



SUMMARY OF THE VIENNA ENERGY FORUM 2011: 21-23 JUNE 2011

The Vienna Energy Forum 2011 was held from 21-23 June 2011 at the Hofburg Palace in Vienna, Austria. The Forum addressed the theme, “Energy for All – Time for Action.” The event brought together more than 1200 participants from 110 countries, including former and serving heads of state, ministers, policymakers, experts, and representatives of civil society and the private sector. Organized jointly by the United Nations Industrial Development Organization (UNIDO), the Austrian Federal Ministry for European and International Affairs and the International Institute for Applied Systems Analysis, the Forum focused on energy poverty and increasing energy access in developing countries.

The Vienna Energy Forum, which will be held every two years, was established with the aim of exploring 21st Century challenges from the perspective of energy, based on the premise that challenges such as poverty, climate change, security, health and income are closely linked to the nature, accessibility and affordability of existing energy systems. The 2011 Forum addressed a range of issues, including the key building blocks for developing a strategy for prioritizing the energy access agenda, as well as energy efficiency and reducing global energy intensity.

The three-day Forum was organized around two high-level panels, five plenary sessions and six roundtables. It also included the pre-launch of the Global Energy Assessment, due to be released in late 2011. The Forum was held in parallel with a Ministerial Meeting on Energy and Green Industry, which aimed to initiate a high-level dialogue on strategies and solutions in support of three inter-related global objectives: expanding access to clean energy; enhancing industrial energy efficiency; and promoting green industry.

This report provides a brief history of the Vienna Energy Forum and other relevant energy meetings and processes, and summarizes the discussions during the 2011 Forum in chronological order.

BRIEF HISTORY

GLOBAL FORUM ON SUSTAINABLE ENERGY:

The first Global Forum on Sustainable Energy (GFSE) convened from 11-13 December 2000, in Laxenburg, Austria. GFSE-1 addressed the theme “Rural Energy - Priorities for Action.” Since then, the Forum has convened almost every year, addressing themes such as energy technologies in the context of rural development, the role of incentive measures, biomass, “Africa is Energizing Itself,” and energy efficiency for developing countries. IISD Reporting Services’ coverage of many of these events can be found at: <http://www.iisd.ca/ymb/energy/gfse/ebdc/>

GLOBAL RENEWABLE ENERGY FORUM: The first

Global Renewable Energy Forum (GREF) was held in Foz do Iguaçu, Brazil, from 18-21 May 2008, with the objectives of: creating a suitable environment to promote dialogue on strengthening inter-regional bonds; setting up joint actions among countries and regions to reduce poverty and enhance energy security through the use of renewable energy sources; and promoting the development of renewable energy sources and related infrastructure in Latin America and the Caribbean. IISD Reporting Services’ coverage of the meeting can be found at: <http://www.iisd.ca/ymb/greb2008/>.

The second GREF convened from 7-9 October 2009, in León, Mexico, under the theme “Scaling up Renewable Energy.” Its main objective was to provide a platform for proactive dialogue to strengthen inter-regional cooperation and

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encourage innovative multi-stakeholder partnerships aimed at scaling-up renewable energy in Latin America and elsewhere. IISD Reporting Services' coverage of the meeting can be found at: <http://www.iisd.ca/yimb/energy/greb2009/>.

INTERNATIONAL RENEWABLE ENERGY

CONFERENCE: At the World Summit on Sustainable Development in 2002, German Chancellor Gerhard Schröder invited the international community to a Conference on Renewable Energy. The International Renewable Energy Conference (IREC), "Renewables2004," took place from 1-4 June 2004, in Bonn, Germany, and launched a series of IREC meetings. The outcomes of the conference led to the creation of the Renewable Energy Network for the 21st Century (REN21). IISD Reporting Services' coverage of Renewables2004 can be found at: <http://www.iisd.ca/sd/ren2004>.

Subsequently, three more meetings have been held under the IREC process, including: the Beijing International Renewable Energy Conference (BIREC), hosted by China from 7-8 November 2005, which adopted the Beijing Declaration; the Washington International Renewable Energy Conference (WIREC), which was held from 4-6 March 2008, in Washington DC, US, and resulted in the Washington International Action Programme; and the Delhi International Renewable Energy Conference (DIREC 2010), which took place from 27-29 October 2010, in New Delhi, India, and concluded with the DIREC Declaration and 30 new pledges by governments and civil society under the Delhi International Action Programme.

IRENA: The International Renewable Energy Agency (IRENA) was officially established in Bonn on 26 January 2009. The Founding Conference was attended by 125 delegations and a total of 75 countries, developing and industrialized, signed IRENA's Statute. IRENA's main objective is to promote a rapid transition towards the widespread and sustainable use of renewable energy worldwide. It will offer advice to its members on creating appropriate framework conditions, engage in capacity building, and foster the dissemination of, and learning from, best practice examples for technology transfer and renewable energy financing.

VIENNA ENERGY CONFERENCE 2009: The Vienna Energy Conference convened in Vienna, Austria, from 22-24 June, 2009. The conference served as an opportunity to: shift the debate on energy and development beyond generalities and identify specific courses of action; initiate and advance regional and international co-operation; and present new international energy initiatives such as IRENA. IISD RS coverage of the meeting can be found at: <http://www.iisd.ca/yimb/energy/iec2009/>

FOURTH WORLD FUTURE ENERGY SUMMIT:

The Fourth World Future Energy Summit (WFES) 2011 took place in Abu Dhabi, United Arab Emirates, from 17-20 January 2011. Participants considered various issues, including: international future energy policy; financing future energy; solar energy; green cities; sustainable buildings; wind energy; energy storage; hydrogen; carbon capture and storage; energy efficiency; and smart grids. IISD RS coverage of the meeting can be found at: <http://www.iisd.ca/yimb/energy/wfes/wfes2011/>.

REPORT OF THE MEETING

OPENING CEREMONY

The Vienna Energy Forum 2011 opened on Tuesday morning, 21 June 2011. Irene Freudenschuss-Reichl, Director General, Austrian Development Cooperation, Austrian Federal Ministry for European and International Affairs, opened the meeting and highlighted that the Forum is special for many reasons, including because of the "Vienna energy club" – Vienna-based organizations with energy mandates.

Johannes Kyrle, Secretary-General for Foreign Affairs, Austrian Federal Ministry for European and International Affairs, said the Forum would mobilize political support for the energy access agenda, which is vital for poverty reduction. He encouraged participants to start discussing models for financing, taking account of the necessary division of labor between the private and public sectors, as well as the national and international communities.

Detlof von Winterfeldt, Director, International Institute for Applied Systems Analysis (IIASA), underlined the importance of research in developing clean energy sources. He stressed that reliance on coal by a large section of the planet causes premature deaths, mostly among women and children, and that it only requires political will to reduce this number dramatically.

