Asia Clean Energy Forum Bulletin

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Asian Clean Energy Forum 2012 highlights: Wednesday, 6 June 2012

The seventh Asia Clean Energy Forum 2012, themed "Accelerating low-carbon energy for all," opened in Manila, the Philippines. In the morning, participants convened for the opening plenary. In the afternoon, eight breakout sessions were held under the meeting's theme.

Opening of the Session

Opening the session, Haruhiko Kuroda, President, Asian Development Bank (ADB), highlighted that as Asia is now at the center of the world's economic growth, the region must focus its efforts on providing energy access and reducing energy poverty. He emphasized measures to ensure that the region remains on a low-carbon growth path, including: mobilizing resources for green growth through increased partnerships; scaling-up demand-side initiatives; and providing clean energy technologies to the poor.

Robert Orr, US Ambassador to the ADB, reaffirmed his country's commitment to low-carbon energy for all. Highlighting estimates from the International Energy Agency (IEA) indicating that the world is set to double carbon emissions and therefore raise global temperatures by 6 degrees Celsius, he noted the significant threat this would pose for cities, national economies, and global food security. Drawing attention to the US government's efforts to promote low-carbon energy, including new policies aimed at eliminating fossil fuel subsidies, he called on participants to share best practices and ideas to further clean energy solutions for the region.

Bindu Lohani, ADB, introduced the forum's four tracks: technology; policy and regulation; financing; and energy for all. He highlighted the need for global momentum to support universal energy access, stressing that more knowledge is necessary to move clean energy from an exception to the norm.

Daniel Kammen, Founding Director, Renewable and Appropriate Energy Laboratory, University of California, Berkeley, and **Zhengrong Shi**, CEO, Suntech Power Holdings, answering questions from participants.

Haruhiko Kuroda, President, Asian Development Bank (ADB) delivering his opening message to the forum.

Zhengrong Shi, CEO, Suntech Power Holdings, provided insights on prospects for the solar industry, acknowledging current challenges such as macroeconomics, market capacity, and trade barriers. He highlighted the main trends that will support the solar industry's move into the next phase of cogeneration and energy-storage, including: cost reduction innovation through technological innovation, improved supply chains, and policy support; diversification of regions utilizing and producing solar technology; bankability improvement; and development of smart grids.

Daniel Kammen, University of California, Berkeley, said, despite hard work, the energy community has not yet made progress and energy poverty remains a critical issue. He stressed the need for clear and concise communication on why the world should pay attention to and engage in development and deployment of clean energy.

During the ensuing discussion, participants raised questions on, *inter alia*: trade barriers; communicating systems thinking on clean energy to policy makers; clean energy solutions for the poor; and energy storage. On private sector contributions to achieve universal energy access, Shi said a bottom-up approach is required for each sector because each has different solutions. Kammen said policy stability is necessary and highlighted the "Lighting Africa" initiative as an unexpected success in clean energy technology deployment.

Ann Quon, ADB, presented the ADB 2012 "My View Contest" awards, themed Renewable Energy/Energy for All. Kai Syuen Loh, Malaysia, was the Under 21 Category recipient for his short film titled "A Day in the Life of Energy," while Carlo Marco Cruz, the Philippines, won the Over 21 Category for his film titled "The Smarter Species." The grand prize was awarded to 26 year old Adrian Sibal, the Philippines, for his silent film "The Rivals."

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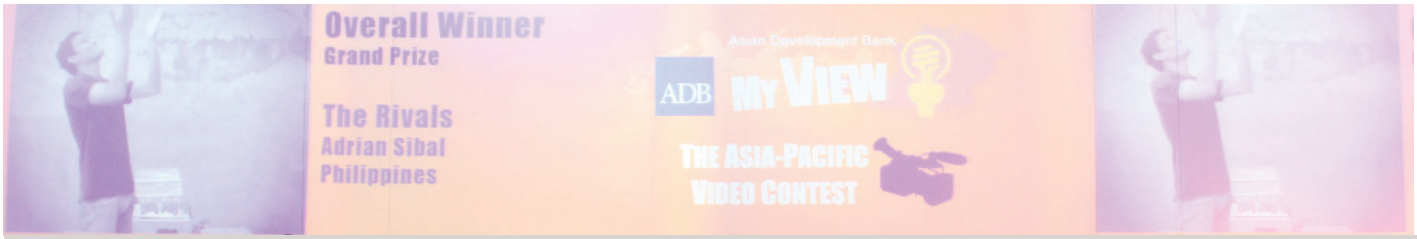

View of the competition's Grand Prize winner "The Rivals" by Adrian Sibal, the Philippines.

