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# World Future Energy Summit Bulletin

## A Daily Report of the World Future Energy Summit (WFES) 2011

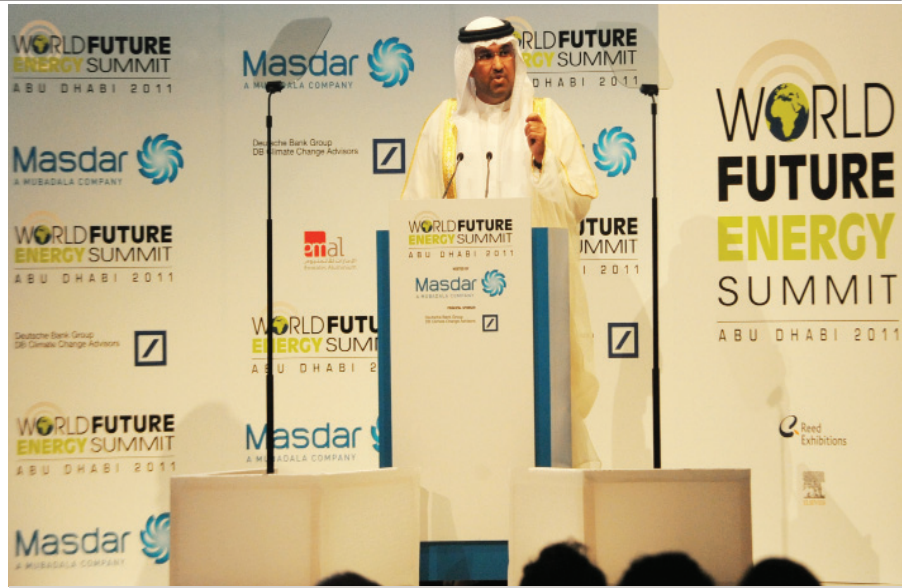
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### WORLD FUTURE ENERGY SUMMIT 2011 HIGHLIGHTS: MONDAY, 17 JANUARY 2010

The fourth World Future Energy Summit (WFES) 2011 opened in Abu Dhabi, United Arab Emirates (UAE), on 17 January 2011. The first day of this four-day event was organized around the theme “Policy and Strategy Forum,” and comprised opening statements from HE Sultan Ahmed Al Jaber, CEO Masdar, UN Secretary-General Ban Ki-moon, Heads of State and other dignitaries, followed by special addresses and ministerial panels. The WFES programme also includes roundtable discussions, an exhibition hall and numerous other side events and activities.



Sultan Ahmed Al Jaber, CEO, Masdar, United Arab Emirates

### A BRIEF HISTORY OF MULTILATERAL PROCESSES ON RENEWABLE ENERGY

Renewable energy is emerging as a keystone for addressing climate change, energy security, green growth and poverty reduction. Therefore, there has been an emerging focus in the international dialogue regarding renewables on the need to scale-up sustainable and renewable energy, both regionally and globally. Since the UN Conference on Environment and Development (UNCED) in 1992, in Rio de Janeiro, Brazil, various UN organizations and agencies have been active on this issue, and numerous related international conferences and fora have convened, as summarized below.

### WFES

Since its inception in 2008, WFES has evolved as the world’s foremost annual meeting for the renewable energy and environment industry. Abu Dhabi, UAE, has hosted WFES annually to promote innovation and investment opportunities surrounding renewable energy and environment. WFES represents a business platform bringing together project owners and solution providers with investors and buyers from both the public and private sectors. Held in Abu Dhabi, UAE, from 18-21 January 2010, the third WFES (WFES 3) brought together approximately 25,000 attendees from 148 countries.