Kandeh Yumkella, Director-General, UN Industrial Development Organization (UNIDO), stressed the importance of providing energy access for the poor and outlined three political goals of: achieving universal energy access by 2030; reducing energy intensity by 40% by 2030; and having a global energy mix of 30% renewables by 2030. He said these goals are achievable and should be adopted as a package, and expressed hope that they will be taken up by the 17th Conference of the Parties of the UN Framework Convention on Climate Change (COP 17), as well as the Rio+20 Conference. He added that an expected output of the Forum is the development of an energy action agenda for the UN Secretary-General.

In a video message, UN Secretary-General Ban Ki-moon recalled that 1.5 billion people have no access to electricity and that one billion only have access to unreliable electricity. He suggested that nothing short of a clean energy revolution can address this, stressing that the Rio+20 Conference will be an opportunity to promote clean energy transformation and a transition to low-carbon growth and that this Forum is an important milestone on that path. He reiterated the three 2030 energy goals of universal access, 40% energy intensity reduction and a global energy mix of 30% renewables, expressing hope that governments will adopt these goals during the Rio+20 Conference. He underscored that equity, environmental urgency and economic opportunity are the driving forces behind the campaign for these goals.

Former Nigerian President Olusegun Obasanjo said that to achieve energy for all, governments and the private sector of a few developed and emerging countries need to "take the lead and blaze the trail." He stressed that renewable energy is the African region's only option to achieve clean, efficient and adequate energy supply.

Julio María Sanguinetti, former President of Uruguay, underlined that energy development requires adequate investment. He stressed that such investment needs an appropriate investment environment, consisting of political stability, legal security and adequate social conditions such as more balanced societies.

Henry Puna, Prime Minister of the Cook Islands, highlighted that islands bear a high energy cost due to their importation of fossil fuels and emphasized the importance of this Forum in assisting smaller countries in the development of green energy technologies. He stressed that “the time to act is now.”

Monique Barbut, CEO and Chair, Global Environment Facility (GEF), underscored the role of the public sector in providing funds to develop non-polluting energy sources and decrease fossil fuel subsidies.

In a keynote address, Arnold Schwarzenegger, former Governor of California, recalled the improvement of California’s finances due to the growth of the green industry and underscored the importance of communicating the message both from the bottom up and from the top down. He added that the messages of reducing pollution, enhancing national security and providing job security should accompany the global message of halting global warming.

Mohammed Chambas, Secretary General of the African, Caribbean and Pacific Group (ACP), stressed that access to renewable energy and modern energy services is a prerequisite to, *inter alia*, attainment of the Millennium Development Goals (MDGs), achievement of sustainable development, eradication of poverty and the graduation of least developed countries (LDCs) to non-LDC status. He highlighted the Economic Community of West African States (ECOWAS) Regional Centre for Renewable Energy and Energy Efficiency (ECREEE), established in 2009 in Cape Verde.

PRE-LAUNCH OF THE GLOBAL ENERGY ASSESSMENT

Ged Davis, Co-President of the Global Energy Assessment (GEA), made a keynote presentation on the GEA, which is due to be published later this year. He reported that the report is organized into four sections, addressing: 21st Century challenges; the resources and technological options available for meeting the energy challenge; current energy systems from integrated perspectives; and the policies and capacity development needed to address the energy challenge. He added that a set of policy tools for policymakers had been developed, aimed at helping policymakers make intelligent energy choices. Davis stressed that energy access for all is possible, but requires political will, forward-looking policies and adequate investment.

Commenting on the keynote presentation, Elizabeth Dipuo Peters, South Africa’s Minister of Energy, identified practical steps for enabling countries to transform their global energy sectors in an increasingly interdependent world economy. She pointed out that national stability is threatened by a lack of energy access in most poor countries and that this can be averted by using a tool like the GEA.

Abdul Rahim Hashim, President, International Gas Union, underscored the insufficiency of a single energy solution, saying there is a need for a mix of fuels to meet global

requirements. He highlighted the need for clean, efficient, affordable and reliable energy systems to meet the long-term needs for sustainable development, and said natural gas, among other fuels, fits into these requirements.

HIGH-LEVEL PANEL I: PAVING THE WAY FOR UNIVERSAL ENERGY ACCESS

On Tuesday morning, Zeinab Badawi, BBC Moderator, facilitated the high-level panel on universal energy access, highlighting that millions of people in the African region lack access to energy, which negatively impacts their standard of living.

Fabricio Hernández Pampaloni, Secretary of State for Energy, Spanish Ministry of Industry, Tourism and Trade, outlined five steps that can be taken to achieve universal access to energy: build political trust and commitment; align national policy and local institutions on specific and realistic energy targets; secure financing; transfer technology; and promote renewable energy to reduce dependence on imported fuels.

Rebeca Grynspan, Associate Administrator, UN Development Programme (UNDP), said that to accelerate international cooperation to overcome extreme poverty in sub-Saharan Africa, governments need capacity building support to establish the necessary policy frameworks. She noted that 90% of clean energy investment is currently made in G20 countries, with only 10% flowing to the rest of the world, and underscored the need for the right framework in poor countries to help them attract the required investment.

Friedrich Kitschelt, Director-General for Africa and Global and Sectoral Issues, German Ministry for Economic Cooperation and Development, stressed that private investment is the backbone of sustainable development. He outlined the required components of a conducive framework for increasing private investment, including: protection of private property; deregulation of energy markets; protection of investments; transparency and accountability; effective anti-corruption policies and measures; rule of law; and guarantee of human rights. He added that countries should also mobilize their own resources to promote energy access.

Goran Svilanovic, Coordinator of Economic and Environmental Activities, Organization for Security and Cooperation in Europe, highlighted: good governance and transparency in extractive industries; infrastructure protection; early warning systems; promotion of sustainable energy solutions; and linkages between climate change and energy needs. He stressed the need for transparency, diversification and a legal framework for renewable energy strategies.

Suleiman Al-Herbish, Director General, Organization of Petroleum Exporting Countries (OPEC) Fund for International Development (OFID), noted OFID’s role in supporting poor countries over the last 30 years through investments. Responding to a comment about OPEC’s high profits, he referred to their recent commitments to renewable energy research.

In the subsequent discussion, Hernández Pampaloni responded to a question on biofuels by asserting that it should be part of the energy mix, stressing that mobility and adequate use of funding for technology transfer is vital. Grynspan highlighted the importance of biofuels in UNDP projects that have substantially improved women’s lives.

HIGH-LEVEL PANEL II: SUSTAINABLE ENERGY FOR A GREEN ECONOMY

On Tuesday afternoon, Rajendra Pachauri, Chair of the Intergovernmental Panel on Climate Change (IPCC), moderated the high-level panel, underscoring that sustainable energy and a green economy must be connected.

