ASIA CLEAN ENERGY FORUM 2015

CONNECTING THE POLICY, TECHNOLOGY, AND FINANCE COMMUNITIES

Manila, Philippines
15–19 June 2015

ORGANIZED BY

ADB

USAID FROM THE AMERICAN PEOPLE

WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
For sustainable energy.

KEMCO
KOREA ENERGY MANAGEMENT CORPORATION

DONORS

Australian AID

Department of Energy & Climate Change

GLOBAL CCS INSTITUTE

JAPAN
Official Development Assistance

NORWEGIAN MINISTRY OF FOREIGN AFFAIRS

GOBIERNO DE ESPAÑA
MINISTERIO DE ECONOMÍA Y HACIENDA

SWEDEN

Foreign Affairs, Trade and Development Canada
Affaires étrangères, Commerce et Développement Canada

PARTNERS

Nexant

energy for all

SUSTAINABLE ENERGY FOR ALL

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

CTI PFAN
CTI PRIVATE FINANCING ADVISORY NETWORK

Government of Canada / Gouvernement du Canada

ENERGIA
INTERNATIONAL NETWORK ON GENDER AND SUSTAINABLE ENERGY

GLOBAL ALLIANCE FOR CLEAN COOKSTOVES

HOMER ENERGY

KEMCO
KOREA ENERGY MANAGEMENT CORPORATION

NREL
NATIONAL RENEWABLE ENERGY LABORATORY

CLEAN ENERGY MINISTERIAL
Accelerating the Transition to Clean Energy Technologies

On behalf of
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
of the Federal Republic of Germany

Transcendergy, L.L.C
solutions for a sustainable future

TÜV SÜD

DEPARTMENT OF STATE UNITED STATES OF AMERICA

LOWER MEKONG INITIATIVE

ASIA CLEAN ENERGY FORUM 2015

CONNECTING THE POLICY, TECHNOLOGY, AND FINANCE COMMUNITIES

Manila, Philippines 15–19 June 2015

ORGANIZED BY

ADB

USAID FROM THE AMERICAN PEOPLE

WORLD ENERGY COUNCIL
CONSEIL MONDIAL DE L'ÉNERGIE
For sustainable energy.

KEMCO
KOREA ENERGY MANAGEMENT CORPORATION

ACEF 2015 Full

	Pre-Forum (See Next Page for Details)						
	June 15		June 16		June 17		
	Monday		Tuesday		Wednesday		
9 a.m.–10:30 a.m.	Asia Solar Energy Forum	Deep Dive Workshops	Energy for All Investor Forum	Deep Dive Workshops	Asia Clean Energy Forum Opening Plenary		
10:30 a.m.–11 a.m.					*Break*		
11 a.m.–12:30 p.m.					Sustaining Energy Efficiency through Organizational Culture Change	What does it take to meet Renewable Energy Targets? Policymaker and Business Leader Perspectives	New and Innovative Business Models to expand Energy Access
12:30 p.m.–2 p.m.					***Lunch***		
2 p.m.–3:30 p.m.	Asia Solar Energy Forum	Deep Dive Workshops	Energy for All Investor Forum	Deep Dive Workshops	The Role of Energy Service Companies in Promoting Energy Efficiency and ESCO Business Models in the Asian Context	Integration of Renewable Energy into the Grid: Barriers and Solutions	Mini-Grids to Expand Access
3:30 p.m.–4 p.m.					*Break*		
4 p.m.–5:30 p.m.					Energy Leaders Dialogue		
6 p.m.–8 p.m.			*Reception*		*Reception*		

DONORS

Australian AID

Department of Energy & Climate Change

GLOBAL CCS INSTITUTE

JAPAN

NORWEGIAN MINISTRY OF FOREIGN AFFAIRS

GOBIERNO DE ESPAÑA MINISTERIO DE ECONOMÍA Y HACIENDA

SWEDEN

Foreign Affairs, Trade and Development Canada

Affaires étrangères, Commerce et Développement Canada

Week Schedule

Main Forum

	June 18				June 19			
	Thursday				**Friday**			
	EE Program Management: DSM and M&V	Renewable Energy Integration in Off-Grid and Mini-Grid Settings	Improved Cooking Solutions	World Energy Leaders' Summit (Invitation Only)	Democratizing the Electricity Market: Using Consumer Choice and Decentralization to Promote Clean Energy	Experience with Designing Public Incentive Programs for Clean Energy in Asia: What works?	Global and Regional Innovation Platforms	Energy Challenges and Innovations Relevant to Small Island States (ADB PARD Event)
	Break				*Break*			
World Energy Leaders' Summit Trilemma Ministerial Roundtable (Invitation Only)	Experience Implementing Clean Energy Regulations in Asia: What Have We Learned?	New Developments in Climate Finance	Smart Grid and Clean Energy Integration	World Energy Leaders' Summit (Invitation Only)	Public–Private Initiatives to Facilitate Market Transformation toward Clean Energy in Asia	Scaling Up Climate Finance	Local Innovation Capacity	
	Lunch				***Lunch***			
World Energy Leaders' Summit Trilemma Ministerial Roundtable (Invitation Only)	Knowledge Networking Session			World Energy Leaders' Summit (Invitation Only)	**Closing Plenary**			
	Break							
	Clean Energy Finance Plenary							
	Reception							

- Energy Efficiency
- Renewable Energy
- Energy Access
- Technology
- Policy and Regulation
- Finance
- World Energy Leaders' Summit

ASIA CLEAN ENERGY FORUM 2015

CONNECTING THE POLICY, TECHNOLOGY, AND FINANCE COMMUNITIES Manila, Philippines 15–19 June 2015

ACEF 2015 PRE-FORUM SCHEDULE

	June 15 Monday				June 16 Tuesday				
9 a.m.–10:30 a.m.	Asia Solar Energy Forum	Hybrid Renewable Minigrids (ADB)	Financing the Next Generation of Transportation Solutions in Asia (PFAN Asia)		Energy for All Investor Forum (ADB)	Renewable Energy Grid Integration – Issues, Enabling Policies, and Finance Measures (USAID/NREL/GIZ)	Lower Mekong Initiative Clean Energy Business Dialogue 2015 (U.S. State Department)	Energy Efficiency DDW (KEMCO)	Improving Grid Efficiency with High-Temperature Low-Sag (HTLS) Conductors (ADB/Transcendergy)
10:30 a.m.–11 p.m.									
11 p.m.–12:30 p.m.									
12:30 p.m.–2 p.m.									
2 p.m.–3:30 p.m.		Unlocking Energy Access Impact, Investment, Scale and Sustainability Through Gender-Sensitive Approaches (Energia/GACC/ADB)	Small Steps, Big Impact: Harnessing Energy Efficiency in your Daily Business (TUV SUD)	HOMER Software Training Session (HOMER Energy)					Innovations and New Technologies in Energy Storage (Canadian Trade Commissioner Service)
3:30–4 p.m.									
4 p.m.–5:30 p.m.									
6 p.m.–8 p.m.									

Eighth Meeting of the Asia Solar Energy Forum (ASEF)

15 June 2015
9 a.m.–6 p.m.

Background:

The Asia Solar Energy Forum (ASEF) was established with support from the Asian Development Bank as a non-profit regional knowledge-sharing platform organization to help facilitate solar energy technology transfer across Asia and the Pacific. ASEF aims to bridge the information gap between suppliers and developers in the public and private sectors, support the growth of local solar energy competence in the developing countries of Asia and the Pacific, while addressing the barriers to trade in solar and smart grid applications. ASEF was registered as a non-profit organization in Japan in September 2012.

Milestone of the Asia Solar Energy Forum:

So far, seven meetings of the ASEF have been successfully conducted in various countries, witnessing enthusiastic networking among peers, and engagement between project developers, equipment manufacturers, lenders, government officials, and other sectors with an interest in solar energy globally. All ASEF meetings have been supported by the hosting countries and attended by high-ranking government officials of the countries in Asia and the Pacific region.

Agenda of the Eighth Meeting of the Asia Solar Energy Forum:

The Eighth ASEF meeting will provide an overview of global renewable energy market status and achievements; update on solar development in key countries; solar PV technology, grid integration and technology trend; and solar business models and market trend.