Breakout Sessions

PARADIGM TO THE INTERNATIONAL YEAR OF SUSTAINABLE ENERGY FOR ALL YEAR: Athena Ballesteros, World Resources Institute, moderated the session. Bikash Pandey, Clean Energy, Winrock, observed that that type of institutions involved in providing modern energy services for the poor have changed dramatically with an emphasis now on decentralized entities, and enterprise playing a bigger role. He said that despite this shift, the loan and investment portfolios of multilateral development banks (MDB) had not progressed accordingly to support these types of institutions.

Thiyagarajan Velumail, UNDP, called for making poverty reduction the central objective, cautioning against only focusing on energy access. He drew attention to the energy access disadvantage in rural areas.

Edita Bueno, National Electrification Administration (NEA), noted the past the focus had been on generation and transmission and distribution had not received sufficient attention. She also highlighted the role that government can play in supporting energy access and efficiency.

Ingmar Stelter, European Union Energy Initiative Partnership Dialogue Facility, emphasized that energy access targets could not be achieved without private sector involvement, although no one has a clear idea on how to do this. He called for appropriate policies, support of governments, and for MDBs to move towards early stage funding.

Athena Ballesteros, WRI

Discussing scale, Jim Liston, ADB, observed that due to the ADB's procedures, projects had to be of a certain size to warrant consideration with anything below US$ 50 million being unfeasible. On ADB's role, he emphasized that, amongst other things, the bank can be instrumental in bringing about policy change to encourage renewable energy developments.

During the discussion, participants raised issues including the: need for a multi-stakeholder project approach; need for energy strategies to take into account the agricultural sector; foreign exchange risks, which put pressure on costs; non-monetary benefits of energy provision; and moving beyond projects to programmatic approaches for energy provision.

View of a packed Session 2 discussing *inter alia* problems of energy poverty, energy efficiency and financing.

SOLAR ENERGY IN ASIA: Dave Renne, Solar Energy Society, moderated the session, stressing the importance of collaboration among government, private sector, research, and financial institutions to grow the solar sector. On challenges, he highlighted the need to develop an adequate work force for a viable future.

Joel Conkling, Google, presented how Google strives to be a sustainable business by improving data center efficiencies, purchasing renewable energy and carbon offsets, and investing in renewable energy. He identified the company's interest in expanding investment beyond the US borders by drawing on the lessons learned in the US, such as deal structuring to manage risk and aggregating small power purchases.

Mikael Jakobsson, COWI Energy Group, called for integrated energy solutions and smarter grids, sharing perspectives from solar heating experiences in Denmark, highlighting targeted and time limited subsidies. Demchigjav Chimeddorj, Energy Authority Mongolia, shared experiences from Mongolia, outlining the high demand for solar heating due to cold weather and poor air quality and pointing to the need to conduct feasibility studies and initiate pilot projects in city centers.

Aiming Zhou, ADB, detailed the process of developing a rooftop solar project for ADB, identifying risks and the need for innovative financial mechanisms for small projects to achieve bankability. He explained how this rooftop project demonstrates ADB's commitment to environmental and social responsibility without requiring upfront costs, and being credit worthy.

Pushkala Lakshmi Ratan, TÜV SÜD Asia Pacific Pvt. Ltd, addressed mitigating risks for: resource through site assessment and resource monitoring; technology through prototype testing, design review, and demonstration installations; counterparty by credit worthiness and reputation; financial by environmental finance products; and regulatory through stable policy development and incentives.

In the following discussions, panelists commented on: significant barriers and opportunities in southeast Asia; technical due diligence; operations and maintenance; and insurance.

LOW EMISSION DEVELOPMENT STRATEGIES AS A CLEAN ENERGY DRIVER: Session chair, Orestes Anastasia, USAID Regional Development Mission for Asia, highlighted a process to achieve Low Emissions Development Strategies (LEDS), including: assessing the current situation and aligning it with nationally and locally-specific development goals; prioritizing and developing action plans, including implementation and finance plans; and implementing and monitoring the plans chosen, including designing appropriate monitoring systems.

Sitanon Jesdapipat, Chulalongkorn University, highlighted: Thailand's Power Development Plan; its Energy Efficiency Plan 2010-30; and its Development Plan for Renewable Energy and Alternative Energy for 2008-2020, noting the need to reevaluate policies on climate change, and the importance of governments sending clear signals that prove to consumers that clean technologies are worth investing in.

Darius Nassiry, Global Green Growth Institute, drew attention to the Republic of Korea's Institutional Framework for Green Growth initiated in 2008, noting the government's

Session 3 dais on Solar Energy in Asia: Industry Dynamics, Business Models, and Potential for Expansion

five year growth plan committing to invest approximately US $100 billion in research and development for clean technologies and acceleration of their deployment.