Alessandro Ortis, Energy Advisor, Ministry of Foreign Affairs, Italy, outlined some tools for accelerating sustainable development, including: energy efficiency; renewable energy; infrastructure and grid development; carbon capture and sequestration; better international and regional collaboration, coordination and cooperation; and innovative post-Kyoto mechanisms. He underscored that transition to a green economy does not require sacrificing standards of living, as adequate energy access can be achieved through a green economy.

Ogunlade Davidson, Minister for Energy and Water Resources, Sierra Leone, highlighted the plight of poor countries in Africa that struggle to access even the most basic technologies. He underscored that these governments need incentives to transition to a green economy and that putting a price on carbon might make these technologies more readily available.

Enrique Iglesias, Secretary General, Ibero-American Secretariat, stressed the importance of having appropriate financial regulatory systems. He lamented the lack of financial mechanisms to support renewable energy, noting that the use of subsidies benefits fossil fuel extraction.

Timur Ivanov, Director General, Russian Energy Agency, stated that the Russian Federation is modernizing its economy in order to develop infrastructure that will pave the way for a green economy. He described a resolution to increase renewable energy in the energy mix to 40% by 2020, stating that the country's goal is to become more competitive in the green energy market.

Marcin Korolec, Under-Secretary of State, Polish Ministry of Economy, said Poland has reduced its dependence on coal by 7% over the last two years. He stressed the need to reduce emissions of carbon dioxide. While expressing doubt that climate change is directly linked to human behavior, he emphasized that "sustainable development today means economic development tomorrow."

José Antonio Meade Kuribrena, Secretary of Energy, Mexico, underscored the huge potential in Mexico for solar and wind power development, and stated that although renewable energy use is currently 2% of the energy mix, the biggest challenge is financial, to provide certainty of access.

In the ensuing discussion, Iglesias responded to a question on the role of international institutions by suggesting that they need to focus primarily on supporting investments that increase energy access and efficiency. Responding to a comment on transportation, Davidson noted the high cost of smart cars and stressed the importance of making innovative technologies more affordable. Ivanov noted that necessity is a driver of innovation and highlighted the need to motivate business. He said the market is ready to invest in renewable energy, but that the main challenge is creating an enabling environment, including an appropriate legal framework.

PLENARY SESSION 1: DEFINING AND MEASURING ENERGY ACCESS

On Tuesday afternoon, the first plenary session was held. It was moderated by Anders Wijkman, Vice Chairman, Tällberg Foundation, who outlined three challenges for addressing the energy access issue: defining the goal; establishing monitoring systems; and providing the necessary funding for the energy access agenda.

Leena Srivastava, Executive Director, The Energy and Resources Institute (TERI), described a study of 31,000 rural households in India, which assessed, among other things, the income, poverty and normative energy consumption of these households. She outlined that some of the households that fell below the poverty line had a fairly high level of energy consumption. She noted, however, that a large part of the energy consumption was in the form of biomass and firewood, which although available free of monetary cost, comes with a large opportunity cost in terms of health and the economy's natural resource base. Srivastava highlighted that with regard to energy access, the issue therefore is not simply having access to energy, but the quality, reliability and environmental-friendliness of the energy.

Jose Almendras, Secretary of Energy of the Philippines, said that although it may be possible to agree on a definition of energy access, such a definition cannot be "one-size-fits-all," but must allow for individual, local, national and regional variables. He noted that in the Philippines the percentage of households with access to energy is the indicator used to measure energy access, and reported that 73% of households are connected to some sort of energy source, whether grid or off-grid.

Abeeku Brew-Hammond, Associate Professor, Kwame Nkrumah University of Science and Technology, Ghana, underscored the need for simplicity in defining energy access, saying that a simple definition would be easier to identify with and operationalize. He cited the household definition used by the Philippines, in terms of how many people have access to modern energy sources, as one of the most operational and accessible definitions. Noting that necessary data is not always available, he said distance from modern energy sources such as a grid or a liquefied petroleum gas (LPG) distribution center, can also be adopted as a definition.

Simon Trace, CEO, Practical Action, outlined his organization's "Poor People's Energy Outlook 2010" report, which sought to highlight poor peoples' views of energy access. He indicated that for most poor people the key issue is access to energy services such as cooking and lighting, and concluded that this provides a better picture of the meaning of energy access.

Thomas Johansson, Co-Chair, GEA Executive Committee, highlighted that development and human wellbeing require energy services, and that energy services require an energy carrier and a device that uses the carrier to provide the energy services. He outlined that in the GEA, energy access refers to access to modern forms of energy, such as for electricity and cooking.

Michael Liebreich, Head, Bloomberg New Energy Finance, commented on the definition and measurement of energy access, asserting that the problem was multi-faceted and

complex. Stressing that it would be impossible to capture all the data in one metric, he suggested developing an index instead.

In the ensuing discussion, Brew-Hammond called for multiple metrics as a necessary condition, and explained that the call for simplicity is because of the complexity of building a hierarchy of indicators. He said it is important for major actors to agree on a common monitoring metric. Liebreich stressed the need for sound policies, stating that investment is driven by good policies, not by a “needs metric.” Almendras recalled that about 27% of the global population does not have energy access and called for a practical solution to the problem. Wijkman noted that no clear definition could be identified during the session and suggested starting with basic parameters, after which more complex versions could follow.

PLENARY SESSION 2: GOALS AND TARGETS FOR ENERGY ACCESS

On Tuesday afternoon, Tariq Banuri, Director, Division for Sustainable Development, UN Department of Economic and Social Affairs, moderated this session, noting the need to “blend” various issues relating to energy access, including high and low affordability, high and low cost, and different levels of risk.

John Christensen, Head, UN Environment Programme (UNEP) Risoe Centre, called for including formalized global energy targets in the Rio+20 process, noting that energy was only a marginal issue in the original Rio process. He outlined the need to facilitate enhanced funding, operate at the national level, and involve local communities. He underscored that to stimulate sustained energy access there is a need to focus on households and social development, as well as on sustainable economic development.

Vijay Modi, Professor, the Earth Institute, Columbia University, described a survey of energy consumption in 300 households in 10 sub-Saharan African countries. He said the survey assessed what these households spend on electricity substitutes such as kerosene, candles, firewood and charcoal, and showed that even without electricity people spent about US\$2 a month on these substitutes. Modi highlighted that the key issue was that the households surveyed were able to pay for these substitutes in small, incremental amounts. He then reported on a model developed and deployed as a pilot and learning tool for improving energy access, which involves small solar systems that customers pay to access using their mobile phones and scratch cards. He highlighted that this captures the flexibility of being able to pay small amounts at a time and concluded that energy access should not simply be considered in terms of people having or not having access to energy, but in terms of them having access when and in the form they want it.

