human institutional infrastructure, limited capacities, high start-up costs, and weak incentives and inconsistent policies. He also recommended various ways to overcome these barriers, including: aligning policies with consumers' willingness to pay; using national market mechanisms, portfolio quotas and incentive tariffs; expanding support to research and development; strengthening institutional capacity in developing countries; mobilizing financing for renewables; and developing renewable certification schemes at national and international levels. He also briefed participants on the MEDREP, which he said aims to develop financial instruments and mechanisms to implement renewable energy projects in the Mediterranean region. In addition, he noted that MEDREP seeks to promote training and information dissemination, deliver electricity to isolated rural populations, increase water supply, and create sustainable enterprises.

DISCUSSION: In the ensuing discussion, participants raised a range of relevant issues, including the need for more advisers and pilot projects in developing countries. Some speakers also questioned the link between mass expansion of energy networks and implementation of the MDGs in Africa, with Yvette Stevens noting that energy infrastructure is an important factor in implementing the MDGs. Participants also discussed the effectiveness of the Brazilian Alcohol Programme, with Coelho noting that it had stimulated technical innovations and generated environmental benefits.

PLENARY V: INCENTIVE MEASURES – PRIVATE SECTOR PERSPECTIVES

On Thursday, 19 February, Steve Sawyer, Greenpeace International, moderated this Plenary session, which consisted of five presentations and a discussion on private sector perspectives relating to incentive measures. The presentations covered the work of the World Energy Council, the impact of the Kyoto Protocol, the situation in sub-Saharan Africa, steps to attract investment, and industry perspectives.

WORLD ENERGY COUNCIL VIEWS: Gerhard Schiller, World Energy Council Austria, said that while renewables contribute only 1 percent of the global energy supply, there had been a significant

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increase in demand over the last decade. Noting the benefits of hydropower in Austria, Schiller argued that hydropower could contribute significantly to sustainable energy and greenhouse gas emissions reductions.

HOW THE KYOTO PROTOCOL PROMOTES RENEWABLE ENERGY – A PERSPECTIVE FROM THE PRIVATE SECTOR: Jürgen Wahl, Verbundplan, Austria, presented a private sector perspective on options for promoting renewable energy under the Kyoto Protocol, and predicted an increase in demand for “joint implementation” projects. Citing examples of two sustainable hydropower projects in central and eastern Europe and in Bhutan, he explained that the Protocol’s flexible mechanisms benefit all parties involved. Wahl also identified factors contributing to successful project development, including early involvement of responsible institutions, clear cost-benefit analysis, high flexibility in project development, and understanding and knowledge of the Kyoto Protocol and related rules and regulations. He concluded that the Kyoto Protocol creates new financing options, guarantees social and environmental standards and encourages sustainability, supports innovation and technological development, and creates new business opportunities and project pipelines.

INCENTIVES FOR THE PRIVATE SECTOR IN SUB-SAHARAN AFRICA: Stephen Karekezi, African Energy Policy Research Network, presented two case studies from the private sector, one relating to sugar co-generation, the other to agro-based small and medium enterprises. On the sugar cane project, he attributed success to extensive documentation by academics and industry, a robust sugar sector, and a small-scale incremental approach. He added that project benefits included: centralized electricity; a shift to high pressure and efficient co-generation; and more equitable distribution of benefits among stakeholders. Karekezi said that specific incentives for sugar co-generation included grid access, the affordable price of co-generated electricity, equitable distribution of funds to farmers, tax incentives, balanced regulation, and long-term policies and incentives. In the case of the agro-based enterprises, Karekezi noted that small and low cost clean energy can provide genuine local opportunities. The key challenge, he stressed, was to create incentives for low income populations where local regulations often marginalize and criminalize small and medium sized enterprises and the informal sector. He recommended that governments officially recognize and decriminalize the informal sector, provide simple registration procedures, secure tenure to land and investment, provide income and corporate tax incentives with sunset clauses, and strengthen the micro-credit sector.

WHAT DOES IT TAKE TO ATTRACT FINANCING FOR RENEWABLE ENERGY PROJECTS?: Mark Radka, UN Environment Programme (UNEP), discussed the challenges of sustainable energy financing in developing countries, highlighting poorly developed financial markets, high commercial and credit risks, lack of infrastructure to deliver capital and services, the limited track records of clean energy developers, and a prevailing perception among financiers that renewable energy technologies are commercially unsound and involve high fuel supply risks. Radka recommended a focus on, *inter alia*: creating enterprise development structures; ensuring seed capital funds and policy support for small and medium sized enterprises; securing growth capital funds; building capacity and sharing risks with local banks; and promoting consumer finance, micro-credits, and leasing rental fees for services. He further recommended that successful public interventions should address specific market barriers, while cautioning that they should not distort existing markets. They should also avoid creating any dependencies, reward innovation, and be cost effective. Radka noted that public institutions need to take certain risks

to promote renewables, and presented the Rural Energy Enterprise Development (REED), African Rift Geothermal Development Facility, and the UNEP Sustainable Energy Finance Initiative as examples of sustainable energy finance programmes.