Pan Tao, Institute for Sustainable Communities, presented on experiences with LEDS planning and development initiatives in China, highlighting key challenges that need to be overcome in order for national and provincial LEDS programmes to succeed, including providing greater incentives to attain the high provincial LEDS targets; and creating local level awareness to complement the high global priority for LEDS.

Nguyen Manh Hai, Central Institute for Economic Management, Vietnam, presented Vietnam's draft Green Growth Strategy (GGS) as a LEDS and its implications for clean energy development, listing three strategic tasks, including: reducing GHG intensity and promoting the use of clean renewable energy; greening existing production processes; and greening lifestyles and promoting sustainable consumption patterns.

The ensuing discussion focused on the impact of national-level policies and frameworks and business-driven green growth initiatives, and the different focuses for LEDS in both high- and low-emissions countries.

ACCELERATING THE DIFFUSION OF CLIMATE TECHNOLOGIES IN THE ASIA-PACIFIC: This session was chaired by Xuedu Lu, ADB. Rajiv Garg, UNEP, presented UNEP's efforts on technology transfer and said lack of experience and return on investment are key barriers in deployment and recommended networks as key tools for faster uptake of climate technologies, including the "Pilot Asia-Pacific Climate Technology Network and Finance Center."

Letha Tawney, WRI, explained that both the climate and energy communities have struggled with innovation. She stressed that clean energy is now cost competitive with other forms of energy and cost no longer represents a barrier to climate technology diffusion.

Peter Storey, CTI Private Financing Advisory Network (PFAN) Global Coordinator, PPL International, said bringing together finance and technology is the main barrier to climate technologies. He presented the PFAN as a model with good success rates and high financial leverage. He noted that lack of early stage financing represents an additional barrier.

Toru Kubo, ADB, described ADB's efforts on innovation, transfer, and diffusion for climate technologies, including the Asia Climate Change and Clean Energy Venture Capital initiative, which combines equity for financial capital funds with technology advisors.

In the ensuing discussion, participants discussed, *inter alia*, criteria for venture capital funds and the UN Convention on Climate Change, Green Climate Fund (GCF). Tawney said the GCF has the opportunity to build an enabling environment while reducing reduce risk for technology diffusion. Kubo highlighted non-financial barriers to climate technologies, such as ensuring that technology is available, affordable, and accessible. Garg stressed funding for technology transfer and large-scale diffusion should only be done when there is national readiness and infrastructure to accept and support the technology.

MOVING OUT OF POVERTY THROUGH PRODUCTIVE USE OF ENERGY SERVICES: The session was moderation by Robert van der Plas, Energy for All Partnership.

Drew Corbyn, Practical Action, described lack of access to energy as "the cruel catch 22, which locks people in a cycle of poverty." He introduced the Poor People's Energy Outlook (PPEO 2012), observing that PPEO has examined home energy use and proposed the concept of total energy access, which goes beyond looking at supply side indicators and focuses on how people use energy. On livelihoods, he noted that energy access could: create new earning opportunities; improve existing earning activities; and reduce drudgery. He also noted that for reducing poverty, increasing agricultural productivity is essential.

Russell de Lucia, The Small Scale Sustainable Infrastructure Development Fund, Inc., emphasized the need for technology and financial inclusion, observing that access to energy alone does not automatically reduce the impacts of poverty or facilitate productive application. For productive use to have a greater impact he observed that households and enterprise would have to have the "know how" brought to them as well as access to financing and that value added capture has to be undertaken by the entrepreneurs.

Laurie Navarro, Alliance for Mindanao Off-grid Renewable Energy Program (AMORE) USAID, highlighted AMORE, a rural electrification programme aimed at providing access to modern energy services. She also emphasized the need for soft financing for small businesses.

Observing that the majority of the poor derive their living from the agricultural sector, Beau Damen, UN Food and Agriculture Organization, stressed that improving energy production of the agricultural sector will be one of the key challenges for the future, noting that food production increase will have to come from agricultural intensification.

Len Geroge, ADB, highlighted ADB's technical assistance programmes aimed at providing financing to small and medium-sized enterprises.

On addressing productive end use, one participant observed that it is important to ask the community what their needs are, noting that an energy analysis should not only be based on modern technology but also on peoples' lifestyles, and that understanding what the communities value in terms of energy products is important. Participants also addressed the role of gender and recommended that any initial needs assessment be gender sensitive.

SMART GRIDS AND GRID INTEGRATION OF RENEWABLE ENERGY: Moderator Pil-Bae Song, ADB, opened the session by acknowledging that smart grids can help address high growth demand in the Asia Pacific and help to achieve universal access.