Leslie Cordes, Interim Executive Director, Global Alliance for Clean Cookstoves, noted that despite the gravity of the problem of lack of access to household energy, very little attention has so far been paid to it. She highlighted the lack of a coordinated approach, as well as the absence of funding to find solutions. Cordes described the Global Alliance’s goal, which calls for 100 million homes to adopt clean and efficient stoves and fuels by 2020.

Douglas Gardner, Deputy Assistant Administrator, UNDP, said countries’ uniqueness and differences must be considered when setting and implementing global goals, including for energy. He supported measuring and monitoring the achievement of goals and targets, and ensuring that countries have the capacity to undertake such activities. Noting that the target date for achieving the current MDGs is 2015, Gardner emphasized the need for energy to feature in a “MDGs 2.0” as a key “arrow” for hitting the targets of improving lives and using the planet sustainably.

Manfred Konukiewicz, Commissioner for Climate Policy, Federal Ministry for Economic Cooperation and Development, Germany, stated that: many donor governments are realizing that the MDGs will not be achieved: the political impact of this realization is negative and de-motivating; and he would not, for instance, be able to commit his government to a “MDGs 2.0” framework. He highlighted lessons learned from the current MDGs, including that, as long as poverty persists, none of the MDGs will be achievable, and that there is a need to stimulate green growth in developing countries in order not to lose all the progress made so far.

Franz Fischler, former European Union Commissioner for Agriculture, Rural Development and Fisheries, and President, Eco Social Forum, Europe, questioned whether a global energy goal is realistic and called for different types of goals for different energy sources, and different targets for different countries.

In the discussion that followed, participants commented on various issues, including the usefulness of the MDGs. Gardner said although some elements work and turnaround is possible, global numbers mask regional differences. Modi called for scaling up innovations, but said small countries remain small markets because they cannot reduce the cost of energy independently.

Reflecting on the discussions, Banuri concluded that there is a clear emphasis on energy access and an interest in goals, not as a panacea but as a serious commitment.

PLENARY SESSION 3: RENEWABLE ENERGY AND ITS POTENTIAL FOR ENERGY ACCESS

This session was held on Wednesday morning and moderated by Adnan Amin, Director General, International Renewable Energy Agency (IRENA).

Christine Lins, Secretary General, European Renewable Energy Council, said that promoting renewable energy is a matter of political will to provide the necessary instruments and infrastructure. She highlighted the need for a stable long-term policy framework, a carbon price, energy efficiency, awareness raising, low renewable energy prices, and comparable subsidies for fossil fuels and renewable energy.

Michael Ngako Tomdio, Minister of Energy and Water Resources, Cameroon, underscored that energy access is about job creation, national security, better health and improved livelihoods. He stressed that although Cameroon has huge hydro and other resource potential, it needs investment to extract these resources, supply the infrastructure and disseminate the electricity to the people.

Deepak Gupta, Secretary, Ministry of New and Renewable Energy, India, outlined innovations in rural India for improving energy access, including the development of a renewable energy grid by 200 villages using rice husk. He suggested the creation of a global access fund that would provide financing for entrepreneurs and determine the best distribution of renewable energy.

Grzegorz Wisniewski, President, Institute for Renewable Energy, Poland, said that Poland's problem is not so much one of access to energy, but of which alternatives to include in the energy mix. He explained that although Poland can produce small-scale wind and biomass energy plants to provide electricity to rural areas, the crucial question is how to meet the huge demand in urban centers. He suggested that this can be done using natural gas.

Stefan Flthmann, Director of Climate and Energy, Greenpeace, said the focus of efforts to achieve energy access should be on the potential of renewable energy as a development prospect, because this would be suitable for decentralized systems and be more competitive. He emphasized the need to create more reliable energy sources and called for national policies to encourage community ownership of micro-energy grids.

Jorge Samek, Director-General, Itaipu, presented Brazil as a model of renewable energy use, explaining that 90% of Brazil's energy is supplied using renewables, in the form of hydropower. He gave two other examples of renewable energy promotion: small producers of energy using animal residue; and a joint hydro project with Paraguay, which produces 80% of that country's power supply.

Ulrich Wagner, Director, Energy and Transport, Deutsche Luft- und Raumfahrt, underscored the need to consider how much society is willing to pay for new energy solutions. Pointing out that the switch to renewable energy will come at a cost, he said this cost must be made clear to the public, stressing that renewable energy uptake does not just require appropriate technologies, but also public acceptance.

In the subsequent discussion, one participant said that although there is a future for hydro energy, this should be limited to small hydro plants, stressing that large hydro plants have negative impacts on the environment and local communities. Participants also commented on the need for regional integration, cooperation, and respect for indigenous peoples' rights. Responding to a comment about the need to ensure environmental protection in the search for universal energy access, Tomdio called for solutions that ensure a balance between both, underscoring that he has a responsibility to meet the needs of the poor in his country.

PLENARY SESSION 4: A NEW GLOBAL AGENDA FOR THE 21ST CENTURY

On Wednesday morning, Dan Arvizu, Director and Chief Executive, National Renewable Energy Laboratory, US Department of Energy, moderated this session. He opened the discussion by recalling the issues under consideration, including energy access, communication and investments.

Issa Bashari Mohamed, Minister of Science and Technology, Sudan, emphasized the multiple benefits of renewable energy, especially in the context of the threat of climate change. He

highlighted the impact climate change will have on agricultural practices and living conditions in his country, and explained that energy efficiency practices will reduce carbon emissions, create jobs and reduce health risks.

Robert Corell, Principal, Global Environment and Technology Foundation, called for simultaneous solutions to multiple demands such as poverty, energy access and pollution, which form the axis between policies addressing social wellbeing, and climate change and energy. He said there is a "window of opportunity" to meet these multiple demands through development of renewable energy systems.

Arnulf Grübler, Acting Program Leader and Research Scholar, New Technologies Program, IIASA, identified urbanization as a problem for energy access and said one of the challenges of addressing energy access in urban areas is speeding up the policy formulation process. He suggested that the process should allow for more stakeholder participation, underscoring that this implies a need for sound participatory policies.

Mark Jaccard, Professor, Energy and Materials Research Group, Simon Fraser University, said decision-making processes have flaws, such as politicians' dependence on voter support. He said a lesson from California's model is that independent institutions like the Air Resources Board, and strong regulations, enable politicians to reach their renewable energy targets.

David Rodgers, Senior Energy Specialist, Climate Change and Chemicals, GEF, outlined some obstacles to energy efficiency, such as: the separation of capital budget from operating budgets; the high cost of energy-efficient equipment; policies for utilities that encourage consumption; and industrial concerns that revolve around productivity.