8:30 a.m.–9 am	**Registration**
9 a.m.–9:10 a.m.	**Session 1: Welcome Remarks** *Anthony Jude*, Chair, Asia Solar Energy Forum (ASEF)
9:10 a.m.–9:40 a.m.	**Presentation** • REN21's Renewables 2015 Global Status Report *Martin Hullin*, Project Manager, REN21
9:40 a.m.–12:30 p.m.	**Session 2: Update on Solar Development** **Facilitator**: *Pil-Bae Song*, Secretary General, Asia Solar Energy Forum (ASEF)

Agenda *continued*

	Presentations:
9:40 a.m.–10 a.m.	• **Update on Solar Development in India** *Tarun Kapoor,* Joint Secretary, Ministry of New and Renewable Energy, India
10 a.m.–10:20 a.m.	• **Update on Solar Development in PRC** *Sicheng Wang,* Senior Scientist, Energy Search Institute, National Development and Reform Commission, PRC
10:20 a.m.–10:35 a.m.	• **The People's Republic of China's Distributed Solar PV Ambitions: Policies and Challenges** *Frank Haugwitz*, Director, Asia Europe Clean Energy (Solar) Advisory
10:35 a.m.–10:50 a.m.	• **Korean Solar PV Policy, Market and Industry Trends** *Yeonji Kim*, General Manager, Korea PV Industry Association (KOPIA)
10:50 a.m.–11:10 a.m.	**COFFEE BREAK**
11:10 a.m.–11:25 a.m.	• **Philippine Solar Resource Characterization, Challenges and Implications for the Sector** *Iban Vendrell*, Renewable Energy Business Development Leader – Asia Pacific, Mott MacDonald, Thailand
11:25-11:40 a.m.	• **Broader Regulatory Barriers to PV in the Philippines** *Hendrik Meller*, Advisor for Sustainable Infrastructure and Climate Change in Latin America and the Caribbean, Environmental Safeguards Unit of the Inter-American Development Bank (IDB)
11:40-11:55 a.m.	• **Solar PV to Meet Renewable Energy Targets- A Financial Drain or Economically Sustainable** *Dennis Ganendra*, Founder of Timeless Green and Executive Director of Minconsult SDN BHD, Malaysia
11:55 a.m.–12:10 p.m.	• **Thailand's Past Success and Future Outlook of its Solar Energy Policy** *Phongkarn Piamsuttitam*, Impact Electrons Siam Co., Ltd
12:10 p.m.–12:30 p.m.	**Q & A**
12:30 p.m.–2 p.m.	**Lunch** **Asia Solar Energy Forum General Meeting (Invitational Only)**
2 p.m.–4:15 p.m.	**Session 3: Solar PV Technology, Grid Integration and Storage** **Facilitator:** *Yongping Zhai*, Technical Advisor (Energy), Sector Advisory Service Division, Sustainable Development and Climate Change, ADB **Presentations**:
2 p.m.–2:15 p.m.	• **PV Industry and Technology Development in PRC** *Sicheng Wang,* Senior Scientist, Energy Search Institute, National Development and Reform Commission, PRC
2:15 p.m.–2:30 p.m.	• **Silicon Solar Cells Technology Trends and the Status of Shinsung Solar Energy in 2015** *Young Hyun Cho*, Senior Executive Vice-President of Shinsung Solar Energy, the Republic of Korea
2:30 p.m.–2:45 p.m.	• **Floating Solar - the White Knight for the Solar Industry** *Hans –Henning Judek*, Chief Executive Officer, Energy Visions Japan
2:45 p.m.–3 p.m.	• **Approaches – Solar Resource Assessments** *Nikhilesh Singh*, Managing Director, 3Tier, India

Agenda *continued*

3 p.m.–3:15 p.m.	**COFFEE BREAK**
3:15 p.m.–3:30 p.m.	• **Inverter Technologies in Stand-alone Micro-grid and Micro-grid applications** *Wuthipong Suponthana*, Managing Director, Leonics
3:30 p.m.–3: 45 p.m.	• **Solar Plus Storage: A Need or an Opportunity?** *Ruud Kempener,* Technology Roadmap Analyst, International Renewable Energy Agency (IRENA)
3:45–4 p.m.	• **Optimized Hybridization and Storage in Mini Grids using Renewable Energy Sources from Solar-PV and Wind:** *Frank Zimmermann*, Business Development Manager South East Asia for Renewable Energies, ILF Consulting Engineers (Asia)
4 p.m.–4:15 p.m.	**Q & A**
4:15–4:30 p.m.	**BREAK**
4:30–5:20 p.m.	**Session 4: Solar Business Models and Market Trends** **Facilitator:** *Anthony Jude*, Chair, Asia Solar Energy Forum (ASEF) **Presentations:**
4:30 p.m.–4:50 p.m.	• **2015 Global PV Market outlook** *Xiaoting Wang*, Research Associate, Solar Insight, Bloomberg New Energy Finance
4:50 p.m.–5:10 p.m.	• **Business Models for Solar-Powered Irrigation and Electricity Services** *Marco Indelicato*, Director of Business Development, SunFarmer, Nepal
5:10 p.m.–5:20 p.m.	• **Performance Validation and Optimization of Utility Scale PV Plant** *Bruno Riva*, Bank and Financial Market, Moroni & Partners, Italy
5:20 p.m.–5:40 p.m.	• **Indian Companies Business Models in Promoting Solar PV** *Seethapathy Chander*, Senior Advisor to the Secretary General, World Energy Council
5:40 p.m.-5:50 p.m.	**Q & A**
5:50 p.m.–6 p.m.	**Session 5: Closing** *Anthony Jude*, Chair, Asia Solar Energy Forum (ASEF)

DAY 1

Hybrid Renewable Minigrids

15 June 2015
9 a.m.–1 p.m.

TIME	SESSION	PRESENTER
8:30 a.m.–9 a.m.	Registration	
9 a.m.–9:15 a.m.	Opening and Welcome Remarks	*Antonio Lopez Martinez*, ADB
	Session 1: Technical Review	
9:15 a.m.–9:30 a.m.	**Engineering Design of Minigrids: Tools and Software**	*Peter Lilienthal, Homer Energy*
9:30a.m.–9:45 a.m.	**Balancing Demand and Supply: Technology Review**	*Philippe Ulrich, SAFT*
9:45 a.m.– 10 a.m.	**Hybridizing Solar PV with AC Generation: Inverters and Control Systems**	*Javier Ferrer, ZIGOR*
10 a.m.– 10:15 a.m.	**Minigrid Stability and RE Integration: Technical Challenges**	*José Antonio Aguado, Effergy Energia*
10:15 a.m.– 10:45 a.m.	Panel Discussion	
10:45– 11 a.m.	**COFFEE BREAK**	
	Session 2: Financing and Case Studies	
11 a.m.–11:15 a.m.	**Low Levelized Cost of Energy Hybrid Solutions through Variable Speed Gensets**	*Mike Wanebo, Innovus Power*
11:15 a.m.–11:30 a.m.	**Identifying and Overcoming Market Barriers for Minigrid Development**	*Aaron Leopold, Practical Action*
11:30 a.m.–11:45 a.m.	**TBA**	*Piyush Mathur, Simpa Networks*
11:45 a.m.–12 noon	**Launching Minigrid Systems in Emerging Markets: Lessons Learned from Africa**	*Chris Hornor, Powerhive*
12 noon–12:15 p.m.	**TBA**	*Tobias Mangelmann, Merica*
12:15 p.m.–12:45 p.m.	Panel Discussion	
12:45 p.m.–12:55 p.m.	Closing Remarks	*Antonio Lopez* Martinez, ADB
1 pm	**LUNCH**	

Showcasing the Next Generation of Transportation Solutions for Asia

15 June 2015
9 a.m.–12:45 p.m.

TIME	ACTIVITY	DESCRIPTION
9 a.m.–9:10 a.m.	**Intro / Setting the Stage** *Dan Potash,* **PFAN-Asia**	Welcome and review of the agenda. Why transport is important for GHG reduction, and why private-sector financing is vital in supporting it.
9:10 a.m.–9:20 a.m.	**The Investor's Perspective** *Marc Stuart* Allotrope Partners	Introducing the investor's perspective and the qualities of what makes a good investment opportunity.
9:20 a.m.–10:50 a.m.	**Company Showcase: Presentation Followed by Q&A and Audience Vote**	**Presentations by:** Penang Bike Share, public bike share intiative EACP, skywalk system in Jakarta ITP, Bus Rapid Transit solutions Parking Duck, the AirBnB for parking spaces* EVEEI, e-jeepney service in Manila SkyTran, personal rapid transit solution*
10:50 a.m.–11 a.m.	**COFFEE BREAK**	
11:00 a.m.–12:30 p.m.	**Company Showcase: Presentation Followed by Q&A and Audience Vote**	**Presentations by:** Global Electric Transportation, EVs for all Airport Express, clean taxis in Sri Lanka* Green Frog, hybrid buses in the Philippines Ather Energy, next-generation electric scooters* Bac Ky JSC, supply chain logistics Italpinas, mixed-use real estate development*
12:30 p.m.–12:45 p.m.	**Award Presentation and Final Thoughts** *Dan Potash,* PFAN-Asia	Present Top 3, as voted on by the audience; final thoughts and thank you's

* Companies presenting virtually

DAY 1

Unlocking Energy Access Impacts through Gender-Sensitive Approaches: A Deep Dive Session at the Asia Clean Energy Forum, 2015

15 June 2015
2 p.m.–6 p.m.

Background

The United Nations General Assembly declared the decade 2014–2024 as the Decade of Sustainable Energy for All (SE4ALL), with the first two years dedicated to a global campaign on energy, women, children and health. Access to energy at all levels, from household to productive use to institutions, is an essential input to development and is critical for health, gender equality, and overall wellbeing. At the same time, since women are engaged in large numbers in micro- and small enterprises, they benefit tremendously from modern, more efficient energy sources. Gender-informed approaches are known to reach consumers better, support women in the value chain, and enhance the overall adoption and effectiveness of energy solutions.