Ban Ki-moon, UN Secretary-General, addressed WFES 2011

The *World Future Energy Summit Bulletin* is a publication of the International Institute for Sustainable Development (IISD) <info@iisd.ca>, publishers of the *Earth Negotiations Bulletin* © <enb@iisd.org>. This issue was written and edited by Asheline Appleton, Kate Neville, Miquel Muñoz, Ph.D., Keith Ripley, Lynn Wagner, Ph.D., Liz Willetts, and Simon Wolf. The Photographer is Leila Mead. The Digital Editor is Diego Noguera. The Editor is Leonie Gordon <leonie@iisd.org>. The Director of IISD Reporting Services is Langston James “Kimo” Goree V1 <kimo@iisd.org>. Funding for coverage of this meeting has been provided by Masdar. IISD can be contacted at 161 Portage Avenue East, 6th Floor, Winnipeg, Manitoba R3B 0Y4, Canada; tel: +1-204-958-7700; fax: +1-204-958-7710. The opinions expressed in the *Bulletin* are those of the authors and do not necessarily reflect the views of IISD. Excerpts from the *Bulletin* may be used in other publications with appropriate academic citation. Electronic versions of the *Bulletin* are sent to e-mail distribution lists (in HTML and PDF format) and can be found on the Linkages WWW-server at <http://www.iisd.ca/>. For information on the *Bulletin*, including requests to provide reporting services, contact the Director of IISD Reporting Services at <kimo@iisd.org>, +1-646-536-7556 or 300 East 56th St., 11D, New York, New York 10022, United States of America. The IISD team at WFES 2011 can be contacted by e-mail at <miquel@iisd.org>.

## UN CONFERENCES AND SUMMITS

The international community's first major attempt to develop a strategy for the use of alternative fuels was the 1981 Resolution by the 36th UN General Assembly (UNGA 36) (A/RES/36/193) on the outcomes of the UN Conference on New and Renewable Sources of Energy. UNCED, which met in 1992 in Rio de Janeiro, Brazil, adopted Agenda 21, an action plan for implementing sustainable development. Agenda 21 addresses sustainable energy in Chapter 9, which notes the increasing need to rely on environmentally sound energy systems, particularly new and renewable sources of energy.

In April 2001, in New York, US, the ninth session of the UN Commission on Sustainable Development (CSD 9) adopted Decision (E/CN.17/2001/19) on "Energy for sustainable development," addressing issues such as the role of the private sector, research and development, institutional capacities, financial support, energy accessibility and rural energy. IISD RS coverage of CSD 9 can be found at: <http://www.iisd.ca/csd/csd9/index.html>. The World Summit on Sustainable Development (WSSD), held in August-September 2002 in Johannesburg, South Africa, adopted the Johannesburg Plan of Implementation (JPOI), which addresses renewable energy in several of its chapters, including on poverty eradication (Chapter II), sustainable consumption and production patterns (Chapter III), small island developing States (Chapter VII), and Africa (Chapter VIII). IISD RS coverage of WSSD can be found at: <http://www.iisd.ca/2002/wssd>. Held in New York, US, in May 2007, CSD 15 addressed energy issues, although delegates did not reach consensus on any decisions. IISD RS coverage of CSD 15 can be found at: <http://www.iisd.ca/csd/csd15>. In December 2010, UNGA 65 adopted Resolution 65/151 proclaiming 2012 as the *International Year for Sustainable Energy for All*.

## IREC PROCESS

At the WSSD, German Chancellor Gerhard Schröder invited the international community to a Conference on Renewable Energy. The International Renewable Energy Conference (IREC), "Renewables 2004," took place from 1-4 June 2004, in Bonn, Germany, and launched the series of IREC meetings. The outcomes of the conference led to the creation of the Renewable Energy Network for the 21st Century (REN21). IISD RS coverage of Renewables2004 can be found at: <http://www.iisd.ca/sd/ren2004>. The Beijing International Renewable Energy Conference (BIREC), hosted by China in November 2005, adopted the Beijing Declaration. The Washington International Renewable Energy Conference (WIREC) convened from 4-6 March 2008, in Washington DC, US, and resulted in the Washington International Action Programme, comprising over 100 pledges by countries and organizations. IISD RS coverage of WIREC 2008 can be found at <http://www.iisd.ca/ymb/wirec2008/>. The Delhi International Renewable Energy Conference (DIREC 2010) 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. IISD RS coverage of DIREC 2010 can be found at <http://www.iisd.ca/ymb/energy/direc2010/>.

## IRENA

The International Renewable Energy Agency (IRENA) was established on 26 January 2009. IRENA's statute entered into force on 8 July 2010. As of January 2011, IRENA has 149 signatories and has been ratified by 51 States. The fourth

Preparatory Commission of IRENA met in Abu Dhabi, on 24-25 October, 2010. The first session of the Assembly of IRENA will take place on 4-5 April, 2011, in Abu Dhabi, UAE.