In the subsequent discussion, several participants highlighted the importance of creating incentives, such as feed-in tariffs, that will encourage the private sector to invest in clean energy initiatives. One participant called for an international convention on clean energy access that would provide opportunities and create incentives for developed and developing country entities to cooperate on clean energy investments. Corell stressed that incentives must be one of the fundamental aspects of any action taken with regard to energy access and Mohamed said that instead of giving aid to developing countries, developed countries should use the aid funds to incentivize their own industries to invest in developing countries.

ROUNDTABLE 1: CONCRETE ENERGY ACTION TO ADDRESS CLIMATE CHANGE

On Wednesday afternoon, IPCC Secretary Renate Christ provided an overview of the climate change problem and the possible role of renewable energy in mitigating climate change. She explained that to achieve the goal of limiting temperature rise to 2°C, atmospheric greenhouse gas concentrations must remain below 450 parts per million (ppm). She outlined that fossil fuels currently dominate the global energy system, with renewables only contributing 12.9% of total primary energy supply. Christ further explained that although fossil fuel resources and reserves are abundant, the global technological potential for renewable energy is substantially higher than

current and projected energy demand and renewable energy sources have low carbon dioxide emissions relative to fossil fuels. She added that policy initiatives are needed to bring down the cost of renewable energy.

N. H. Ravindranath, Chair, Climate Change, Scientific and Technical Advisory Panel, GEF, highlighted that climate change impacts are already visible and that future impacts are likely to be more serious than projected by the IPCC. He urged transformational change and stressed that minor, isolated adjustments will not suffice. Ravindranath proposed rapid de-carbonization of the energy sector, reduction of emissions from the forestry sector, and a shift to a low-carbon development path.

Katia Simeonova, Manager, Reporting, Data and Analysis Programme, UNFCCC Secretariat, highlighted some expectations for the Durban Climate Change Conference in late 2011, including: resolution of the issue of the continuation of the Kyoto Protocol in the context of the broader discussion of the implementation of the Cancun Agreements; agreement on a global mitigation framework comprising mitigation targets for developed countries and mitigation actions for developing countries; increase in the level of ambition of mitigation efforts; and significant progress on the Green Climate Fund, the Technology Mechanism and the Adaptation Committee.

Dilip Barua, Minister for Industries, Bangladesh, identified the biggest energy challenge as increasing access to affordable, modern energy services without negatively impacting on the environment, and highlighted the importance of renewable energy for achieving this. He outlined some renewable energy policies put in place by his government and aimed at providing renewable energy to rural communities, including a renewable energy target of 5% of total power generation by 2015 and 10% by 2020, and a tax exemption for solar energy production.

Rohit Khanna, Program Manager, ESMAP, World Bank, explained that there are different tools and approaches for moving countries to a low-carbon development pathway, but that most countries have adopted a combination of two: a top-down analysis of the macro-economic effects of climate change mitigation measures on different parts of the economy, such as trade and gross domestic product; and a bottom-up analysis to model different development scenarios, including their costs and benefits. He said this combination has been effective in helping policymakers sort through policy options and stakeholder interests to decide on what actions to take, and emphasized that such a transparent, stakeholder consensus-building analytical framework is key to mobilizing finance and building a country-driven approach.

Vincent Kitio, Chair, UN-Energy Africa and Chief, Urban Energy Section, UN-HABITAT, noted that urbanization is occurring rapidly in developing countries, but that this urbanization is not linked to industrialization, but is happening because of the search for better living conditions. He highlighted the large contribution of cities to the climate change problem and urged that addressing climate change must start from cities. He said UN-HABITAT is taking various actions in this regard, including: developing a strategy focused on adaptation and mitigation measures; conducting

climate change vulnerability assessments in coastal areas; and exploring ways to promote solar water heaters and waste-to-energy schemes.

Christian Stoffaes, General Engineer, Ministry of Economy, Industry and Employment, France, described a mechanism being promoted by the French Government—the clean energy access mechanism—which focuses on access to electricity through renewable sources. He explained that the mechanism seeks to help bridge the financing/entrepreneurial gap, is intended to take the form of an international treaty within the framework of the UNFCCC; and will be based on the feed-in tariff concept.

In the subsequent discussion, one participant noted that feed-in tariffs are only useful at the end of the production cycle, and said they should be complemented with credit for the startup phase. Another participant highlighted the role local investors can play in promoting energy access, stating there was too much emphasis on foreign investors. Ravindranath said there was no conflict between addressing climate change and ensuring energy access for all.

ROUNDTABLE 2: PATHWAYS TO SUSTAINABLE ENERGY SYSTEMS

On Wednesday afternoon, Albrecht Reuter, Scientific Director, Energy Talks Ossiach, Austria, moderated the roundtable discussion on the pathways to sustainable energy systems.

Alexey Makushkin, Director, Analytical Center for the Government of the Russian Federation, focused on sustainable ownership and highlighted the need to understand the timeframes within which renewables would become sustainable. He lamented the lack of an investment focus and noted the Russian Federation's search for cooperative opportunities with emerging economies. He urged a focus on energy imports and exports, as well as on an improved definition of sustainability.

Umesh Chandra, CEO, Signature Group (Private Equity), said sustainable energy systems have some shared characteristics, such as reliability, quality, technology spread and the strength of supporting infrastructure. He said the key challenges are reach, coverage, weak infrastructures and environmental degradation, and called for countries to put policies in place to enable energy sustainability.

Lars Josefsson, former President and CEO, Vattenfall AB, argued that the lag in development of renewable energy technologies, like wind and solar technologies, can be filled by the sustainable use of biomass. He stressed that the main challenges of unsustainability and biodiversity loss should be addressed through certification systems.

Alexander Mueller, Assistant Director General, Food and Agriculture Organization of the UN, presented on the Global Bioenergy Partnership, explaining that it recently agreed on a set of indicators, consisting of environmental, social and economic indicators. He called for upfront investment and financial commitment to enable countries to start programmes and build institutions that would help transform them to a green economy.

Anand Patwardhan, Visiting Professor at Duke University and Senior Faculty Member, School of Management, Indian Institute of Technology, said the compatibility of social goals

and sustainable energy systems is a multi-dimensional issue that requires multiple solutions. He suggested that the focus should be on supply and recognition of different entry points.

Hans-Holger Rogner, Section Head, Planning and Economics Studies Section, Department of Nuclear Energy, International Atomic Energy Agency, acknowledged that it would be difficult for nuclear energy to become socially acceptable, but that comparison to other forms of energy becomes easier when indicators are used. He said that for nuclear power to become part of the renewables trajectory, a lot of work is required in terms of safety measures.

Speaking on behalf of Mark Radka, Chief, Energy Branch, UNEP, John Christensen said a connection between society and energy is the essence of sustainability. He underscored that although technologies have become more appropriate, populations have grown, and only adequate political will at the national and international levels can meet the shortfall.