Emerging evidence shows that women are increasingly playing a central role in expanding energy access, especially for the poor and underserved. The role goes beyond women as users of energy services to women as change agents in energy access: in selling, maintaining, and financing energy products and services. They can become critical game changers when they enter the distribution and marketing chain of bottom-up energy solutions. When women are empowered, the benefits have been shown to have multiplier effects in terms of increased incomes and opportunities for families, communities and economies.

Workshop objectives

The objective of this event is to lay out concrete evidence on the following:

- Addressing gender issues is central to achieving energy access goals; gender-informed approaches are imperative for scaling adoption of energy services and technologies.
- Initiatives that are gender-sensitive and empower women by involving them in the energy value chain and by enhancing their employment and leadership in the energy sector are a sustainable pathway to scaling up energy access.
- Scaling up affordable and reliable energy services through women's entrepreneurship can provide a dynamic engine for economic development, poverty elimination and women's economic empowerment.

A number of recent initiatives including good practices and lessons, tools and techniques, analyses frameworks, and resources will be shared at this Deep Dive workshop.

Agenda

2 p.m.–2:10 pm.	**Opening Remarks** Asian Development Bank *Soma Dutta*, ENERGIA *Corinne Hart*, Global Alliance for Clean Cookstoves
2:10 p.m. –2:40 pm.	**Where Do We Stand: Core Gender and Energy Access Issues in Asia-Pacific** This session will provide an overview of latest data and research around gender and energy issues and demonstrating the importance of access to energy in achieving gender equality. **Panel presentations**, moderated by *Marianne Joy A. Vital*, Access to Energy Consultant, ADB *Francesco Tornieri*, ADB *Dr Susan Mercado*, World Health Organization Regional Office for the Western Pacific *Muhammad Zakria Zakar*, University of Punjab, Pakistan
2:40 p.m.–3:30 p.m.	**Approaches to Scaling Access to Energy through Gender Sensitive Approaches: Innovative Approaches towards Inclusive Energy Access** This session will feature innovative approaches and business models that are demonstrating results in expanding energy access as well as in empowering women. Moderated by *Soma Dutta*, ENERGIA *Dagmar Zwebe*, SNV Netherla nds Development Organization *Sally Bolton*, Kopernik Solutions, Indonesia *Lachana Shreshthacharya*, CRT/N, Nepal *Japhet E. Miano Kariuki*, World Energy Council
3:30 p.m.–4:00 p.m.	**COFFEE BREAK**
4:00 p.m. –4:45 p.m.	**Approaches to Scaling Access to Energy through Gender Sensitive Approaches: Reaching Scale in Expanding Energy Access through Gender Sensitive Approaches** Moderated by *Corinne Hart*, Global Alliance for Clean Cookstoves *Harish Hande*, SELCO India *Mohammad Alauddin*, Joint Secretary, Power Division, Ministry of Power, Energy and Mineral Resources, Government of Bangladesh *Els Rijke*, Els Consults *Nicola Armacost*, Arc Finance (TBD)
4:45 p.m.–4.50 p.m.	Short film followed by Discussion
4:50 p.m.–5 p.m.	**Next Steps** *Sonomi Tanaka*, ADB
5 p.m.–6 p.m.	**Summarizing Lessons through a Practitioner Discussion: Lessons and Best Practices** In these interactive breakout sessions, a facilitated discussion will be undertaken on the broad contours of emerging good practices in the areas of (a) Expanding access to electricity (including off-grid solutions); and (b) access to clean cooking. The results will be compiled into a best practices summary as an output from the session. Facilitators: *Ajaita Shah*, Frontier Markets and Francesco Tornieri, ADB

DAY 1

Small Steps, Big Impact: Harnessing Energy Efficiency in Your Daily Business

15 June 2015
2 p.m.–5 p.m.

Duration	Description/Title of Workshop	Details / Comments
2 p.m.	**Driving Energy Efficiency for your Daily Business**	Opening Speech by Mr. Richard Hong, CEO of TÜV SÜD ASEAN Key note address by Department of Energy (Philippines)
2:20 p.m.	**Panel Discussion** **Building Awareness and Financing of the Energy Efficiency Projects in Day to Day Business Activities**	This will focus primarily at looking at the current (and future) regulatory framework in the region and how Government Bodies have been active in their drive towards Clean Energy. Panel Members: Moderator: *Dr. Pushkala Ratan*, TÜV SÜD PSB *Bodo Goerlich*, President of German Philippine Chamber of Commerce & Industry *Oscarlito C. Malvar*, National Project Coordinator, Industrial Energy Efficiency Project, UNIDO *William Trant Beloe*, International Finance Corporation
3 p.m.	**Panel Discussion** **Sustainable Supply Chain**	From the private sector perspective, the logistics industry will be a critical area especially in view of the ASEAN Economic Community (AEC) 2015. The travel distance of goods will be greatly increased, and this panel will discus how companies are doing their part in ensuring responsible logistics. Panel Members: Moderator: Mr. Praveen Tekchandhani, TÜV SÜD PSB *Jaya Moorthi Pillai*, Director of Logistics, Hewlett Packard Asia Pacific *Stephan Schablinski*, CEO of Green Freight Asia Network Member of GFA (TBC)

Duration	Description/Title of Workshop	Details / Comments
3:45 p.m.	**Panel Discussion** How to Identify Energy Conservation Opportunities	Two pilot companies working with the United Nations Industrial Development Organisation (UNIDO) will share how they have made changes and adaptations in their everyday operations in order to conserve energy, and on their practical knowledge and hands-on experience in their journey towards cleaner energy operations. Panel members: Moderator: *Subramanian Vairavan*,TÜV SÜD PSB *Sheena Bata*, JEC Philippines *Marionel P. Peralta*, Consultant, Limketkai Manufacturing Corp. *Martin Ruby*, General Manager, Delta Dore
4:30 p.m.	**Expert Delivery** **Impact of Energy Efficiency : Global Warming and Carbon Footprint**	Experts from TÜV SÜD will share their experiences and know-how through presentations on how energy efficiency can make that impact on the world at large.
5:00 p.m.	**Video Interview** **Success Stories of Energy Conservation Efforts**	Success stories will be showcased and celebrated especially in relation to our experience with KfW DEG in bringing Indonesian SMEs a step closer towards Clean Energy. Video interviews with selected SMEs will be featured so as to understand their triumphs and challenges in the 18th month cleaner environment journey.

DAY 1

Modeling Hybrid Renewable Microgrids with the HOMER® Software

15 June 2015
2 p.m.–5:30 p.m.

TIME	ACTIVITY	DESCRIPTION
2 p.m.–2:10 p.m.	**Introduction** Presenter: *Dr. Peter Lilienthal*	
2:10 p.m.–2:40 p.m.	**Comparison of Results using HOMER and Internally Developed Models for Two Off-grid Sites in the Philippines** Presenter: *John Herrman*	Project sites to be presented are 1) Very small peak load, remote island location with limited renewable resource options, homogenous end user loads, limited load growth potential, and predictable project life load profiles (meaning predictable from an off-grid, rural electrification perspective); and 2) Larger peak load, less remote/highly accessible microgrid site with multiple renewable resource options, complex and dynamic end user loads, high load growth potential, and unpredictable/less-predictable project life load profiles."
2:40 p.m.–3:10 p.m.	**Comparing Models and Actual Performance for PV/Diesel Mini-grids in Northern Australia** Presenter: *James Hazelton*	The remote communities of Northern Territory, Australia are undergoing a transformation from existing diesel grids to low and mid penetration Solar PV hybrid systems. In this case study we gathered operational time series data from two low penetration PV/diesel sites in the region over a year, and then compared the results to Homer models.
3:10 p.m.–3:40 p.m.	**Hybrid diesel-biogas-CPV for Electric and Thermal Load Supply** Presenter: *Guy Michel Kue Talla Ngoko*	The presentation describes a HOMER analysis of a hybrid power system to supply a bakery in northern Cameroon. The recommended combined heat and power solution consists of biogas generator and a concentrating PV system to displace approximately 50% of the diesel fuel consumption.

3:40 p.m.–4:10 p.m.	**Analyzing Hybrid Solutions to Backup Unreliable Grids using the New HOMER Pro 3.2** Presenter: *Peter Lilienthal*	Diesel generators are widely used in many countries even where the electric grid is available but unable to provide reliable 24 hour power. This creates an unsustainable fuel cost burden, but also creates substantial air and noise pollution and maintenance burden. Hybrid systems that use some combination of solar and storage in addition to the diesel can provide many benefits, but the best combination of these resources depends on many site-specific factors, such as the actual frequency and duration of outages, the reliability requirements and usage profiles of the site loads, the solar resource, and fuel and electricity costs. This presentation will show how HOMER's new grid reliability module allows users to compare system design options as a function of these factors.
4:10 p.m.–4:30 p.m.	**BREAK**	
4:30 p.m–5:00 p.m.	**5 MW Solar and Storage Project on an Island in India** Presenter: *Raj Chintapalli*	This presentation compares the results of HOMER and a simpler spreadsheet model for a 5 MW solar system on an island in India. The 5 MWs of solar had already been installed, but the diesel savings was less than expected because of the diesel's operational constraints The analysis looked at 2 different storage solutions to reduce the diesel run-time and increase the fuel savings.
5 p.m.–5:30 p.m.	**Optimizing Energy Access with the HOMER® Software** Presenter: *Silver Navarro, Jr.*	This presentation demonstrates how the HOMER software can improve the design of hybrid systems, providing more economical and reliable power to villages unserved or poorly served by conventional electrification programs. This example includes the design of the micro grid in a remote village of 50 households in Tanabag in Palawan, Philippines. The resulting Homer simulation, optimization and sensitivity analysis show that river flows above an average flowrate of 950 L/s are necessary for hydro with battery and genset back-up to be the optimum system. Below this flowrate solar with battery and genset back-up is the optimum. A purely renewable energy system without a backup generator will experience a small amount of capacity shortage. It is therefore practical to utilize hydro as the cheapest option but combined with solar to support the system during the dry months and backed-up by the existing diesel generator to increase the reliability of the micro grid.