## IPCC SRREN

At its 25th session in Port Louis, Mauritius, the Intergovernmental Panel on Climate Change (IPCC) agreed to hold a scoping meeting for a special report on renewable energy sources. IISD RS coverage of IPCC 25 can be found at: <http://www.iisd.ca/climate/ipcc25/>. This scoping meeting took place in Luebeck, Germany in January 2008, and produced, among other outcomes, an outline for a special report. At IPCC 28, which convened in Budapest in April 2008, delegates agreed to the preparation of a Special Report on Renewable Energy Sources and Climate Change Mitigation (SRREN), to be completed by 2010. The approval of SRREN is scheduled for 5-8 May, 2011, in Abu Dhabi, UAE. IISD RS coverage of IPCC 28 can be found at: <http://www.iisd.ca/climate/ipcc28/>.

## CLEAN ENERGY MINISTERIAL

The Clean Energy Ministerial is a US-convened, high-level global forum to promote policies and programmes that advance clean energy technology. It includes Australia, Brazil, Canada, China, Denmark, the European Commission, Finland, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, Norway, the Russian Federation, South Africa, Spain, Sweden, the UAE, the UK and the US. The first Clean Energy Ministerial met in Washington DC, US, from 19-20 July 2010. The second Clean Energy Ministerial will convene in Abu Dhabi from 6-7 April 2011.

## REPORT OF WFES DAY 1

### OPENING CEREMONY

Describing the WFES as an open global platform, HE Sultan Ahmed Al Jaber, CEO Masdar, underlined that energy solutions cannot be driven by individual countries and must rely on collaboration. On climate policy, he said the most important change in 2010 was the shift to a bottom-up approach to establishing a balanced package of decisions. He encouraged energy efficiency and conservation and fostering competition between different energy industries.

Noting that global energy needs are growing rapidly and more than three billion people rely on traditional biofuels, Ban Ki-moon, UN Secretary-General, called for a clean energy revolution that contributes to reducing poverty, mitigating climate change, empowering women, strengthening economic growth and achieving the Millennium Development Goals



Ólafur Ragnar Grímsson, President of Iceland





HRH Crown Princess Victoria, Princess of Sweden

(MDGs) and global security. He encouraged public and private spending for intellectual capital, suggesting that investment in green economies can provide an opportunity for growth and prosperity in developed and developing countries.

Ólafur Ragnar Grímsson, President of Iceland, said Abu Dhabi is among the global locations chosen to “illustrate our aspirations,” as a venue for promoting a clean energy future. He called for global cooperation on sustainable energy, and stressed that the South has the potential to become the “global leader in this necessary transformation.” Lauding the WFES, he said the Zayed Future Energy Prize has the potential to do for clean energy what “Alfred Nobel did for science and peace.”

Describing the UAE as a model for the future and Masdar its “crowning jewel,” Asif Ali Zardari, President of Pakistan, expressed his confidence that the global community has the courage, dedication and commitment to “modify our environmental indifference.” He said innovation and conservation will “reshape the energy map,” highlighting the role of solar, wind and water. He stressed that failures in energy initiatives, such as ethanol from corn, should not discourage continued innovation and experimentation.

José Sócrates Carvalho Pinto de Sousa, Prime Minister, Portugal, called the Summit “one of the most relevant forums” in the world, adding that energy policies are key to addressing climate change and ensuring economic growth. He said Portugal has achieved success through industry reforms in renewable energy, electric mobility, and through energy

efficiency and smart grid technologies. He emphasized that it is possible to make reforms and achieve results in a very short time.

Highlighting threats to biodiversity and development from climate change, Sheikh Hasina, Prime Minister, Bangladesh, said short-term interests should be overcome. She welcomed the opportunity to renew, at the WFES, the commitment to a green future. Hasina said that, despite its negligible contribution to greenhouse gas (GHG) emissions, Bangladesh is striving for a mixed balance of all energy sources and to be ultimately GHG-free.

Noting that energy challenges are too overwhelming to be addressed by countries individually, Nikoloz Gilauri, Prime Minister, Georgia, welcomed growing global consensus that energy security is deeply linked to diversifying energy sources. He observed that his country is gaining importance on the global energy map through increasing energy exports and transit capacity.

Noting that natural resources are not inexhaustible, Crown Princess Victoria, Sweden, underlined the importance of political will in addressing climate change and other environmental issues. She commended Masdar City as an example of global renewable energy solutions and mentioned that Sweden has the highest share of renewable energy in the EU. She said innovation in products, services and human capital will be necessary to meet long-term challenges but added that adopting appropriate lifestyles is also an important way to “cope” with finite resources.

Supporting the sustainable approach to the management of global resources, Prince Guillaume, Luxembourg, highlighted the right to energy access and the role energy policy can play in lifting people out of poverty. He said it was essential that developed countries honor their commitments to development aid and make progress towards achieving the MDGs.