RENEWABLE ENERGY DEVELOPMENT AND PROSPECTS – AN INDUSTRY POINT OF VIEW: Oliver Schäfer, European Renewable Energy Council, provided an overview of progress in meeting the new European renewables target for 2020. He described wind energy as a success story, since the sector has achieved a growth rate of over 30 percent since 2000, while the biomass and solar power sectors have been less successful to date. Schäfer stated that the EU target of increasing the contribution of renewables to the overall energy mix to 20 percent by 2020 could be reached if the sector continued to grow at its current rate, despite slow development in terms of biomass and solar energy.

DISCUSSION: In the subsequent discussion, participants considered the definition of sustainable technology, with some warning against transferring obsolete technologies to developing countries. Radka advocated a pragmatic approach, noting that sustainable technology does not necessarily mean best available technology. On the issue of the regulatory changes needed to achieve sustainable energy, Schäfer emphasized the importance of regulatory frameworks that favor renewable energy and long-term investment security. Karekezi stressed the importance of good governance, incremental approaches and scaling-up local investments as a way to create sustainable energy sectors. He said experience had demonstrated that aggressive renewables targets could be achieved in Africa and risk profiles in the region reduced. Regarding the question of hydropower project sustainability, Schiller explained the need for strict environmental criteria.

PLENARY VI: PRESENTATION OF VARIOUS ACTIVITIES PROMOTING ENERGY FOR SUSTAINABLE DEVELOPMENT

Elfriede More, Ministry of Agriculture, Forestry, Environment and Water, Austria, moderated this Plenary session, which consisted of five presentations and a discussion on various activities to promote energy for sustainable development. The presentations related to a meeting on an EU energy initiative, a GFSE regional meeting on heating, rural energy programme evaluations, the Global Network on Energy for Sustainable Development, and the Renewable Energy and Energy Efficiency Partnership.

EU ENERGY INITIATIVE FOR POVERTY ERADICATION AND SUSTAINABLE DEVELOPMENT (EUEI) REGIONAL MEETING IN NAIROBI: Vladimir Stehlik, EC, reported on a recent meeting organized by EUEI to develop further dialogue on energy between the EU and African countries. He reported that participants had highlighted the need for further coordinated efforts, greater attention to energy access issues, and continuing regional dialogue. Participants had identified four main issues in African countries: energy for households; biomass and substitutes; lack of rural energy as an impediment to development; and the need for assistance in the energy sector. Stehlik recommended utilizing the resources of the European Development Fund, development cooperation programmes, and development and investment banks. He also indicated that a system of EUEI country facilitators had been established as a result of the Nairobi meeting.

GFSE REGIONAL MEETING ON DISTRICT HEATING IN SOUTH-EASTERN EUROPE: Aloisia Wörgetter, Ministry of Foreign Affairs, Austria, reported on the regional meeting on district heating in south-eastern Europe, which aimed at finding sustainable solutions for district heating in the region. Participants had recommended, *inter alia*: linking district heating to the electricity market; implementing the WEC Neptune Declaration on District Heating in the

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region; integrating district heating in national energy and environmental policies; and developing consumption-based billing systems and ensuring public acceptance. They also highlighted the need to integrate district heating concerns into country strategy papers, explore joint implementation and CDM potential, and develop special financial instruments for renewables in district heating. Wörgetter said that practical recommendations included establishing an electronic participants' network, organizing follow-up meetings, and assisting with match-making for district heating upgrade projects.

MONITORING AND EVALUATING RURAL ENERGY PROGRAMMES: HELPING TO IDENTIFY THE BEST USE OF PUBLIC FUNDS: Edgar Blaustein, Global Village Energy Partnership (GVEP) - EUEI Monitoring and Evaluation Working Group, explained that monitoring and evaluating energy access programmes can help identify the best use of public funds. He emphasized that: monitoring and evaluation has to address different needs; data collection can be complicated or costly; different sets of indicators need to be adjusted to specific projects; and a time lag between project and development results adds to the complexity of monitoring and evaluation. Highlighting the difficulties in choosing indicators, he concluded that project-specific monitoring and evaluation is necessary. Blaustein explained that his Working Group utilizes a "tool box" modular approach, consisting of general guidelines and illustrations of a range of methodologies. The Group also cooperates on volunteer test projects, and provides guidance on how to design the most effective systems for monitoring and evaluation.

ACTIVITIES OF THE GLOBAL NETWORK ON ENERGY FOR SUSTAINABLE DEVELOPMENT (GNESD): Ogunlade Davidson, International Energy Initiative, described the mandate of the GNESD to promote sustainable development and alleviate poverty through the provision of environmentally-sound energy services. He noted that the network engages in research efforts and interactions with initiatives such as the GVEP and REEEP, as well as research-oriented activities. He said the network aims to address energy policy reforms, the "energy access" challenge, and policy options leading to sustainable energy services for the poor.