DAY 2

Sustainable Energy for All Investor Forum

16 June 2015
8:30 a.m.–5:30 p.m.

The Asian Development Bank (ADB) has successfully mobilized US$ 5.3 billion of investment in the energy access sector from 2008 to 2014, and deployed US$ 2 billion per year on clean energy. This was made possible by a policy that promotes the maximization of modern energy access in ADB developing member countries, especially for the rural poor. The ADB Energy for All Program collaborated with ADB's Operations Departments to integrate energy access impact to projects on energy generation, distribution, agriculture, water and environment. At the same time, the ADB Energy for All Program actively matches credible energy access enterprises with investors in the private sector to finance and mobilize sustainable and long-term solutions for energy poverty.

As one of the lead organizations and host for the Asia Pacific Hub of the Sustainable Energy for All Initiative, ADB,Re in partnership with UNDP and ESCAP, seeks to replicate its innovative, business-model oriented approach in the energy access sector for future activities in the renewable energy and energy efficiency sector. Apart from expanding the scope of its activities, ADB is also developing a suite of services for Investors to reduce the risk of financing clean energy companies, and Governments to integrate renewable energy, energy efficiency and energy access targets in their country development plans.

The Sustainable Energy for All Investor Forum is one of the pre-forum events of the Asia Clean Energy Forum (ACEF) 2015. This year, ADB will share the results of its initiatives with energy access enterprises, investors and Governments. Clean energy practitioners are encouraged to participate in the event's discussions on catalyzing investment in renewable energy, energy efficiency and energy access.

8:30 a.m.–9 a.m.	**Registration**
9 a.m.–10:00 a.m.	**Opening Panel** Mr. Yongping Zhai – Technical Advisor (Energy), ADB Dr. Martin Niemetz – Country Action Officer, UN Sustainable Energy for All Mr. Jiwan Acharya – Senior Climate Change Specialist (Clean Energy), SDCC, ADB
10 a.m.–11 a.m.	**Facilitating Private Sector Investment (Part 1).** This session will examine how development funding can be use to systematically address investment risks and encourage private sector participation in the clean energy space. Bridging the Working Capital Gap for SMEs – Mr. Gouri Sankar, Maanaveeya Unlocking Private Sector Investment through Crowd Funding – Ms. Claudine Emeott, Kiva Aggregating Local Projects to Access Regional Financing – Mr. Sandeep Giri, Gham Power Addressing the Skill Gap in Management Teams - Mr. Rajat Arora, LGT Venture Philanthropy

11 a.m–11:30 a.m.	**NETWORKING BREAK**
11:30 a.m.–12:30 p.m.	**Facilitating Private Sector Investment (Part 2).** This session will examine how development funding can reduce the operational risks of a clean energy enterprise by facilitating the adoption of information technology. Visualizing Energy Supply and Demand - Mr. Stewart Craine, Village Infrastructure Locating Off-grid Opportunities with Scientific Rigor - Mr. Sanjoy Sanyal, Regain Paradise Cost-effective Expansion by Leveraging Technology – Mr. Piyush Mathur, Simpa Networks Embedding Intelligence in the Distribution System – Ms. Ajaita Shah, Frontier Markets
12:30 p.m.–2 p.m.	**LUNCH BREAK**
2 p.m–3:30 p.m.	**Building a Conducive Clean Energy Ecosystem.** This session will give a platform for representatives of Governments that committed to the Sustainable Energy for All Goals to make a case that their country is a prime destination for project development and investment. Co-Moderators – Mr. Hongpeng Liu, UN ESCAP, Mr. Manoj Kumar Khadka, UNDP Government of Bangladesh – Mr. Mohammad Alauddin, Minstry of Power, Energy & Mineral Resources Government of Bhutan – Mr. Tilak Sunwar, Ministry of Economic Affairs Government of Indonesia – Mr. William Sabandar, Ministry of Energy Government of Pakistan – Mr. Muhammad Bashir Khan, Government of Khyber Pakhtunkhwa Government of Afghanistan – Mr. Mohammad Ismail Nawabi, Head of Biomass Department, Ministry of Energy and Water Government of Nepal – Mr. Dinesh Kumar Ghimire, Director General, Department of Electricity Development, Ministry of Energy
3:30 p.m.–4 p.m.	**NETWORKING BREAK**
4 p.m.–5:15 p.m.	**Business Plan Presentations.** This session will showcase promising clean energy investment opportunities in the Sustainable Energy for All Asia Pacific pipeline. Powerhive – Mr. Chris Hornor, Founder and CEO ROMELCO – Mr. Rene Fajilagutan, General Manager E-Hands Energy – Mr. Chandrasekaran Raghuraman, President and CEO SOLShare Energy – Mr. Daniel Ciganovic, Head of Business Development Panelists: Rajat Arora, LGT Venture Philanthropy Claudine Emoett, KIVA Pariphan Uawithya, Rockefeller Foundation Ms. Monika Froehler, UN Sustainable Energy for All
5:15 p.m.–5:30 p.m.	**Closing Remarks** Mr. Gil-Hong Kim – Senior Director, SDAS, ADB

DAY 2

USAID FROM THE AMERICAN PEOPLE

CLEAN ENERGY MINISTERIAL
Accelerating the Transition to Clean Energy Technologies

NREL NATIONAL RENEWABLE ENERGY LABORATORY

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

On behalf of Federal Ministry for the Environment, Nature Conservation and Nuclear Safety of the Federal Republic of Germany

Variable Renewable Energy (vRE) Grid Integration: Issues, Enabling Policies, and Finance Measures

16 June 2015
9 a.m.–5:30 p.m.

8:30 a.m.	Registration
	Opening & Welcoming Remarks
9 a.m.	**Mario Sander von Torklus**, Executive Director at ADB, Constituency Office for Austria, Germany, Luxembourg, Turkey and the United Kingdom **H.E. Thomas Ossowski**, Ambassador of the Republic of Germany to the Philippines Representative, United States Agency for International Development
	Session 1: Overview, Asian Experiences, and Tools for Successful vRE Grid Integration
9:10 a.m.	**Outline of workshop agenda and goals,** Hendrik Meller (GIZ)
9:15 a.m.	**Keynote I: Challenges and Key Aspects of Grid Integration of vRE** Jaquelin Cochran, NREL **Keynote II: Transformation of Energy Systems for High Shares of vRE** Christoph Menke, Joint Graduate School of Energy & Environment, KMUTT, Bangkok
9:50 a.m.	Presentations and Panel Discussion vRE Grid Integration in Asia – Experiences from Asian countries **ASEAN region:** Sanjayan Velautham, Executive director ASEAN Centre for Energy **Philippines:** Rommel Reyes, National Grid Corporation Philippines **Thailand:** Payomsarit Sripattananon, Provincial Electricity Authority **India:** Shushanta K. Chatterjee, Central Electricity Regulatory Commission Moderation by Christoph Menke *10 min. presentations on country specific policies & regulations, best practices and challenges* followed by panel discussion
11 a.m.	**COFFEE BREAK**
11:30 a.m.	**Identifying Country-Specific Grid Integration Solutions and Introduction to the Grid Integration Toolkit and Asia Clean Energy Grid Integration Network** Group activities using grid integration "scorecard" to prioritize challenges and identify options. Facilitated by Jennifer Leisch, USAID, Jaquelin Cochran and Sam Booth, NREL
12:30 p.m.	**LUNCH**