**SPECIAL ADDRESSES:** During an afternoon plenary session, participants heard a number of special addresses. Caio Koch-Weser, Vice Chair, Deutsche Bank Group, UK, welcomed renewed momentum to address climate change through developments in and around the UN Framework Convention on Climate Change (UNFCCC) 16th Conference of the Parties, highlighting: increased clarity on how to achieve US\$100 billion climate financing by 2020; developing



José Sócrates Carvalho Pinto de Sousa, Prime Minister, Portugal



L-R: UN Secretary-General Ban Ki-moon and Adnan Amin, Interim Director General, IRENA

countries taking the lead by providing bi-annual GHG inventories and creating domestic carbon markets, including in China and Brazil; and proposals for cooperation between the public and private sectors, in particular public-private climate funds.

Emphasizing that the root causes of climate change and energy insecurity must be addressed now and that there is no time to wait for top-down political processes, Adnan Amin, Interim Director General, IRENA, suggested that energy supply would no longer be a zero-sum game if the existing potential for renewable energy was harnessed. He called on governments to: create enabling conditions for renewable energy investment; stop subsidizing fossil fuels; and ensure that markets fully reflect environmental costs of different energy sources. He underscored IRENA's goal to assist developing countries.

UNFCCC Executive Secretary Christiana Figueres said Cancún opened the door to the era of low-carbon growth, but its goals can only be achieved through rapid scaling-up of renewable energy and energy efficiency technologies. She stressed that appropriate national policies must be created to operate in tandem with the international agreement.

Susan Hockfield, President, Massachusetts Institute of Technology, US, lamented that investments in climate protection have been sidelined in many countries due to anxiety about economic growth, and welcomed those countries that have stepped up efforts for clean technology research. She called for: massive increases in investment for renewable energy research, development and deployment; joint university-industry and government-industry partnerships; and cooperation between established energy companies and technology entrepreneurs.

Richard Newell, US Energy Information Administration, said fossil fuels will remain dominant in global energy use under expected market and policy trends. To reverse this trend, he emphasized efforts to spur innovation, including



Susan Hockfield, President, Massachusetts Institute of Technology, US

through: substantial and sustained support for research and development; policy signals to create rapidly growing demand for new technologies; and regulation for vibrant and competitive private sectors.

**MINISTERIAL PANELS:** Robin Niblett, Director, Chatham House, chaired three ministerial panels on policy challenges.

**What Are the Principal Energy Challenges Facing National Governments?:** In this panel, Wu Yin, Deputy Minister for Energy, China, said the main challenges for his country are: the large volume of energy use, despite *per capita* consumption being far lower than the global average; the high share of coal in primary energy use; the need for domestic energy transportation from the North-West to the South-East, which is met by railway transportation and new electricity grids; and the low level of energy efficiency compared to most developed countries.

Farooq Abdullah, Minister of New and Renewable Energy, India, said 40% of people in his country have no access to modern energy. He stressed the need for easy technology transfer to be able to develop at a rapid rate. Abdullah underscored the benefits from renewables for rural development, including access to water and education.

Amina Benkhadra, Minister of Energy, Mines, Water and Environment, Morocco, emphasized the economic growth of her country, noting that energy demand will double by 2020 and triple by 2030. Benkhadra highlighted Morocco's new strategy on renewable energy and energy efficiency, including legislation to promote private investment.

Gregory Barker, Minister of State for Energy and Climate Change, UK, emphasized the energy challenge faced by the UK, with declining oil fields in the North Sea, aging nuclear plants, and limits on coal due to climate change. He highlighted offshore wind power and CCS, and noted the UK energy system requires an investment of 100-200 billion pounds within the next two decades.

Patxi López, President of the Basque Country, Spain, outlined the Basque country strategy to reduce energy consumption, increase investment in renewables, and use green investment to generate wealth and employment. He stressed Basque leadership in windpower, solar thermoelectric energy and wave technology.

Louis Seck, Minister of Renewable Energy, Senegal, stressed the huge unrealized potential for renewables in Senegal. He underlined the importance of international and bilateral cooperation, and emphasized public-private



UNFCCC Executive Secretary Christiana Figueres, during the special address on "What's next for Future Energy after COP16"





L-R: Paavo Väyrynen, Minister of Trade and Development, Finland; Iris Evans, Alberta's Minister of International and Intergovernmental Relations, Canada; Per Rune Henriksen, State Secretary, Ministry of Petroleum and Energy, Norway; Robin Niblett, Director, Chatham House; Fabrizio Hernández, State Secretary of Energy, Spain; and Walter Steinmann, Director, Federal Office of Energy, Switzerland

partnerships. Seck noted Senegal's dedicated ministry to renewable energy and his country's target of 15% renewable energy by 2020.