RENEWABLE ENERGY AND ENERGY EFFICIENCY PARTNERSHIP (REEEP): Graham Clough, REEEP, explained that REEEP involves a global partnership of governments, businesses, financial groups, international organizations, and civil society collaborating to deliver policy and regulatory frameworks for renewable energy. He said that REEEP covers various thematic areas, including policy and regulation, finance networks, models and funds, and energy efficiency. Clough noted that key achievements of REEEP include regional stakeholder consultations, multi-stakeholder networks and coalitions, and agreement on the mandate of the REEEP. He reported that future priorities would include strengthening and deepening the regional networks, building on existing institutions, ensuring collaboration with other sustainable energy initiatives and partnerships, and contributing to the outcomes of the Renewables 2004 conference in Bonn, Germany.

DISCUSSION: Commenting on use of biomass in African countries, one participant recommended focusing on the environmental impacts of biomass energy supply, while Stehlik said that the economic aspects of biomass use also need to be considered. Another participant presented a forecast that transfer to renewable energies is realistic and affordable within next 50 years.

Participants also discussed the need for coordination among existing initiatives, highlighting industry's interest in streamlined information. Davidson recommended internal coordination among existing initia-

tives and activities at the national level. Freudenschuss-Reichl said that the GFSE could serve as a platform for sustainable energy initiatives and programmes, and help enhance coordination among them. Responding to a question regarding the initiatives that assist developing countries in formulating policies, Davidson said that national policy development should be country-driven.

On the issue of district heating, participants discussed, *inter alia*: the impacts of increasing energy consumption on district heating and the need for a systemic approach; the ways to improve district energy systems through a combination of efficient buildings, co-generation and efficient distribution; and the need for forward-looking solutions.

On lessons from existing projects, one participant highlighted the importance of learning from project failures. Responding to a question about a lack of willingness to learn from previous experiences, Blaustein underscored the need for political commitment to monitoring and evaluation and public disclosure of outcomes.

WORKING GROUP I: SUPPLY SIDE MEASURES TO PROMOTE ENERGY FOR SUSTAINABLE DEVELOPMENT

On Thursday, 19 February, participants met in two parallel working groups. Working Group I heard presentations of various case studies on the use of supply side measures to promote sustainable development. These presentations were followed by discussions and deliberations on the issues raised. Albrecht Reuter, Integriertes Ressourcen Management AG, acted as rapporteur for this Working Group.

SUSTAINABLE ENERGY REGULATION NETWORK (SERN): Gill Owen, Warwick Business School, explained how the SERN promotes regulatory approaches for sustainable energy. Owen indicated that renewable energy support mechanisms can come in the form of tariff schemes, under which network operators have to take supplies from renewable energy generators and compensate them at a specified tariff. They can also come in the form of quota schemes, under which energy suppliers are obliged to source a certain amount of energy from renewable energy generators, but no fixed renewable energy price is set. Owen also discussed the benefits of distributed energy, noting that it reduces vulnerability to disruption, increases flexibility, fosters self-sufficiency, and brings environmental benefits.

GERMAN RENEWABLE FEED-IN LAW: Andreas Wiese, Lahmeyer International, spoke about the German Renewable Energy Feed-In Law (REFL), which obliges grid operators to connect renewable energy power plant operators to the grid. He explained that the law had stimulated renewable energy market development, particularly in the photovoltaic and wind sectors, and had created more than 150,000 jobs in Germany. Citing experiences of wind energy in South Korea, Brazil and Egypt, he explained that applying feed-in successfully in developing countries requires political stability and political will, public awareness, reasonable tariffs based on the measurements of wind energy resources, the availability of funds to pay premiums, a competent private sector, special funds to reduce project development risk, and international guarantees. Wiese also stressed the need for country-specific approaches, international financing, and cooperation with the private sector as important factors for developing national wind energy markets.

AUSTRIAN CONTROL BANK EXPERIENCE: Michael Wancata, Oesterreichische Kontrollbank (OeKB), described OeKB's activities relating to export services, including export credits and a re-financing programme. He also discussed OeKB's environmental assessment programme and criteria catalogues to check environmental and social aspects in export transactions, and presented a Bulgarian hydro-power project insured by the OeKB as an example that demonstrates

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how both government and industry can benefit from joint implementation and the CDM. Wancata recommended: ongoing monitoring of markets for business opportunities; integrating climate protection considerations in internal decision-making; applying an integrated approach to project development embracing joint implementation, engineering and project financing; ensuring a clear awareness of the potential project benefits; and exposing project ideas to financial institutions at an early stage in the process.