<table>
<tr><td></td><td colspan="3">Session 2 – Small Group Discussions on vRE Grid integration Policies
Participants will join focus groups related to different policy objectives, allowing more in-depth discussion on the topic, build opportunities for regional collaboration, and identify financing approaches to complement these policies.</td></tr>
<tr><td>2 p.m.</td><td colspan="3">Short introduction into group work and formation of working groups Hendrik Meller (GIZ)</td></tr>
<tr><td></td><td>Group 1: Transmission Planning, including Smart Network Technologies
Chair: Paul Recknagel, GIZ</td><td>Group 2: Grid Connected PV - Technical and Regulatory Solutions
Chair: Jaquelin Cochran, NREL</td><td>Group 3: Procuring RE and Flexible Generation
Chair: Sam Booth, NREL</td></tr>
<tr><td></td><td>• How can locations for transmission and generation be optimized?
• What is the role for regulators?
• What are cost-recovery options?
• What other infrastructure investments are required?</td><td>• What opportunities does grid-connected PV offer?
• What are some of the technical and financial challenges for utilities, system operators, and regulators?
• How can distributed generation policies be modified to minimize grid impacts?</td><td>• How can RE incentives (e.g., feed-in tariffs) be modified to support grid integration?
• What are options for procuring flexible generation?
• What are cost recovery options for flexibility, e.g., for flexible thermal generation that is run less often?</td></tr>
<tr><td>3:15 p.m.</td><td colspan="3">Reporting from the working groups</td></tr>
<tr><td>3:30 p.m.</td><td colspan="3">COFFEE BREAK</td></tr>
<tr><td>4 p.m.</td><td colspan="3">Panel & plenary discussion: Mobilizing investments and the way forward
Moderator: Christoph Menke, Joint Graduate School of Energy & Environment, KMUTT, Bangkok
Sanjayan Velautham, Executive director ASEAN Centre for Energy,
Mario Marasigan, Director Renewable Energy Management Bureau, Department of Energy, Philippines
Len George, Energy Specialist, South Asia Department, Asian Development Bank
Shushanta K. Chatterjee, Joint Chief of Regulatory Affairs at Central Electricity Regulatory Commission, India
Syah Darwin Siregar, PLN Head of New and Renewable Energy, Indonesia</td></tr>
<tr><td>5:15 p.m.</td><td colspan="3">Recommendations and Closing
Sam Booth, NREL
Hendrik Meller, GIZ</td></tr>
</table>

DAY 2

Lower Mekong Initiative (LMI) Renewable and Clean Energy Business Dialogue 2015

15 June and 16 June 2015
9 a.m.–5:30 p.m.

Monday, 15 June	
6:30 p.m. –8:30 p.m.	**NETWORKING RECEPTION (Invitation Only)** Discovery Suites Hotel, 25 ADB Avenue, Ortigas Center, Pasig City Opening Remarks: **Honorable Robert M. Orr,** U.S. Ambassador to the Asian Development Bank
Tuesday, 16 June	
8:30 a.m.–9 a.m.	**REGISTRATION**
9 a.m.–9:15 a.m.	**OPENING SESSION** Asian Development Bank, Auditorium A Welcome Remarks: **USAID**, Gloria D. Steele, Mission Director, Philippines and the Pacific Islands Keynote Speech: **U.S. Department of State,** Robin Dunnigan, Deputy Assistant Secretary for Energy Diplomacy, Bureau of Energy Resources
9:15 a.m.– 10 a.m.	**PANEL 1: THE ROLE OF CLEAN ENERGY AND RENEWABLES IN THE LOWER MEKONG ENERGY SCENARIO** Moderator: **ADB**, Anthony J. Jude, Senior Advisor, Southeast Asia Department **USAID Regional Development Mission for Asia**, Daniel Whyner, Deputy Officer, Regional Environment Office **Economic Research Institute for ASEAN and East Asia**, Anbumozhi Venkatachalam, Senior Energy Economist **Black & Veatch Energy**, Richard O'Connell, International Director, Renewable Energy
10 a.m.–10:30 a.m.	**NETWORKING COFFEE BREAK** Private Dining Rooms 3 and 4, 2nd Floor
10:30 a.m.– 11:30 a.m.	**PANEL 2: SCALING UP SOLAR POWER AND WIND ENERGY IN THE LOWER MEKONG** Asian Development Bank, Auditorium A Moderator: **USAID**, Jerry Bisson, Director, Office of Technical Support, Asia Bureau **GE Renewable Energy**, Pham Hong Son, Country Manager, Viet Nam **AES Corporation**, Mr. Neeraj Bhat, Market Business Leader **SunEdison, Tom Kunde,** Managing Director, Business Development **Asia Green Capital Partners,** Edgare Kerkwijk, Managing Director

11:30 a.m.–12:30 p.m.	**PANEL 3: FINANCING SUPPORT FOR RENEWABLE ENERGY** Asian Development Bank, Auditorium A Moderator: **USAID**, Kofi Owusu-Boakye, Asia Bureau **U.S. Trade and Development Agency,** Mark Dunn, Regional Manager for Asia **Overseas Private Investment Corporation,** James Meffen, Director, Structured Finance Department **Export-Import Bank of the United States,** Raymond Ellis, Vice President, Global Business Development Division **USAID Development Credit Authority,** Michael Metzler, Director
12:30 p.m.–2:00 p.m.	**LUNCH** Oakwood Premier, Joy Nostalg Center Keynote Speech by the **Honorable Robert M. Orr, U.S. Ambassador to the Asian Development Bank**
2 p.m.–3 p.m.	**PANEL 4: BRINGING BIOMASS INTO THE LOWER MEKONG POWER MIX** Asian Development Bank, Auditorium A Moderator: **U.S. Department of State**, Paul Ghiotto, Office of Alternative and Renewable Energy **General Electric Global**, John Alcordo, Team Leader, Distributed Power, Asia **S³IDF – US**, Russell deLucia, President and Executive Director **EVN-Ho Chi Minh City**, Tran Khiem Tuan, Board of Directors (To be confirmed)
3 p.m.–3 p.m.	**NETWORKING COFFEE BREAK** Private Dining Rooms 3 and 4, 2nd Floor
3 p.m.–4:30 p.m.	**PANEL 5: ENABLING ENERGY EFFICIENCY AND VIABLE POWER GRIDS TO PROMOTE SUSTAINABLE DEVELOPMENT** Asian Development Bank, Auditorium A Moderator: **USAID Indonesia Clean Energy Development Project**, Bill Meade, Chief Party, Tetra Tech **Caterpillar Electric Power Division**, Adrian Constable, Asia Pacific Micro-grid Manager **SunEdison**, Tom Kunde, Managing Director, Business Development **HCMC Energy Conservation Center** and **VietESCO**, Huỳnh Kim Tước, Director
4:30 p.m.–5 p.m.	**Wrap-up: USAID,** Jayne Somers, Energy Advisor, Asia Bureau **Closing Remarks: ADB,** Anthony J. Jude, Senior Advisor, Southeast Asia Departmenti

DAY 2

KEMCO
KOREA ENERGY MANAGEMENT CORPORATION

Workshop on Energy Efficiency Policy and Case Studies

Organized by Korea Energy Management Corporation (KEMCO)

16 June 2015
9 a.m.–3:45 p.m.

Background

KEMCO will hold a Deep Dive Workshop in the field of energy efficiency at ACEF 2015. This workshop will focus on Energy Storage Systems (ESS), Building Energy Management Systems (BEMS), and Energy Efficiency Financing, investigating the current status and future development direction for emerging energy efficiency technologies based on ICT. This is a great chance to share the examples and technology of thematic projects between the Republic of Korea, South Asia, Southeast Asia, CIS, and the private and public sectors in developing countries.

TIME	TOPIC	PRESENTER
8:30 a.m.–9 a.m.	**REGISTRATION**	
9 a.m.–9:10 a.m.	**Opening Remarks**	***KEMCO***
SESSION I – Energy Storage Systems s(ESS) **Energy storage systems have a growing market share due to industry efforts to remove barriers to participation and reductions in system costs. This session will explore case studies presenting new technologies using ESS to find ways to achieve energy storage implementation successfully.**		
9:10 a.m.–10:30 a.m.	**Technical Session:** • Introduction of LiB ESS Business • ESS Applications in power grid • Accelerating local innovation to meet the needs of cost effective energy storage solutions	*Moderator*: (TBC) • LG Chem : Young-Bo Cho • Hyosung : Junill Yoon • KEMCO : Hye-in Jin • IESA : Rahul Walawalkar • ADB : Priyantha Wijayatunga
10:30 a.m.–10:50 a.m.	Small group discussion & Action planning	*Small groups will be individually moderated by panelists and experts; each discussing group is asked to produce a one page output outlining a possible implementation strategy*
10:50 a.m.–11:10 a.m.	**COFFEE BREAK**	

SESSION II –Energy Management Systems (EMS) **This session will showcase policies and instruments promoting wider implementation of EMS. In the context of EMS, developing EE indicators is central to effective policy implementation towards continuous improvement. Case studies based on experience will provide insights into data needs and data quality issues**		
11:10 a.m.–12:15 p.m.	**Technical Session:** • Indonesia ESS Case Study • Building Energy Management System (BEMS) in the Republic of Korea • Energy Assent Management System	*Moderator:* Anthony Jude, ADB • Woorizen : Byung Gyu Choi • KEMCO : Yoo-Seung Koh • DNV GL : Khanh-Loc Nguyen • Ceylon Electricity Board: Ronald Comester
12:15 p.m.–12:30 p.m.	Small group discussion & Action planning	*Small groups will be individually moderated by panelists and experts; each discussing group is asked to produce a one page output outlining a possible implementation strategy*
12:30 p.m.–2 p.m.	**LUNCH**	
SESSION III – Energy Efficiency Financing **This session will describe the challenges facing energy efficiency financing for project developers, financial institutions, development banks and energy services companies (ESCOs). Panelists will present proven practice for mobilizing energy efficiency project and program finance.**		
2 p.m.–3:10 p.m.	**Technical Session:** • Public Support for Energy Efficiency Finance • Recent Innovations in Capital Market Financing for Clean Energy • ESCO Financing Case in South Korea	**Moderator:** A. K. Gupta • EESL : Gyanesh Bharti/Neelima Jain • University of Sydney : Verena Streitferdt • CITIgroup Capital Markets : Michael Eckhart • Ecosian: Jin Wook Shin • Ministry of Economy of Uzbekistan : Sirojiddin Akhmedov
3:10 p.m.–3:30 p.m.	Small group discussion: Regional cooperation on EE financing & Action planning	Small groups will be individually moderated by panelists and experts; each discussing group is asked to produce a one page output outlining a possible implementation strategy
3:30 p.m.–3:45 p.m.	Closing remarks	KEMCO & ADB

DAY 2

Opportunities for Grid Efficiency Improvements with High-Temperature Low-Sag Conductors

16 June 2015
9 a.m.–12:30 p.m.

Background

Re-stringing existing networks of 33 kV and higher voltages presents one of the greatest opportunities for energy efficiency gains worldwide, and one of the least disruptive with respect to environmental and social considerations. HTLS conductors can be an economically viable solution for increasing transmission capacity without acquiring new right-of-way for new lines, and may be the only practical solution for urbanized areas and other areas where right-of-way constraints exist. For new lines, HTLS conductors deliver built-in efficiency gains.