In the ensuing discussion, parties discussed various issues, including the growth of energy demand and ways of meeting it. Mueller stressed the need for greater efficiency and upfront investments. Panelists agreed that political will would accelerate momentum for investing in energy access and highlighted the importance of regional cooperation and a global change of lifestyle in this regard.

ROUNDTABLE 3: ROLE OF ENERGY EFFICIENCY FOR PRODUCTIVE USES

On Wednesday afternoon, Marianne Moscoso-Osterkorn, Director General, Renewable Energy & Energy Efficiency Partnership, moderated this roundtable. Robert Ayres, INSEAD Emeritus Professor of Economics and Political Science and Technology Management, said energy efficiency is not just a partial solution to addressing climate change or creating jobs, but is also a primary driver of economic growth, because higher efficiency will result in lower prices and increased demand. He outlined steps needed to promote energy efficiency, including: providing better education and increased understanding; subsidizing renewables for a specific period of time; ending energy consumption subsidies; encouraging car-sharing and use of public transport and bicycles; and having product standards and taxes that reflect the costs of externalities.

Diana Urge-Vorsatz, Professor and Director, Center for Climate Change and Sustainable Energy Policy, Central European University, highlighted the co-benefits of energy efficiency, such as energy security, employment, improved social welfare, poverty alleviation and improved health. She gave the example of retrofitting old buildings in Hungary and said this has reduced winter peak energy imports by 59% and will create over 140,000 jobs.

Mark Hopkins, Energy Efficiency Expert, UN Foundation, underlined the need to increase global energy productivity by at least 40%, stressing that “energy efficiency is the path to energy access,” because if the amount of energy wasted is reduced, the amount of energy available for use will increase. He said the key is getting the rules right so that markets can open up and energy efficiency investments can increase, and noted the important role the UN system can play in this regard by, for instance, establishing norms of energy productivity.

Philippe Niyongabo, Head of Energy Division, Department of Infrastructure and Energy, African Commission, noted that whenever there is a deficit in energy production or consumption, the first reaction of policymakers and utilities is to consider investing in new capacity. Pointing out the time and money this would involve, he said a better solution would be to invest in energy efficiency measures, which have much quicker returns.

Ajay Mathur, Director General, Bureau of Energy Efficiency, Ministry of Power, India, described his country’s Perform, Achieve and Trade scheme, a market-based mechanism designed to enhance industrial energy efficiency. He explained that the scheme focuses on plants in seven sectors, which together account for about 40% of total energy consumption, and sets energy efficiency targets for all these plants. He explained further that the plants that exceed their efficiency targets can sell their excess energy permits to those plants that are either unable to meet their targets or that find it more cost-efficient to buy permits than to reduce their energy consumption.

Mauro Battocchi, Head, International Institutional Affairs, ENEL, described Italy’s smart metering for energy efficiency initiative. He explained that about 36 million smart meters have been installed in Italian households, which allow customers to receive time-of-day pricing, meaning consumers can choose to consume energy when the most efficient plants are being used and the price of energy is lower. Battocchi outlined the benefits of these, including cost savings for consumers, and also for companies through reduced operational costs and commercial losses.

Scott Foster, Director, Sustainable Energy Division, UN Economic Commission for Europe, discussed options for financing energy efficiency. He described the Financing Energy Efficiency Investments for Climate Change Mitigation project, developed to assist target countries to enhance their energy efficiency and reduce fuel poverty. He explained that the project, *inter alia*: helps these countries strengthen their policy frameworks; builds their capacity; and promotes energy efficiency investments through an investment fund.

In the subsequent discussion, participants commented on these presentations, highlighting: the rebound effect, which is the risk of increased energy consumption as a result of increased efficiency and lower cost; and the use of market mechanisms for energy efficiency improvements and financing.

ROUNDTABLE 4: LOW CARBON TRANSFORMATIONAL TECHNOLOGIES

On Wednesday afternoon, the roundtable discussion on low carbon transformational technologies was moderated by Pradeep Monga, Director, Energy and Climate Change Branch, UNIDO.

Heleen de Coninck, Programme Manager, Energy Research Centre, the Netherlands, described carbon capture and storage (CCS), saying its most important use is to reduce carbon dioxide emissions. She cited the main challenges of CCS as limited storage capacity, cost, risk of leakage, legal framework, deleterious environmental impacts and negative public perception.

Lakshman Guruswamy, Nicholas Doman Professor of International Environmental Law and Director of the Center for Energy and Environmental Security, University of Colorado Law School, presented on appropriate sustainable technologies as an interim solution for populations which currently do not have energy access. He suggested utilizing diverse technologies and fusing existing traditional technologies with modern renewable technologies.

Heng Liu, Director General, International Center on Small Hydro Power, identified the use of small hydro power plants as a viable renewable energy solution and described it as one of China's most successful energy applications. He said small hydro power plants are especially appropriate in remote rural areas and are mostly a clean and affordable transformational technology.

Mustafa Hatipoglu, Managing Director, International Centre for Hydrogen Energy Technologies, UNIDO (UNIDO-ICHET), introduced the hydrogen energy technologies developed by UNIDO-ICHET. He stated that although hydrogen is not regarded as a primary energy source, it has the potential to address issues such as efficient energy conversion and has been demonstrated in many applications like cars, locomotives and engines. He said the major issues that need to be addressed are infrastructure, durability and cost.

Slavtcho Neykov, Director, Energy Community Secretariat, Austria, recalled security concerns over energy supply and climate change, and suggested that timing, legal issues and funding are the three main challenges for renewable energy technologies. He explained that the most immediate need is to find the US\$10.5-11.5 trillion needed to address energy needs between 2011 and 2030.

Keywan Riahi, Acting Program Leader of the Energy Program, IIASA, called for greater integration in technology policies, which previously separated climate change issues from energy access and security. He concluded that changing policy design and scaling-up research and development portfolios are critical.

Štefan Bogdan Šalej, Director-General, International Center for Promotion of Enterprises, spoke about selected global indicators and said low carbon technologies require funding, which is a political problem. He underscored the key role of government institutions in developing these technologies.

During the ensuing discussion, some participants commented on the practical aspects of how much energy is produced using renewable energy sources, especially hydrogen power. Panelists concluded that technology transfer is about the capacity to innovate and develop, which many developing countries lack.

PLENARY SESSION 5: FINANCING UNIVERSAL ENERGY ACCESS

On Wednesday afternoon, Vijay Iyer, Director, Sustainable Energy Department, World Bank, moderated the plenary session, repeating the call to "green" the energy mix and applauding the fact that some financial institutions have substantially increased their commitment to energy projects.