ASSOCIATION OF EUROPEAN DEVELOPMENT FINANCE INSTITUTIONS (EDFI) AND ITS INSTRUMENTS TO PROMOTE PRIVATE SECTOR INVESTMENT IN RENEWABLE ENERGY PROJECTS: Gabriele Pammesberger, EDFI, described EDFI's instruments to promote private sector investment in renewable energy, noting the growing interest among development finance institutions in the renewable energy sector. She also briefed participants on the Austrian state-owned Investment Promotion Agency, Austria Wirtschaftsservice (AWS), which, *inter alia*, fosters long-term investments in environmental infrastructure projects with a strong focus on renewable energy and energy efficiency services. She explained that the instruments used by AWS are primarily commercial risk coverage instruments and grants for project preparation. Pammesberger described a biogas co-generation project in India, where equity investment was covered by an AWS guarantee, and highlighted the importance of adequate risk sharing between parties involved and the involvement of the sponsor in project implementation.

DISCUSSION: Participants debated the approaches for supply side incentives in developing countries. Wiese noted that feed-in laws are more appropriate for countries with large energy markets, while in small countries tendering schemes might be more effective and more politically acceptable. Participants highlighted the need for tendering skills and the importance of promoting the private sector in developing countries. A participant noted that feed-in laws carry the additional benefit of greater public acceptance. Participants also discussed the role of perverse subsidies in the energy sector and the need to take into account the social and environmental costs of fossil fuels when assessing the viability of renewable energies. In this regard, one participant highlighted the relevance of the International Organization for Standardization's methods for analysis of technical energy systems, which incorporates the calculation of external costs and risks.

Noting the need to ensure coordination among proliferating sustainable energy initiatives and networks, some suggested that international organizations take the lead on this matter. Summarizing the discussions, Reuter noted statements that efforts should focus on making green power competitive and that support schemes need to be tailored to the individual country's conditions.

WORKING GROUP II: DEMAND SIDE MEASURES TO PROMOTE ENERGY FOR SUSTAINABLE DEVELOPMENT

On Thursday, 19 February, participants met in two parallel working groups. Working Group II heard presentations on the use of demand side measures to promote sustainable development. Vladimir Stehlik was rapporteur for this Working Group.

INCOME GENERATION – THE ABILITY TO PAY FOR ENERGY CONSUMED: Cahit Gürkök, UNIDO, outlined UNIDO's Energy Programme and its mandate to address poor peoples' access to energy, ensure rational energy use, and provide capacity building and training on the UN Framework Convention on Climate Change and the Kyoto Protocol. He outlined several incentives for promoting rural energy services, including: capacity building; mechanisms to reduce transaction costs; power purchase agreements for the producer and agreements on energy services; and stable and affordable energy prices.

He concluded that projects require private sector involvement coupled with government support to ensure transparent intervention and assistance.

THE ROLE OF CLEANER FUELS IN POVERTY REDUCTION: Andrew Yager, UN Development Programme (UNDP), presented the rationale underlying UNDP's promotion of cleaner fuels, such as liquefied petroleum gas (LPG). He explained that energy is the key to meeting basic needs for domestic use, household tasks, productive purposes and social services in rural areas. Drawing attention to a UNDP report, *Generating Opportunities: Case Studies on Energy and Women*, Yager pointed out that women and girl children in particular lack access to energy and services. He spoke about the Mali Multifunctional Platform, a diesel engine that can run various appliances and small business applications in rural villages, and illustrated how renewable technology can provide simple and affordable energy to women. He argued that technology transfer is needed, but that it is not the only ingredient for increased energy output. On moving forward with LPG projects, Yager highlighted the challenge of securing corporate commitment from individual companies in specific countries.

VILLAGE ENERGY SERVICES: THE CASE OF GVEP: Paul Hassing, GVEP, explained that the GVEP was launched at the WSSD and aims to provide energy access in over 30 countries to over 300 million people, develop energy access to 50,000 communities, train a nucleus of entrepreneurs, and demonstrate improvements in quality of life and poverty reduction. He spoke about the difficulties of operating in rural areas and the limited access and risks of credit for the poor. Hassing said consumers desire a range of technologies and service levels and credit is needed to broaden markets. He indicated that national governments are increasingly recognizing an off-grid approach as a legitimate electrification method. To ensure sustainable energy, he noted that rural people require pre-investment assistance, training, and flexible business approaches and affordable credits. Hassing also noted that policies should: support least-cost rural energy options, both centralized and decentralized; eliminate tariff and duty distortion; establish transparent mechanisms for subsidy fund mobilization; and permit equitable access to subsidy funds. He also stressed the need for clear and realistic rural electrification plans and enabling regulations.