HTLS conductors are amenable to a much wider variety of applications than high-voltage direct current (HVDC) systems which are generally limited to very high voltage lines (500 kV and higher) with 1 GW or higher capacity.

HTLS conductors have been on the market for more than 10 years, but are still relatively unknown to donor agencies, multilateral development banks, consultants, and utility professionals. Several varieties of HTLS conductors are commercially available worldwide, with a significant supplier network in developing countries of Asia.

9: a.m.–9:30 a.m.	**Overview of HTLS technology and applications**
Prospects for rapid scale up of HTLS installations as an alternative/complement to new power plants—the world's biggest unexploited energy efficiency opportunity; Takafumi Kadono, Southeast Asia Energy Division, ADB	
Practical experience in developing countries:	
9:30 a.m.–10:00 a.m.	*Transmission Line Capacity Upgrading: The TNB Technology Road Map*, Zulkili M. Yusof, Chief Engineer, Overhead Lines and Cables, TNB Malaysia
10 a.m.–10:30 a.m.	Installation of Advanced Composite Core Conductors, Donny Reinaldi, PT PLN
10:30 a.m. –10:45 a.m.	Coffee break
10:45 a.m.–11 a.m.	*Increasing Line Capacity using HTLS: First ACCR Installation in SE Asia*, Glenmar Cambri, Sr. Applications Engineer, 3M Electrical Markets Division
11 a.m.–11:30 a.m.	[Title to be confirmed] Ravindra D. Chavan, Director (Projects), Maharashtra State Electricity Transmission Co.
11:30 a.m.–11:45 a.m.	*Introduction of Low Sag Up-Rating Conductor in Viet Nam*, Hiroaki Ida and Toyomitsu Kumata, Sumitomo Electric Industries/J-Power Systems.
11:45 a.m.–12 noon	*Financing New High Voltage Transmission Lines in Nepal Using HTLS Conductors*; Surendra Rajbhandari, Nepal Electricity Authority, & Zhang Lei, South Asia Energy Division, ADB
12 noon–12:20 p.m.	*Regulatory Considerations*, Priyantha Wijayatunga, former Director General, Public Utilities Commission of Sri Lanka, Principal Energy Economist, South Asia Energy Division, ADB
12:20 p.m.–12:30 p.m.	**Summary and Wrap up** Takafumi Kadono, Southeast Asia Energy Division, ADB

Government of Canada | Gouvernement du Canada

Energy Storage and Smart Grid Solutions – Addressing Challenges of Renewable Energy Intermittency and Integration

16 June 2015
2 p.m.–3:30 p.m.

Moderator: ADB Principal Energy Specialist, Mr. Sohail Hasnie

AGENDA

2 p.m.–2:05 p.m.	Opening Remarks by **David Murchison**, Executive Director for Canada, Denmark, Finland, Ireland, The Netherlands, Norway, Sweden – Asian Development Bank
2:05 p.m.–2:20 p.m.	Presentation by **Advance Energy Centre** Speaker: **Ian Philp**, Director of Partnerships *TOPIC: Ontario Energy Storage Capabilities*
2:20 p.m.–2:25 p.m.	Q & A
2:25p.m.–2:40 p.m.	Presentation by **Hydrogenics** Speaker: **Alan Kneisz**, Director Business Development *TOPIC: The Hydrogen Shift is Here – The Future of Power and Mobility*
2:40 p.m.–2:45 p.m.	Q & A
2:45 p.m.–3 p.m.	Presentation by **EELO Solutions** Speaker: **Chih-Ting Lo**, Principal *TOPIC: Vanadium Flow Batteries – Opportunities, Challenges, and a Discussion on Whether This is a Real Option in Asia*
3 p.m.–3:05 p.m.	Q & A
3:05 p.m.–3:20 p.m.	Presentation by **India Energy Storage Alliance** Speaker: Rahul Walawalkar, Executive Director *TOPIC: Canada-India Partnership on Energy Storage Technologies*
3:20 p.m.–3:25 p.m.	Q & A
3:25 p.m.–3:30 p.m.	**Conclusion and closing**

DAY 3

ASIA CLEAN ENERGY FORUM 2015

CONNECTING THE POLICY, TECHNOLOGY, AND FINANCE COMMUNITIES Manila, Philippines 15–19 June 2015

17 June 2015

- Energy Efficiency
- Renewable Energy
- Energy Access
- Policy and Regulation
- Finance
- Technology

Opening Plenary: Connecting the Clean Energy Policy, Technology and Finance Communities

8:30 a.m.–10:30 a.m.

This opening session takes stock of the significant progress that the Asia Clean Energy Community has made over the past decade, while also providing a compelling vision and direction for the future.

The two keynote speakers will draw on their decades of experience in the policy, technology, and finance areas of clean energy and climate to describe the important aspects of the policy and technology frameworks for clean energy going forward and challenge the participants to do better.

Welcome and Opening Remarks

8:30 a.m.–9:25 a.m.

Bindu Lohani
Vice President (Knowledge Management and Sustainable Development)
Asian Development Bank

Robin Dunnigan
Deputy Assistant Secretary for Energy Diplomacy
U.S. Department of State

David Kim
Co-Chair
World Energy Council

Byung Choon Park
Direct General, Global Strategy Division
KEMCO

Asia Clean Energy Forum 10th Anniversary Celebration

Keynote Speeches

9:30 a.m.–10:30 a.m.

Moderator:

Yongping Zhai
Technical Advisor (Energy), Sustainable Development and Climate Change Department
Asian Development Bank

Speakers:

Yvo de Boer
Director General
Global Green Growth Institute

Ja-Kyun Koo
Chairman and Chief Executive Officer, LSIS
President of Korea Smart Grid Association

Thematic Track Sessions

Track 1: Energy Efficiency

Track Chairs:

Pradeep Perera, Principal Energy Specialist, Energy Division, East Asia Department, Asian Development Bank

Thomas K. Dreessen, Chairman and CEO, EPS Capital Corporation

Session 1: Sustaining Energy Efficiency Gains through Organizational Culture Change

17 June, 11 a.m.–12:30 p.m.

Auditorium Zone A

Energy efficiency remains the greatest untapped energy resource in the world, despite advances in technology, innovative program designs, and new financing approaches. This session will examine the human and organizational side of the problem, by focusing on examples of changes in company organizations and cultures in order to promote more efficient energy usage. Speakers from Canada, Sri Lanka, Singapore, and India will present case studies based on their experience.

Session Chair

Pradeep Perera, Principal Energy Specialist, Energy Division, East Asia Department

Asian Development Bank

Presenters

Chih-Ting Lo, Principal

EELO Solutions

Align Energy Management Goals with Business Objectives to Influence Culture Change

Energy consumption and cost are significant in industrial operations, but cost is often managed by accounting while consumption is managed by operations. This disconnect results in the assumption that energy cost and consumption are not controllable and will rise over time. Further, senior management focuses on production, quality, and profit, and lacks understanding on how energy is consumed. This presentation outlines a strategy to link energy management goals to business objectives through a data-driven approach and demonstrates the success using a case study. By empowering senior management and operators to understand energy, developing an effective program aligning energy management objectives closely with business objectives, and implementing the program strategically, real generated savings can influence business decisions and culture to sustain energy savings.

Mohamed Fazvi, Certified Energy Manager

Sri Lanka Sustainable Energy Authority

Energy Management Initiatives in Production Facilities

FDK Lanka has taken several initiatives in sustainable energy interventions through pioneering system implementation for energy sustainability in Sri Lanka. These initiatives were implemented by introducing ISO 14001 Environmental Management Systems standard and ISO 50001 Energy Management Systems (EnMS) standard. An energy policy and an energy management unit were introduced, and a sound energy management action plan was implemented using the systematic

management structure. Furthermore, establishing benchmarks, setting targets and schedules, training and awareness were carried out under EnMS policy directives, and several energy efficiency measures were introduced in lighting and HVAC systems. This resulted in obtaining a 10% reduction in energy consumption for 2014 and a 25% overall reduction in energy consumption.