Faris Hasan, Director of Corporate Planning and Economic Services, OFID, said the main financing challenges are the funding to mobilize economic growth, better service and an expanding population. He outlined the building blocks of

effective and sustainable leadership, local resource provision, assistance by development finance institutions to collaborate, leverage and diversify, and involvement of the private sector.

Naoki Sakai, Senior Climate Change Specialist, Asian Development Bank, described how the Bank supported solar energy access in India by helping the country introduce a solar development plan. He explained that this included addressing issues of private sector market development, which focused on filling information gaps, developing business models, and government capacity development, including policy development and technology transfer.

Valentin Zongo, Division Manager, African Development Bank, noted that Africa is very diverse in the energy sector, and that conflict has been one of the fundamental reasons for the lack of growth in energy infrastructure. He explained that the Bank now supports a number of key areas, including: improving the business environment by including the private sector; focusing on public utilities that are the backbone of development; and improving the capacity to plan, especially at the regional level, where assistance is most needed.

Dimitrios Zevgolis, Climate Change Specialist, GEF, described GEF's experience financing energy access and outlined lessons learned, including: using appropriate technologies for appropriate uses; involving non-energy authorities; and ensuring community participation, not just at the project implementation stage, but also at the project development stage. He added that microcredit schemes are critical, projects should not rely on possible reallocation of subsidies, flexible repayment plans are needed to accommodate volatile market conditions, and cross-sectoral projects are more cost-effective.

Richenda Van Leeuwen, Senior Director, Energy and Climate Team, UN Foundation, noted the 2010 World Energy Outlook's finding that universal electrification will be achieved through 30% grid extension and 70% micro-grids and decentralized solutions. She said this constitutes a huge opportunity from a business standpoint. She highlighted some promising areas, such as: enabling mobile payment technologies for renewable energy transactions for the poor; using remittances from the diaspora for the purchase of clean energy solutions within countries; and working with non-energy companies, such as information technology providers.

In the subsequent discussion, one participant commented on the need for universal access funds through which money can be collected and used within countries to enhance energy access, thereby making it unnecessary to involve multilateral institutions. Other participants noted that in some countries, consumers can also provide financing for energy access and that some countries are also establishing funds to promote energy access. Another participant commented on the gap between available financing and financing required for achieving universal energy access.

ROUNDTABLE 5: ADDRESSING BASIC RURAL ELECTRIFICATION NEEDS IN A REGIONAL CONTEXT

Irene Freudenschuss-Reichl, Director General, Austrian Development Cooperation, Austrian Federal Ministry for European and International Affairs, moderated this session on Thursday morning. The session commenced with a video message from Michelle Bachelet, UN Under-Secretary-

General and Executive Director UN Women, in which she emphasized the role of energy access in the economic empowerment of rural women. She said women tend to be more environmentally-aware and responsible in energy use, and that renewable energy can provide a window to the outside world, via the internet and media, for those women trapped in remote, poverty-stricken areas.

Victorio Oxilia, Executive Secretary, Latin American Energy Organization (OLADE), said his organization was established to help integrate the region's energy systems, recalling that the region already has the cleanest energy markets. He identified poverty reduction in rural areas and the urban exodus as the focus of OLADE's efforts, and stressed that rural electrification is critical.

Mahama Kappiah, Executive Director, ECREEE, outlined some initiatives to prioritize renewable energy as a tool for poverty alleviation. He said West African countries unhampered by conflict have committed to several solar, hydro, wind, biomass and waste energy projects to increase their renewable energy penetration by 2020, and emphasized the importance of regional cooperation initiatives.

Achille Bassilekin III, Assistant Secretary General, ACP, described the efforts of the General ACP Secretariat in supporting 74 projects across the region for the transfer of biomass and wind technologies. He explained that the ACP Secretariat focuses on creating participatory mechanisms and enabling transformation to renewable energy technologies. He identified aid from European financial institutions and appropriate institutional infrastructures as critical.

Sameer Hajee, Founder and CEO, Nuru Energy, outlined his company's efforts to address the low-power energy needs of two million people in rural Rwanda by eliminating kerosene use and providing inexpensive light kits designed to use solar energy and human pedaling power. He said his organization has enabled local entrepreneurs to establish businesses while also providing a renewable energy source.

Minoru Takada, Manager, Sustainable Energy Programme, UNDP, called for international financial assistance to support specific projects and to help developing country governments drive the direction of energy transformation. He emphasized the need for bold action such as the development of frameworks and integrated plans.

During the ensuing discussion, several participants commented on the specifics of access definition, financing and cost. Some agreed that once the initial cost of energy access has been financed, renewable energy makes economic sense. Several participants also highlighted that financial institutions should be encouraged to reserve a part of their finance as risk capital.

ROUNDTABLE 6: PARTNERSHIPS FOR FINANCING

On Thursday morning, Ged Davis, Co-President of the Global Energy Assessment (GEA), moderated the roundtable discussion on partnerships for financing, highlighting the need for financing support for energy access. Jose Almendras, Secretary of Energy of the Philippines, said separate financing and innovation models are required for centralized and decentralized energy systems, and described his country's experience with both. For centralized systems, he said this is

funded in two ways: private electricity generators are required to put aside a portion of their profits for a fund used to expand the national grid; and the government also makes direct allocation from its budget for rural grid electrification. For decentralized systems, he stressed that this is not as attractive to investors as centralized systems and that the government therefore plays a bigger role by providing more resources that are disbursed through local government structures.

Elizabeth Dipuo Peters, South Africa's Minister of Energy, outlined various initiatives funded by the South African Government to provide energy access, such as the government's free basic electricity policy, under which it provides a specific amount of electricity free-of-charge to poor households. She added that more resources are needed to accelerate free basic alternative energy access for remote areas where grid connection is difficult.

Deepak Gupta, Secretary, Ministry of New and Renewable Energy, India, called for innovative financing approaches to reduce the high costs of financing energy access. He noted that the private sector is usually reluctant to invest in off-grid energy services because of higher transaction costs, higher perceived risks of non-payment and lack of collateral. He highlighted the need for an energy access fund that would help leverage funds at reduced costs. Gupta gave the example of energy for cooking and said this requires a direct subsidy, as the poorest people usually lack the ability to pay for the service.

Robert Kreimerman, Minister of Industry, Energy and Mining, Uruguay, described the investment and financing mechanisms used in his country, such as: an innovation fund financed by oil companies and the National Agency for Research and Innovation; allocation of specific funds from the national budget to provide electricity access through grid connection for all Uruguayans; and a social tax.

Márcio Zimmermann, Deputy Minister, Ministry of Mines and Energy, Brazil, underscored the difficulty of extending the grid network, noting that some areas, particularly remote areas, need off-grid access. He stressed that universal energy access cannot be achieved using market rules alone, but requires new forms of financing that take account of the needs of the poor.