DEFINED DECREASING SUBSIDIES – A DONOR'S PERSPECTIVE: Rudolf Hüpfl, Austrian Development Agency (ADA), described the Austrian approach to development assistance and renewable energy. He noted that the tools used to transfer renewables to rural communities include foreign know-how coupled with experiences of local industry and local or neutral organizations and institutions. He emphasized the importance of using local knowledge and partnerships to ensure the uptake of renewables in rural areas. On subsidies, he noted that the ADA has achieved success by commissioning and ensuring quality checks of projects by neutral quality inspectors.

RENEWABLE ENERGY TECHNOLOGIES (RETS): OBJECTIVES, FOCUS AND EXPECTED RESULTS: Daniel Bouille, Bariloche Foundation, discussed the importance of RETs, and explained the significance of the Global Network on Energy for Sustainable Development for RETs. He indicated that the Network focuses on assessment and design, guidelines for design and implementation, and dissemination of information, and provides a framework to test the role of RETs in poverty eradication and energy access.

PUBLIC-PRIVATE PARTNERSHIPS: PACE PROJECT LESSONS FROM ETHIOPIA, NEPAL, SRI LANKA, AND UGANDA: Jeremy Doyle, Energy for Sustainable Development, presented results from the Public-Private Partnerships for Access to Community Electricity (PACE) project, which addressed public-private

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partnerships and electricity use under liberalization of the electricity sector and decentralization of governments. He cited two case studies of community schemes with successful private sector involvement in Ethiopia and Sri Lanka. He said experience shows that: communities often do not trust the private sector; projects are often driven by local interest groups; and there is lack of support for projects driven by individuals. He recommended that donors should focus on single activities, that non-governmental organizations should have a role in project design, and that regulatory frameworks be developed.

THE ENTERPRISE CENTERED MODEL: Paul van Aalst, E+Co, explained that E+Co is a consulting firm that aims to promote clean energy enterprises in developing countries and to provide new opportunities to small and medium sized energy enterprises. He pointed out the importance of working with local entrepreneurs who understand local demand and possess the necessary know-how to bring business to rural areas. Van Aalst noted that the added value of E+Co is in its particular blend of private and public financing, such as co-financing from multilateral development banks, regional investment funds, and other investment loans, including from the Development Agency of the Netherlands, and the Body Shop. He highlighted E+Co's achievements, including its support for enterprises that deliver clean energy to 1.7 million people, its leveraging of US\$50 million of co-financing, and its success in preventing an estimated 60,000 tons of carbon dioxide emissions per year.

DISCUSSION: In the ensuing discussion, participants spoke about investment in technology creation for the poor. Gürkök said that UNIDO is utilizing know-how from its technology development in China and India. On cleaner fuels and poverty alleviation, one participant raised concerns that decentralized projects might deter policy makers from addressing long-term political solutions to achieving access to energy services. Yager responded that the small-scale LPG projects represent only a part of the development process, adding that LPG is not meant to replace charcoal or wood, but should be seen as an additional fuel. Participants discussed the gaps between "new investment initiatives" and on-the-ground initiatives, and the failure of international finance institutions to upscale decentralized projects, with some noting that funding does not usually reach the poor and has little impact. On subsidies, Hassing recommended considering the long-term uptake of modern energy services. One participant stressed the central role of national frameworks, asking how bilateral cooperation could help empower local people and countries to establish more coherent development policies on access to energy and on poverty alleviation. Doyle responded that policy frameworks could be informed by local initiatives.

PLENARY VII: REPORTS FROM THE WORKING GROUPS

On Friday morning, 20 February, delegates reconvened in Plenary to hear the rapporteurs of the two working groups report on discussions held the previous day. The Plenary was moderated by Irene Freudenschuss-Reichl.

REPORT OF WORKING GROUP I: Albrecht Reuter, the rapporteur of Working Group I, summarized the lessons learned from case studies discussed by the Working Group on supply side measures, and presented the Group's key conclusions. He noted participants' views that:

- renewable energy has to be seen in a systems context;
- wind energy is on its way to becoming competitive with conventional energy;
- there is no general advice on whether tariff price or quota obligation systems are preferable, because the choice between tariff/price or quota/obligation systems depends on the specific country context

- and because there are no long-term experiences with both systems;
- external costs need to be taken into account in the evaluation of economic viability of the energy types, but the methods of external cost calculation are still at the development stage;
- sustainable energy should involve a coordinated effort requiring cooperation among existing sustainable energy initiatives, and the GFSE should list existing sustainable energy initiatives on its website; and
- financing instruments are available, and there are examples of their successful use, but more know-how and experience is required.

REPORT OF WORKING GROUP II: Vladimir Stehlik, Working Group II's rapporteur, reported that the Group had identified a "list of dichotomies" between top-down and bottom-up approaches, social and economic priorities, networks and projects, and the private and public sector. He noted a paradigm shift in the renewable energy discourse and suggested that future work should involve unraveling the "jungle" of energy definitions. He proposed that sustainable energy be framed in terms of: access and poverty alleviation; services and markets; funding and economics; and technology and environment. Stehlik indicated that the Group had decided there was a place for subsidies and incentives at all levels and suggested that public funds should contribute to providing the right regulatory framework. He said subsidies and incentives required innovative approaches, such as the EUEI Implementation Facility and the JREC Patient Capital initiative. He recommended providing incentives for demand-side energy generation and targeting poverty, economic development, and excess liquidity in the financial sector. He concluded that sustainable energy should enhance poverty alleviation and economic growth, but noted a lack of data on this matter.