During the question and answer segment, discussions centered on the role of subsidies, the possibilities of a carbon capture and storage (CCS) breakthrough, and the opportunities for renewable energy leapfrogging in developing countries. Abdullah said subsidies have been fundamental for renewable energy deployment and stressed the role of green investment banks. Barker underscored the UK's interest in CCS, noting indigenous expertise and potential storage sites in the North Sea. Seck emphasized the role of small grids for rural development.

**How Are National Governments Coping with Energy Challenges?:** In this panel, Thomas Egebo, Permanent Secretary of State, Ministry of Climate and Energy, Denmark, said his country seeks to achieve 100% renewable energy supply by 2050, and that main investments will go to offshore wind power, biomass, large-scale geothermal plants, and the energy grid. Jürgen Becker, State Secretary, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany, emphasized that gas is the fossil fuel most difficult to replace and most compatible with renewable energy use.

Eamon Ryan, Minister for Communications, Energy, and Natural Resources, Ireland, emphasized the importance of grids, saying that their development is a key constraint to using renewable energy sources. He also referenced the need to use fossil fuels as a "saline drip" during the transition to renewables, and said that building transmission grids between countries is "fundamental."

Noting that the Republic of Korea's energy mix is heavily based on energy imports, Young-June Park, Vice-Minister, Republic of Korea, described policies used to help his country achieve global energy targets. He explained policy to increase the use of renewables and nuclear power, adding that his country has no gas reserves.



L-R: Thomas Egebo, Permanent Secretary of State, Ministry of Climate and Energy, Denmark; Jürgen Becker, State Secretary, Federal Ministry for the Environment, Nature Conservation and Nuclear Safety, Germany; and Eamon Ryan, Minister for Communications, Energy, and Natural Resources, Ireland

José António Vieira da Silva, Minister of Economy, Innovation and Development, Portugal, described his country's efforts in energy efficiency, renewables and taking a well-balanced and integrated approach to the energy system. He said Portugal has nearly met its goal to achieve 60% electricity from renewables, and emphasized the role of changing consumer behavior in this success.

Daniel Johansson, State Secretary, Ministry of Enterprise, Energy, and Communications, Sweden, said it is important to acknowledge the cost of GHG emissions. He said benefits of a carbon tax include lower energy costs and support for renewable energies, and noted that excessive natural gas subsidies reduce market competitiveness of renewables.

**What Are the Most Promising Areas for International Cooperation in Solving Future Energy Challenges?:** In this panel, Paavo Väyrynen, Minister of Trade and Development, Finland, highlighted the European Union's policies for promoting sustainable development. He said that the World Trade Organization has some concerns about how to best promote renewable energy under the auspices of free trade.

Providing a perspective from an energy-producing country, Iris Evans, Alberta's Minister of International and Intergovernmental Relations, Canada, highlighted cross-boarder commitments on energy and the value of collaboration among governments, corporations and academic institutions on, among other things, CCS. She noted that shifts to renewable energy are not always driven by price concerns, but also reasons of environmental responsibility.

Per Rune Henriksen, State Secretary, Ministry of Petroleum and Energy, Norway, encouraged participants not to distinguish between producer and consumer countries, but instead to consider global challenges of energy, climate and poverty. He stressed the importance of energy access for poverty alleviation, and the need for international agreement on carbon pricing.

Fabrizio Hernández, Secretary of State for Energy, Spain, listed key areas where international cooperation is needed, including: market integration; technology transfer and sharing; energy efficiency; and regulatory frameworks. On the introduction of renewables, Hernández noted the need for agreement on the definition of property rights and appropriate terms of access in technology transfers.

Commenting on areas for regional and international cooperation, Walter Steinmann, Director Federal Office of Energy, Switzerland, suggested, the importance of common standards on energy efficiency for appliances.

Väyrynen encouraged standardization to promote free trade and reduce non-tariff barriers, and noted concerns about intellectual property rights. Evans cautioned that any move towards international standards must avoid “watering down” national standards.

With regard to investments and policies to attract funding, panelists considered innovative financing mechanisms, and the role of governments, international institutions, private banks and the private sector.