CLOSING PLENARY: THE WAY FORWARD: GLOBAL ENERGY GOALS

The closing plenary took place on Thursday morning, 23 June. Carsten Staur, Ambassador, Permanent Representative of Denmark to the UN, summarized the Ministerial Meeting on Energy and Green Industry, which was held in parallel with the Forum. He said the 2030 energy goals of universal access, energy intensity reduction of 40% and a global energy mix of 30% renewables, were reaffirmed. He reported that ministers also saw the need for government support, growth of the energy sector, good governance and institutional frameworks, and financial empowerment of the local populations. He further indicated that ministers had welcomed the priority that the UN is giving to renewable energy through the launch of a global campaign to raise awareness ahead of the Rio+20 Conference.

Irene Freudenschuss-Reichl and Nebojsa Nakicenovic, Deputy Director, IIASA, then summarized the discussions that had taken place during the Vienna Energy Forum. They noted

that although there had been considerable discussion on the definition of energy access and several operational definitions had been proposed, it was agreed that a portfolio of approaches is required, with different options for different areas. They remarked that energy access is about poverty alleviation, and that although targets are important, enabling energy access requires local, national and international actions, such as appropriate policies, sustainable financing instruments, and regional and global cooperation. They further indicated that climate change issues should not slow down the energy access agenda, highlighting that they are complementary and require integrated actions.

Freudenschuss-Reichl and Nakicenovic noted that energy efficiency improvements are cost-effective but require up-front investments, integrated and inter-sectoral approaches, and new policies. They also echoed the general consensus that the three energy goals for 2030 are feasible and are not so much technological problems as issues requiring political will. They emphasized that reaching the goals requires: transformation of energy systems: aspiring to achieve affordable, safe, secure and sustainable energy services; and recognizing that current energy systems are unsustainable.

In his closing statement, UNIDO Director-General Kandeh Yumkella noted that the 2030 energy goals of universal access, energy intensity reduction and a global renewable energy mix have been given more substance and expanded on by participants, and are now gaining momentum. He suggested that the energy revolution is launching another industrial revolution, one which will bring individual freedom and dignity. He thanked all participants for their contributions to the Forum and all UNIDO staff for their hard work. Thanking Kandeh Yumkella for his work, Irene Freudenschuss-Reichl closed the meeting at 12:20pm.

UPCOMING MEETINGS

High-Level Africa Consultative Forum on Renewable Energy: Convened by IRENA, this meeting will focus on the specific implementation challenges facing Africa with respect to renewable energy technologies, as well as practical approaches to generate the critical policy and technical information, advice and capacity required to support renewable energy deployment in Africa. **dates:** 8-9 July 2011 **location:** Abu Dhabi, United Arab Emirates (UAE) **contact:** Mahenau Agha **phone:** +971-2-417-9062 **email:** magha@irena.org **www:** <http://www.irena.org/menu/index.aspx?mnu=Subcat&PriMenuID=30&CatID=79&SubcatID=105>

Inter-American Dialogue on Financing Low-Carbon Electricity: This Dialogue aims to encourage debate and share perspectives and experiences in investment policies and regulatory frameworks for electricity generation projects with low-carbon emissions. **dates:** 22-24 August 2011 **venue:** ECLAC Headquarters **location:** Santiago, Chile **contact:** Federico Bernardelli **phone:** +56-2-210-2182 **email:** federico.bernardelli@cepal.org **www:** <http://www.eclac.cl/noticias/calendarioactividades/default.asp?idioma=IN&mes=8&agno=2011>

Third Meeting of the Group of Experts on Global Energy Efficiency: The Group of Experts will continue work on the Global Strategy for Energy Efficiency Market Formation. **dates:** 17-18 October 2011 **location:** Geneva, Switzerland **contact:** Viktor Badaker, Project Manager GEE21 **phone:** +41 (0)22 917 2443 **email:** viktor.badaker@unece.org **www:** http://www.unece.org/energy/welcome/Calendar_Meeting.html

Caribbean Renewable Energy Forum 2011: This annual event, co-sponsored by the Inter-American Development Bank, the Caribbean Community, and the Organization of American States, will look at policy and regulatory issues and the forces driving finance and investment in renewable energy sources in the Caribbean context, and the scope for a regional approach. **dates:** 12-14 October 2011 **location:** Bridgetown, Barbados **contact:** Matthew Perks **phone:** +1-845-440-7800 **email:** mperks@caribbeanenergyforum.com **www:** <http://www.caribbeanenergyforum.com>

Second IEF-OFID Symposium on Energy Poverty: Hosted by the Government of Venezuela, this event will focus on the multifaceted issue of "Global Initiatives and Regional Cooperation to Eradicate Energy Poverty." **dates:** 15-16 November 2011 **location:** Caracas, Venezuela **contact:** Carole Connor, IEF Secretariat **phone:** + 966-1-481-0022 ext. 305 **fax:** + 966-1-481-0055 ext. 305 **email:** carole.connor@ief.org **www:** www.ief.org

First Global Green Growth Forum: Dedicated to pioneering and diffusing a new model of economic growth, known as "green growth," this event aims to address the key aspects of economic performance, such as poverty reduction, job creation and social inclusion. **dates:** 11-12 October 2011 **location:** Copenhagen, Denmark **contact:** GGGI Copenhagen Office **phone:** +45-4-677 -5104 **fax:** +45-4-677-5108 **www:** <http://gggi.org/event/2011/10/11/copenhagen/first-global-green-growth-forum>

UNFCCC COP 17 and COP/MOP 7: The 17th session of the UNFCCC Conference of the Parties (COP 17) and the seventh session of the Meeting of the Parties to the Kyoto Protocol (COP/MOP 7) will take place in Durban, South Africa. **dates:** 28 November-9 December 2011 **location:** Durban, South Africa **contact:** UNFCCC Secretariat **phone:** +49-228-815-1000 **fax:** +49-228-815-1999 **email:** secretariat@unfccc.int **www:** <http://unfccc.int/>

International Year for Sustainable Energy for All: In December 2010, the UN General Assembly adopted a resolution proclaiming 2012 as the "International Year for Sustainable Energy for All" (Resolution 65/151), aimed at creating "an enabling environment for the promotion and use of new and renewable energy technologies, including measures to improve access to such technologies." **date:** year-round **location:** worldwide **www:** http://www.un.org/ga/search/view_doc.asp?symbol=A/65/436

WFES-5: The fifth World Future Energy Summit (WFES-5) will promote innovation and investment opportunities surrounding alternative energy, clean technology and environment. **dates:** 16-19 January 2012 **location:** Abu Dhabi, UAE **contact:** Ara Fernezian, WFES Director **phone:** +971-2-4446113 **fax:** +971-2-444-3768 **email:** ara.fernezian@reedexpo.ae **www:** <http://www.worldfutureenergysummit.com>