DISCUSSION: On subsidies, participants highlighted, *inter alia*: the importance of demand-side incentives and subsidies for efficient use; the existence of unsustainable subsidies both in developed and developing countries; the fact that subsidies often aim not only to support the industry, but also to protect the poor who cannot pay the real price of energy services; the primary responsibility of governments for transforming national energy systems via changes in subsidies and tariffs; and the need to address the problem of differentiated access to energy in developing countries. Reuter stressed the need to conduct scientific analysis and reach consensus prior to introducing new laws. Stehlik highlighted the difficulties of creating a level playing field in the energy sector, noting that research and development funds for conventional energy still exceed those for the renewable energy sector, and adding that, in order to change the situation, decisions need to be made at a high political level.

One participant reiterated the need to link discussions on sustainable energy to the MDGs, and called for proactive and innovative efforts to raise awareness about different energy choices among the poor. Freudenschuss-Reichl recommended reflecting energy aspects in developing countries' requests for donor assistance, and Stehlik proposed integrating energy issues in poverty reduction strategy papers. Reuter suggested quantitative analysis of the contribution of energy services to achieving development goals.

Participants also discussed: the need to consider access to energy as a fundamental human right; the trend of transferring energy intensive industries to developing countries, and local production as an alternative to this unsustainable trend; the long-term negative consequences of transferring obsolete technologies to developing and EU accession countries; and the need to promote best technologies worldwide, with Stehlik highlighting the challenge of transferring know-how on renewables from developed to developing countries.

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CONCLUDING PANEL: NEXT STEPS TO ADVANCE ENERGY FOR SUSTAINABLE DEVELOPMENT

Late on Friday morning, participants gathered for the final session of GFSE-4 – a concluding panel and discussion on the next steps to advance energy for sustainable development. The session was chaired by Irene Freudenschuss-Reichl.

Martin Schöpe, Ministry of Environment, Germany, informed participants about the upcoming Renewables 2004 conference that is expected to be attended by over 1000 participants. He indicated that Renewables 2004 would focus on three core elements: policies for renewable energy market development; financing options for renewable energy; and human capital institutions and technology development. He said that anticipated outcomes would include a political declaration, international action plan, and guidance for good policy. Freudenschuss-Reichl suggested that the concluding panel consider the issue of how to advance the global energy agenda in a systemic way, including follow-up to the Renewables 2004 conference, and what contributions the GFSE might provide to the debate.

Ogunlade Davidson said that the GFSE had created a space to improve general understanding of renewable energy and widen the scope for collaboration. He urged greater involvement of universities from developing countries and further consideration of government and private sector roles. He proposed that: collaborative efforts on energy continue through the energy network; policy-makers be invited into this network; and international efforts focus on energy and poverty related research.

Thomas Johansson said environmental and social benefits of renewable energy are underestimated in the conventional energy debate. He discussed insufficient allocation of resources for energy efficiency and renewable energy research and the lack of attention to innovative change, citing innovations for energy efficiency in the transportation and construction sectors to demonstrate the potential of best available technologies. Noting that conventional industry maintains political pressure to retain its subsidies, Johansson noted that a major challenge is to create the necessary framework conditions for securing sustainable energy, and expressed the hope that Renewables 2004 would be a step toward addressing this challenge.

Steve Sawyer explained that although lobbying efforts to ensure high-level political commitment to renewable energies at the global level during climate change and sustainable development negotiations were stalled by governments protecting the interests of fossil fuel industries, the WSSD process had resulted in certain positive outcomes, including the creation of the JREC. He said the Renewables 2004 conference represents a test for the Coalition, which should demonstrate that it is willing to agree on targets and measures to foster massive uptake of renewable energy worldwide. Sawyer suggested that the outcomes of Renewables 2004 should include a commitment by the EU to extend its renewables targets, and a concrete initiative to bridge the gap between the EU and at least one of the regional initiatives on renewable energy. He also stressed the need to champion this issue in the period between Renewables 2004 and the 2006-2007 biennium in which energy will be dealt with by the CSD.

Peter Garforth reiterated that energy should be seen as part of an integrated system and argued that efficiency should be integrated into an overall energy strategy. He emphasized that 70 percent of global electricity generation is utilized by the urban sector and supported the establishment of efficient and locally-driven systems. He urged participants to recognize that the poor people of today will be the customers of the future.