On the role of international cooperation in nuclear power, Steinmann pointed to existing international energy institutions, including the International Atomic Energy Agency, and Väyrynen noted some confusion about the role of nuclear power in a sustainable energy future, raising concerns about the dangers of proliferation, waste, accidents and natural disasters. Evans stressed that all politics are local, and cooperation may be difficult.

**CLOSING STATEMENTS:** Peter Voser, CEO, Royal Dutch Shell, the Netherlands, said there is no time to wait for international agreements, as trillions of dollars need to be invested in the next years to deliver energy with low environmental costs. He said areas for short-term cheap and quick emission reductions that industries should focus on, and governments should give incentives for, are: energy efficiency; natural gas; CCS; and biofuels.

Nobuo Tanaka, Director, International Energy Agency (IEA), recalled that IEA was created in response to the 1973 oil shock, and said current high oil prices could be a burden for the economic recovery. Tanaka said, politically speaking, climate change mitigation means doing something for someone else, while energy security means doing something for yourself, and suggested framing the mitigation discourse in terms of energy security. He emphasized the need for energy efficiency, decarbonizing the power sector through renewables, nuclear and CCS, and decarbonizing transportation.

## SIDE EVENTS

Side events took place throughout the day in different venues and formats, including the Young Future Energy Leaders, Project Village and Roundtable Discussions.

**YOUNG FUTURE ENERGY LEADERS:** Addressing a forum of Young Future Energy Leaders, an initiative of the Masdar Institute, UN Secretary-General Ban Ki-moon cautioned against taking valuable resources for granted and emphasized the importance of climate change mitigation, green development, empowering women and improving global



Ban Ki-moon, UN Secretary-General, addressed Young Future Energy Leaders

health. He noted the need to share the “gifts of science and technology” with people in the developing world in order to achieve universal access to clean energy by 2030.

Highlighting how access to energy can improve as well as save lives, Ban observed that obstacles to energy access are not technical. He called for focused and sustained political commitment at the highest level to prioritize wise investments, particularly in renewable energy. Lauding the UAE’s visionary leadership resulting in the construction of Masdar City, an urban development powered by renewable energy, he expressed hope that experiences and ideas from this initiative would be widely shared.

**PROJECT VILLAGE:** At the Project Village, a section of the conference center dedicated to linking project developers with potential investors and technology providers, booths showcased a number of renewable energy projects and initiatives. Presentations on Monday included that by Ben Warren, Ernst & Young, on challenges and opportunities in renewable energy. He highlighted emerging markets and, describing global trends in renewable energy, he considered the need to attract investment, increase public engagement, reward investment in energy efficiency, and align energy policies with economic, industrial and environmental policy. Calling policy the “single most important driver for clean energy investment,” Logan Goldie-Scott, Bloomberg New Energy Finance, discussed investment trends and barriers in energy, particularly in the Middle East region. Noting both advantages and disadvantages, he highlighted policy support mechanisms, including renewable portfolio standards, tax incentives, and feed-in tariffs. Amjad Rihan, Ernst & Young, presented on the Clean Development Mechanism (CDM), and the development of carbon commerce. He noted the challenges in registering some projects under the CDM, explaining that there are countries that lack the necessary regulatory structures to meet the stipulations of the UNFCCC for potential projects.

During the discussion, participants considered, *inter alia*, policy transparency and consistency; the role of sovereign risk in emerging markets; infrastructure support for renewable energy development; failures of governments to develop a global policy on climate and energy; and the balance between risks and potential rewards for investors. Tyler Tringas, Bloomberg New Energy Finance, discussed cost comparisons of renewable energy generation using the standardized “Levelised Cost of Energy (LCOE).” He explained that this analytic approach facilitates comparisons of renewable energy with other energy generation strategies. He stressed that there are already some renewable energy sources that are economically competitive, including some applications of wind, geothermal and waste-to-energy, and that LCOEs are generally declining.

**ROUNDTABLES:** Nearly a dozen roundtables convened to discuss a range of specific energy topics. The topics included, among others, geothermal energy, photovoltaic (PV) technologies, air-conditioning, market investments, offshore wind farms and energy efficiency.

A roundtable convened by Mahieddine Emziane, Masdar Institute of Science and Technology, on PV Technologies for Large-Scale Deployment in the Gulf Cooperation Council. Roundtable participants included industry, academic and technical professionals. They discussed challenges of solar energy integration, manufacturing, cost and efficiency, and the need for data. They also emphasized the utility of Masdar City for experimentation and the importance of working together.