Reji Kumar Pillai, India Smart Grid Forum, explained that the smart grid is a need, not a luxury, describing specific challenges in India requiring expanded energy access,

View of the morning plenary session.

improved quality, security and supply and reduced transmission losses. He highlighted the roadmap for the next five years summarizing the vision and projects with solutions for smart grid implementation.

David Elzinga, IEA, outlined how smart grid technology modernizes the grid to deploy a range of technologies required to establish energy security and climate stability. He reviewed the efforts required, including: building up of commercial scale demonstrations; developing global technology standards; and integrating with existing electricity infrastructure.

Dietmar Retzmann, Siemans AG, shared successes from wind energy installations in European offshore programs. He provided a technical explanation of how the energy links into the grid through new technologies such as SVC plus (Static Var Compensation) and high-voltage direct current plus.

Eddie Tan, GE Energy, stated that the most important strategy is to increase grid visibility, suggesting *inter alia*: reviewing network design; increasing assets rating and protection schemes; implementing grounding practices; and improving energy storage efficiency.

Cao Xiao, China Electric Power Research Institute, State Grid Corporation, explained the motivation for construction of a smart grid in China as 2/3 of power is generated in the west and southwest while 2/3 of the demand is in the east. He shared progress from the three-phase development to plan, pilot, construct, and enhance the smart grid by pointing to demonstration projects.

Panelists discussed methodologies for energy storage and differences in smart grid technology for each region. Song concluded the session by announcing the ADB would like to help member countries in smart grid development.

EMERGING REGIONAL INITIATIVES TO SUPPORT IMPROVED IMPLEMENTATION OF CLEAN ENERGY: Session Chair Gil-Hong Kim, ADB, introduced the session, noting the discussion would dwell on multi-level approaches to promote clean energy initiatives in the Asia-Pacific region.

Kala Mulqueeny, ADB, reported on the Asia-Pacific Dialogue on Clean Energy Governance and Regulation, noting that on energy services, one barrier that was discussed was Value Added Tax and import duties on lighting products and clean cookstoves, calling on policymakers to agree on standards for these, with a final goal of the elimination of these taxes.

Hongpeng Lui, the UN Economic and Social Commission for Asia the Pacific (ESCAP), presented on enhancing energy security and sustainable development through regional connectivity in the Asia-Pacific region, highlighting a proposal to create an Asian Energy Highway, building on the successes of the Asian Highway Network and the Trans-Asia Railway. He said that ESCAP is working on a set of options regarding the functioning of the Network, which will be presented at the Asia and Pacific Energy Forum in May 2013.

Sven-Uwe Mueller, Director, GIZ, presented on the challenges for the implementation of renewable energy, highlighting experiences from Germany and China. He reflected on the need to create an efficient implementation mechanism through a strong administrative system; as well as the need for technology transfer and know-how, and a strong human resource support network.

Song-Kwen Kang, Korea Energy Management Corporation, presented on energy efficiency policies in the Republic of Korea, highlighting the government's work in promoting energy efficiency in the industrial sector by reducing GHG emissions; in the transport sector through tire-labeling among others; and in the equipment and appliance sector through a high efficiency certification programme among others.

The ensuing discussion focused on: financing the building of the Asian Energy Highway; developing a regional framework for electricity trade in the Asia-Pacific; securing the grid access of renewables; and discussing future plans of the Dialogue on Clean Energy Governance and Regulation.

NEW APPROACHES TO SCALING UP ENERGY EFFICIENCY INVESTMENTS IN ASIA: This session was chaired by Peter du Pont, Nexant Asia.

Thomas Dreessen, CEU EPS Capital Corp., said lack of access to available debt and equity on commercially attractive terms is a major barrier in energy efficiency projects. For energy efficiency projects in China, he said infrastructure investments are a low priority among investors. He described an Indonesian programme to promote and finance energy efficient products that minimize risk and transaction costs for local financial institutions and reduce barriers for industrial end-use energy consumers and industrial hosts.

Mek Meksarikul, Kasikornbank, described his bank's three-way partnership among the bank, the client and an energy service company (ESCO), which provided 100% loans to clients on energy efficiency projects.

Anil Kumar, SRC Global, Inc., presented a review of energy efficiency financing activities in India that identified high priority projects to scale-up industrial energy efficiency.

During discussion, participants highlighted how to: structure equity; replicate success; scale-up training for local financial institutions; aggregate energy efficiency projects; and cluster loans. On replicating success, Meksarikul recommended building capacity and raising awareness among bank officers so that they understand the benefits and risks of energy efficient project investments. On clustering loans, Anil shared his experience in identifying energy intensive projects for energy and carbon savings.