DISCUSSION: One participant criticized uncoordinated regional efforts on sustainable energy and proposed that regional collaboration be addressed at Renewables 2004. Discussing the affordability of renewables, another participant highlighted that developing countries lack the resources to translate international commitments into reality. The scarcity of data on poverty and energy was mentioned by one participant, who called for the lack of data on linkages between policy and practice to be addressed. Several speakers also reiterated the need for technical and financial capacity building.

Johansson underlined the importance of education in all respects and in all types of professions and the need to overcome a prevailing notion that renewable energy technologies are expensive, which results from faulty evaluation of costs and benefits of renewable energies. Another participant said that renewable energies would not be competitive unless they are fully integrated in the economies of developing countries.

A participant recommended matching renewable energy supply and demand for energy services, citing as an example the use of wind energy for irrigation.

Schöpe said that it is crucial to use the investments in renewables in the most efficient way possible. He agreed that the issue of energy efficiency needs to be addressed in-depth. Schöpe recommended that those countries with ambitious sustainable energy targets and commitments present their efforts in Bonn and said that the outcomes of Renewables 2004 could include voluntary targets. He welcomed a proposal to convene a second African regional meeting to prepare for Bonn.

On access issues, Davidson said certain political interests were preventing renewable energies from entering the market and achieving proven technology status, and suggested discussing this issue at Renewables 2004. Sawyer said that renewables can solve the issue of access to energy and help find a way out of the poverty trap, but stressed that it is necessary to focus on the need for energy services, rather than on the preferred supply sources. Garforth noted that the GFSE should not target the absolute level of global energy subsidies, but instead should discuss how to allocate them better.

Freudenschuss-Reichl commented that a working group on systemic approaches to energy could be set up through the GFSE. She said that energy initiatives could be managed in a more user friendly way through the Forum.

CLOSING REMARKS: Irene Freudenschuss-Reichl informed participants that the full report of GFSE-4 would be posted on GFSE's website (<http://www.gfse.at>) and a short executive summary would be elaborated by the convenors. She welcomed comments on the draft report. She said that the GFSE-4 executive summary would be forwarded to the Renewables 2004 conference as well as to the UN in view of upcoming deliberations at the CSD. She thanked GFSE-4's participants and organizers, and declared the meeting closed at 1:00 pm.

THINGS TO LOOK FOR

CONFERENCE ON ENERGY EFFICIENCY IN CONSTRUCTION: This conference on energy efficiency in building construction and refurbishment will be held from 25-28 February 2004 in Sofia, Bulgaria. The conference will focus on how to improve energy efficiency in existing buildings through methods such as thermal insulation, energy efficient lighting systems, and intelligent heating systems. For more information contact: Miriam Hegner, Information Service; tel: +49-71-2130-160 or 49-71-2130-16100; e-mail: redaktion@energie-server.de; Internet: <http://www.energie-server.de/bulgaria/engl>

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POWER-GEN RENEWABLE ENERGY CONFERENCE: This conference will convene from 1-3 March 2004 in Las Vegas, Nevada, United States, to discuss the key technical, regulatory, structural, economic and market issues impacting the commercial future of the renewable energy sector. For more information contact: John L. Anderson, Manager, Sponsorship Sales, POWER-GEN; tel: +1-651-480-2224; fax: +1-651-480-1503; e-mail: johna@pennwell.com; Internet: <http://pgre04.events.pennnet.com>

WORLD SUSTAINABLE ENERGY DAYS 2004 CONFERENCE: This conference will convene from 3-5 March 2004 in Wels, Austria. It will provide a forum for learning about major European trends in energy policies and technologies, including trends in the fields of green electricity, pellets technologies and innovative buildings. For more information contact: O.Ö. Energiesparverband Energy Agency; tel: +43-732-7720-14380; fax: +43-732-7720-14383; e-mail: office@esv.or.at; Internet: http://www.esv.or.at/aktuelles/WEST/index_e.htm

THIRD EUROPEAN CONFERENCE ON GREEN POWER MARKETING: This conference take place from 18-19 March 2004 in Lausanne, Switzerland, and will focus on the opportunities arising from international green power trading on the European market. For more information contact: Conference Management; tel: +41-1-296-8709; fax: +41-1-296-8702; e-mail: info@greenpowermarketing.org; Internet: <http://www.greenpowermarketing.org/english/index2.html>

CONFERENCE ON GREENHOUSE GAS BALANCES OF BIOMASS AND BIOENERGY SYSTEMS: This conference will be held from 22-23 March 2004 in Rotorua, New Zealand. Delegates will discuss the role of carbon sequestration and bionergy projects in national and international greenhouse gas markets. For more information contact: Kimberly Robertson, Force Consulting Ltd, New Zealand; tel: +64-7-343-9559; fax: +64-7-343-9557; e-mail: kimberlyrobertson@xtra.co.nz; Internet: <http://www.joanneum.at/iea-bioenergy-task38/workshop/announcement.pdf>