Srikant Kasturi, Consultant
Development Environergy Services

Success Stories of Cultural Change Towards Energy Efficiency Enhancement in SMEs in India

Under the World Bank GEF Energy Efficiency Program for SMEs implemented by the Small Industries Development Bank of India and Bureau of Energy Efficiency, DESL was assigned to support enhancement of energy efficiency (EE) in 200 SME units. More than 3,000 MTOE have been saved through efforts spread over three years towards enabling continuous organizational behavior change. This presentation shares experiences on cultural issues driving EE decisions in SMEs: (i) EE opportunity awareness; (ii) Ability to discern mis-selling by vendors/consultants; and (iii) Maintaining liquidity through choice of vendors for capital equipment. Success stories of positive turnaround towards implementing and sustaining EE gains will be showcased.

Valerie Choy, Senior Consultant

DNV GL

Improving Industrial Energy Efficiency by Changing the Energy Culture

The Energy Culture of an organization is the shared mindset that creates and sustains an environment leading to continual improvement of its energy performance focused on behaviors of people within an organization and their impact on energy use. This presentation will show how changing behavior can produce significant energy savings, 5-15% savings in the energy consumption of an industrial site. The assessment of energy culture of an organization is based on Visibility, Accountability, Collaboration, Targeting, Commitment, Motivation, Learning and Progress. These are executed through data analysis, surveys, interviews and workshops. Organizations can use the results of this assessment to develop an action plan to improve on a combination of dimensions.

K S Venkatagiri, Deputy Executive Director

CII Sohrabji Godrej Green Business Centre

Sectoral and Organizational Culture: Effects on Energy Efficiency

The Confederation of Indian Industry (CII), through the CII Sohrabji Godrej Green Business Centre, has been working closely with Indian industry for over two decades to improve EE. CII-Godrej GBC has been working on World Class Energy Efficiency in energy-intensive sectors (e.g. cement; pulp and paper; and thermal power plants). It is clear that two behavioral aspects make a big difference to EE: 1. Organizational culture, with top-down and bottom-up commitment; 2. Sectoral culture of commitment and experience sharing. Sectors perform exceptionally in EE due to their commitment, and willingness to experiment and share, both at an organizational level and at the sector level. Our presentation discusses these two aspects in relation to EE and potential/modalities for replication in other countries.

DAY 3

Track 2: Renewable Energy

Track Chairs:

Woo-Yul Lee, Energy Specialist, Transport, Energy and Natural Resources, Division, Pacific Department, Asian Development Bank

Christoph Menke, GIZ/University of Trier

Session 2: What Does It Take to Meet Renewable Energy Targets? Policymaker and Business Leader Perspectives

17 June, 11 a.m.–12:30 p.m.

Auditorium Zone B-C

Many countries in Asia and around the world have adopted aggressive targets for integrating renewable energy into their energy mixes, but meeting these targets presents numerous challenges. This session examines these challenges and approaches to overcoming them. It begins with a scene-setting presentation on REN21's Renewables Global Status Report for 2015, followed by presentations covering Sri Lanka, India, Thailand, and the Philippines.

Session Chair

Rehan Kausar, Unit Head, Project Administration, Energy Division, Southeast Asia Department

Asian Development Bank

PRESENTERS

Martin Hullin, Project Manager

REN21

Special presentation on REN21's Renewables 2015 Global Status Report

This year's ACEF will see the Asia launch of REN21's most recent edition of its flagship report, the Renewables 2015 Global Status Report. Learn about how increased additions of solar PV and wind in the electricity sector have driven other energy sectors. Discover how the energy and power markets are increasingly affected by renewable energy uptake and hear more about global investment levels and most recent policy developments.

First released in 2005, the Global Status Report (GSR) provides a comprehensive and timely overview of renewable energy market, industry, investment and policy developments worldwide. The report is a true collaborative effort of authors, REN21 Secretariat staff and Steering Committee members, and regional research partners, and includes the input of over 500 individual contributors and reviewers. The GSR has become the most frequently referenced report on renewable energy business and policy, serving a wide range of audiences.

Chamila Jayasekara, Director (Strategy)

Sri Lanka Sustainable Energy Authority

100% Renewable Energy Plan of Sri Lanka

Sri Lanka has initiated long-term sustainable energy programs to achieve 100% renewable energy by 2035. Transport and electricity demands will be managed through new EE technologies, information & communication technologies, sustainable concepts in town & country planning and life styles, energy management systems and regulatory infrastructure. To meet energy demands, renewable energy sources will be optimally utilized, through quality enhanced processes, systems, and equipment using research, development and standardization. Electricity will be the main energy carrier, including transportation, and dispersed electricity generation and storage will be promoted. Heating applications will be through electricity or renewable energy. Solar, wind, biomass, hydro resources have been proven for future energy requirements, and maps and inventories of these resources have already been developed.

Pankaj Sehgal, Managing Director

Sun Group

Unleashing India's Solar Rooftop Revolution with the Right Policies, Financing, and Business Model Levers

Rooftop solar is the most logical energy source for India. The nation is already at grid parity, with energy access for 350 million Indians, macro-level energy efficiency policy and increasing democratization of energy. Therefore, the Government of India (GoI) has set an ambitious target of installing 40GW of rooftop solar by 2022. This presentation enumerates solutions to the variety of challenges and hurdles of realizing an ambitious target for distributed solar from the perspectives of investors; developers; policy makers & regulators; and customers. The presentation is the result of efforts by SUN Group and its affiliated Foundation in working with GoI (MNRE) and several state governments in areas of Policies; Finance; Technology; and Business Models.

Iban Vendrell, Programme Leader, Asia Pacific, Renewable Power Division

Mott MacDonald

Meeting Renewable Energy Targets: Accurate Resource Data as a Fundamental Industry Driver

Renewable energy technologies rely on natural resources, which can be difficult to measure to confirm project viability. Industry progress and ability to meet national RE targets depend on certainty of natural resource estimates. Mott MacDonald provides industry-leading technical support for all RE technologies, including resource characterization. This presentation briefly discusses common issues related to resource data constraints, before focusing on the case study of solar resource characterization for the Philippines, for which Mott MacDonald recently performed a country-wide study. This case study illustrates how poor resource data and large variations in country-wide resources can lead to both inappropriate policy and misdirected project siting, undermining the ability to meet national targets, as well as mitigation actions that can be taken.

Tetchi Capelan, President

Philippine Solar Power Alliance

Mainstreaming Solar in the Philippine Energy Mix: Policy Intervention and Industry Action

It took ten years for the Philippines to expand its one megawatt solar installation to 100 megawatt solar installation. The driving force behind the growth was the policy environment created by the Renewable Energy Law passed in 2008 particularly the introduction of the feed-in tariff and the 500Mw target. The topic focuses on creative ways to face the challenges brought by "build-first policy" and the practical solutions adopted by industry and business.

DAY 3

Track 3: Energy Access

Track Chairs:

Jiwan Acharya, Senior Climate Change Specialist, Sector Advisory Service Division, Sustainable Development and Climate Change Department, Asian Development Bank

Maria Athena Ronquillo-Ballesteros, Director, Finance Center, World Resources Institute

Session 3: New and Innovative Business Models to Expand Access

17 June, 11 a.m.–12:30 p.m.

Auditorium Zone D

One of the goals of ADB's Energy for All Initiative is to develop innovative approaches to giving the poor access to affordable modern energy and scaling up through the use of renewable energy. This session will discuss various innovative business models on energy access that have been implemented.

Updates on ADB's Energy for All Initiative from Jiwan Acharya, Senior Climate Change Specialist (Clean Energy), Sector Advisory Service Division, Sustainable Development and Climate Change Department, Asian Development Bank

Moderator

Harish Hande, CEO

SELCO India

Panelists

Stewart Craine, Managing Director

Village Infrastructure Angels

Solar Agro-Processing - A New Community-Scale Entry Point Technology

Since the invention of white LED lighting energy access technologies have almost solely focused on improved lighting, phone-charging and similar consumer-focused technologies, due to their short payback periods. Recently, solar panel prices and DC motors for electric transport have dropped in price enough for a new application of solar to become financially viable—solar agro- processing. Processing crops for staple food and daily meals often requires manual labor from women or transport costs to travel to a diesel or electric mill in a large village or town. Solar mills installed in Indonesia are now starting to alleviate this burden and use energy for productive ends.

Debajit Palit, Associate Director and Senior Fellow

The Energy and Resources Institute (TERI)

Enabling Environment for Affordable Delivery of Sustainable Electricity Services: Case Studies of Innovative Techno-Institutional Models

This paper highlights techno-social innovations in the energy access space through case examples of demonstration projects implemented in India by TERI. The demonstration projects employed mini-/micro-grids, providing either AC or DC power, to electrify households and microenterprises across different geographies using a combination of community and private sector led models. The projects' focus lay not only on technology, but also on other critical aspects such as building ownership, skill augmentation, income generating linkages, revenue and pricing for sustained electricity access. A project's success relies on more than just technology; its success is dependent on a thorough understanding of the socioeconomic characteristics of the user community, the maturity of business model, flexibility in pricing, and strengths and weaknesses of local institutions.