EUROPEAN EMISSIONS TRADING CONFERENCE 2004: This event, which will take place from 23-24 March 2004 in Brussels, Belgium, will provide guidance and advice for companies preparing for the EU emissions trading scheme. For more information contact: Gareth Pearce, International Quality and Productivity Center; tel: +44-20-7368-9300; e-mail: gareth.pearce@iqpc.co.uk; Internet: <http://www.oilandgasiq.com/2125a>

15TH ANNUAL EARTH TECHNOLOGIES FORUM: This meeting will convene from 13 -15 April 2004, in Washington DC. It will address global climate change and ozone protection policy and technology issues. For more information contact: Conference Secretariat; tel: +1-703-807-4052; fax: +1-703-528-1734; e-mail: earthforum@alcalde-fay.com; Internet: <http://www.earthforum.com>

29TH INTERNATIONAL TECHNICAL CONFERENCE ON COAL UTILIZATION AND FUEL SYSTEMS: This conference will be held from 18-22 April 2004 in Clearwater, Florida, United States. The theme of the conference is "Coal from Hydrogen Is Here!" For more information contact: Barbara Sakkestad, Coal Technology Association; tel: +1-301-294-6080; fax: +1-301-294-7480; Internet: <http://www.coaltechnologies.com/conferences.html>

CARBON MARKET INSIGHTS CONFERENCE 2004: This event will be held from 20-21 April 2004 in Amsterdam, the Netherlands. The meeting will examine the future of carbon markets, including the EU's emissions trading scheme, as well as Russia's climate policy. For more information contact: Marte Nordseth/Ian Roche, Point Carbon; tel: +47-9-242-9400; fax: +47-9-257-0818; e-mail: conference@pointcarbon.com; Internet: <http://www.pointcarbon.com>

ADVANCED INSTITUTE ON VULNERABILITY TO GLOBAL ENVIRONMENTAL CHANGE EVENT: This third in a series of focused training/research events organized by IIASA will be held from 3-21 May 2004, in Laxenburg, Austria. The event will focus on the methods of vulnerability analysis. For more information contact: START; tel: +1-202-462-2213; fax: +1-202-457-5859; e-mail: START@agu.org; Internet: http://www.start.org/links/announce_oppo/P3_Announcement.pdf

SECOND WORLD CONFERENCE ON BIOMASS FOR ENERGY, INDUSTRY, AND CLIMATE PROTECTION: This conference will convene from 10-14 May 2004 in Rome, Italy. Participants will discuss the use of biomass as a source of renewable energy and carbon dioxide reduction. For more information contact: ETA Renewable Energies, Italy; tel: +39-55-500-2174; fax: +39-55-573-425; e-mail: biomass.conf@etaflorence.it; Internet: http://www.conference-biomass.com/conference_Welcome.htm

SECOND WORLD RENEWABLE ENERGY FORUM: This forum will take place from 30-31 May 2004 in Bonn, Germany. The aim of the meeting is to consider the use of renewable energy in industry, rural areas, and cities and the proposals by international NGOs for achieving renewable energy prior to the Renewables 2004 conference, which is taking place immediately after the forum (see below). For more information contact: World Council for Renewable Energy/EUROSOLAR; tel: +49-228-362-373; fax: +49-228-361-213; e-mail: info@wcre.org; Internet: <http://www.world-council-for-renewable-energy.org>

INTERNATIONAL CONFERENCE FOR RENEWABLE ENERGIES (RENEWABLES 2004): This conference will convene from 1-4 June 2004 in Bonn, Germany, to discuss financing and market development, the formation of enabling political framework conditions, and capacity building to promote renewable energy. The conference is expected to add to the momentum generated by the JREC. For more information contact: Secretariat of the International Conference for Renewable Energies; tel: +49-6196-794404; fax: +49-6196-794405; e-mail: info@renewables2004.de; Internet: <http://www.renewables2004.de>

TWENTIETH SESSIONS OF THE SUBSIDIARY BODIES TO THE UNFCCC: This event will be held from 14-25 June 2004 in Bonn, Germany. It will resume negotiations relating to the UN Framework Convention on Climate Change (UNFCCC) and 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>

19TH WORLD ENERGY CONGRESS: This Congress will convene from 5-9 September 2004 in Sydney, Australia, to focus on key energy issues covering a wide range of topics within the energy industry. For more information contact: 19th World Energy Congress Managers; tel: +612-9248-0800; fax: +612-9248-0894; e-mail: energy2004@tourhosts.com.au; Internet: <http://www.tourhosts.com.au/energy2004>

TENTH CONFERENCE OF THE PARTIES TO THE UNFCCC: The tenth Conference of the Parties (COP-10) to the UNFCCC will be held from 29 November to 10 December 2004 in Buenos Aires, Argentina. Delegates will continue negotiations relating to the Convention and 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>