Nicola Armacost, Managing Director

Arc Finance

Driving Access Through Innovations in End-user Renewable Energy Finance

There have been many efforts to promote small-scale renewable energy and enterprise development for "energy poor" groups, but due to lack of appropriate end-user finance or supply chain issues success has been limited. Now, though, a range of demand-driven end-user finance mechanisms have become more widely available, resulting in increased access to clean energy products for the poor. Consumer finance is a key factor in driving access. Arc Finance, with support from various energy and finance partners, is testing a range of financing business cases including MFI energy loans, remittances corridors, micro-leasing, asset finance as well as crowd-funding and innovative technology and payment platforms. This presentation will outline the challenges and opportunities inherent in these models, and their suitability for different markets, clients and products, as well as their potential for scale and replication.

Pooja Sharma, Senior Program Officer

GIZ Nepal

Promoting Productive Use of Energy In Nepal

"Energising Development," is a global program implemented by GIZ which facilitates energy access in Nepal through a grid-based community rural electrification program. For the economic sustainability of energy access and improving economic conditions in rural Nepal, income-generation through energy use is promoted together with Swiss-based NGO Helvetas. The co-operation entails business development services for entrepreneurs already active or aiming to become active in the distribution area of a community rural electrification program.

Daniel Ciganovic, Head of Business Development

ME SOLshare

Experiences from Dynamic, Bottom-Up DC Nanogrids in Bangladesh Using Smart Metering Technology

In rural areas of the Global South electricity demand is diverse and constantly changing. Differing needs for daily life and work, fluctuating household financial situations, changes in habits and weather make mini-grid designs an extremely daunting task. ME SOLshare Ltd., together with its partners the Solar Energy Research Institute of Singapore, United International University Dhaka and GIZ Bangladesh, is presently implementing pilot projects in Bangladesh for dynamic DC nanogrids that are constantly adapted to varying energy needs. These serve as proof of concept for sustainable rural electrification integrating Solar Home Systems into a locally established DC nanogrid with advanced metering and data management systems. The approach was realized with minimum CAPEX while constantly adaptable to varying energy demands, starting as low as US$1.25 per month for LED lighting. It has the potential for scale up in a short term using local resources.

Session 4: The Role of Energy Service Companies in Promoting Energy Efficiency and ESCO Business Models in the Asian Context

17 June, 2 p.m.–3:30 p.m.

Auditorium Zone A

Energy service companies (ESCOs) can be a powerful tool for improving energy efficiency, and companies in various markets in Asia have tried to adopt the ESCO model, with mixed success. Presentations in this session will cover the development of ESCO markets and strategies in Thailand, Viet Nam, India and the Philippines and highlight lessons learned. The discussion will include recommendations for how ESCOs can operate successfully in Asian markets and help economies achieve more aggressive energy efficiency gains.

DAY 3

Session Chair

Thomas K. Dreessen, Chairman and CEO

EPS Capital Corporation

Presenters

Matthew Halstead, Researcher

Energy Research Centre of the Netherlands

Stimulating the ESCO Market in Thailand

In Thailand, ESCO activities are limited to provision of energy services at fixed fees, without venturing into provision of financial services or Energy Performance Contracting, limiting the effectiveness of the ESCO market. International experience shows that ESCO market growth requires access to capital, and a business model that provides incentives for the ESCO and end user to actively pursue energy efficiency measures. The Thai ESCO market requires that ESCOs accept some financial risk, and are compensated based on performance of energy efficiency measures. The Thai government is developing an AMA proposal building on existing government support for ESCOs to provide a suite of measures that allow the market to transform and flourish.

Normand Michaud, Director

Econoler

ESCO Development in Viet Nam, Lessons Learned

The development of the ESCO market in Vietnam, through five years of technical assistance support to the Ministry of Industry and Trade (MOIT), provides many interesting lessons to other countries in the region. From an analysis of barriers, legal and regulatory framework revisions and development of a national strategy, this presentation includes steps taken to develop the ESCO market in collaboration with MOIT. Experience gained from implemented activities includes: identification of potential stakeholders, tools development (templates, contracts, guidelines, etc.), capacity building of ESCOs and other stakeholders (financial institutions, energy end users, etc.) and market stimulation. The presentation also summarizes the current state of the market and results of technical and financial support.

Rajkiran Bilolikar, Associate Professor, Energy Area

College of India

Retrofitting Mahindra Towers: How an innovative ESCO model lowers energy bills with no upfront cost

This presentation highlights Mahindra Towers' business case for partnering with an ESCO to implement EE improvements. Through an energy performance contract (EPC), Mahindra Towers reduced its power consumption by 14% in the first 12 months of the retrofit. 543,108 kWh of energy savings (amounting to $66,200) from March 2009 to February 2010 was achieved. Energy conservation mechanisms to improve efficiency in lighting and cooling systems had a payback period of less than half a year. By working with the ESCO, Mahindra did not make any upfront payments for EE improvements because the ESCO model enabled the company to make payments over time through energy savings. Working with an ESCO to implement EPC mechanisms can be both practical and profitable.

A. K. Gupta, Director of Finance

Neelima Jain, Programme Manager

Energy Efficiency Services Limited

Using the ESCO Model to Scale Up Energy-Efficient Lighting in India

This presentation will cover regulatory and policy support and market-based EE measures designed to reduce India's electricity consumption. The current ESCO market in India, and EESL's role as a Super ESCO will be covered. EESL has evolved

innovative business models to capture EE opportunities across major economic sectors and end use applications. The model has aggregated demand, reduced high initial costs, created commercially viable investment opportunities and facilitated higher uptake of solutions by end users. EESL will provide about 200 million LED bulbs and replace about 10 million street lights with LEDs over the next 1-2 years, thus building a pipeline of $1.2 billion.

Alexander Ablaza, Director

Blue Sky Energy Efficiency (Hong Kong, China)

Creation of Non-Bank Channels to Flow Equity Capital to Energy Efficiency Projects in Emerging Markets

The presentation will explore why Asian emerging economies need specialized non-bank capital sources to bridge extremely wide gaps in EE and distributed renewable generation investment requirements in the demand-side of their energy markets. The unique characteristics and subsequent mismatch of most ESCO projects contrast sharply with a traditional equity and debt provider's investment/lending criteria. Blue Sky's goal is to build across more Asian markets a portfolio of projects that meet a standard investment profile. Blue Sky's business model of establishing non-bank EE investment companies ("ESCO of ESCOs") to mobilize project equity finance can be scaled up (in the Philippines and replicated across more Asian developing countries) blending private capital with development finance to mitigate frontier market risks.

Session 5: Integration of Renewable Energy into the Grid: Barriers and Solutions

17 June, 2 p.m.–3:30 p.m.

Auditorium Zone B-C

Government incentives and falling technology prices are accelerating the deployment of renewable energy in many markets globally. As the uptake of renewables accelerates, utilities, policymakers, and regulators in many countries are confronting common challenges to grid integration. Presentations in this session will cover experience in Germany, China and Australia in detail, as well as a review of experience in Brazil, China, Germany, India, Kyrgyzstan, and the U.S.

Session Chair

Hongpeng Liu, Chief, Energy Security and Water Resources Section

United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP)

Presenters

Pakorn Thepparat, Senior Key Expert in HVDC & FACTS

Siemens AG

PLUS Technology for Large Scale Renewable Energy Integration

Grid integration of RE is challenging because the system designer must fully consider the impact integration has on system stability, system security and power quality during planning. Voltage stability, power imbalance, requirement of proper voltage profile, harmonic, flicker or voltage dips, are just some of the criteria which need to be taken into account for system integration. HVDC PLUS and SVC PLUS using a Modular Multilevel Converter with compact design, is harmonic-free, needs less space and is a robust control technology making it possible to connect large-scale renewable energy to the grid. This presentation discusses the factors to be considered when integrating RE to the grid will be discussed as well as HVDC PLUS and SVC PLUS's technology solution.

DAY 3

Paul Recknagel, Senior Programme Manager

GIZ

System Integration of Variable Renewable Energies

The presentation will cover a range of scenarios and technical requirements for variable Renewable Energy (vRE) Grid integration. The talk will look at: the role of Grid Codes (grid connection requirements for vRE); Grid expansion and the management of vRE generation and the rising share of vRE vs. need for balancing energy/reserve capacities; and Smart-metering (including costs and benefits of a rollout). Market integration of RE needs a flexible and robust RE support policy (including electricity market signals to steer RE generation, and market premium); sector-wide reform; and load management.

Saman Halgamuge, Associate Dean

University of Melbourne

The Value of System Aggregation in Exploiting Renewable Energy Sources

Distributed renewable energy sources like wind and solar are available over large geographic areas. This has led to the proposal that these energy sources can be better exploited using distributed solutions such as micro-grids and domestic-scale battery systems. However, these sources of energy are non-dispatchable and can only be forecasted with finite accuracy, meaning that an integrated system can offer significant cost-reductions compared to a purely distributed approach. Greater system aggregation will increase supply and demand diversity factors, which will reduce the need for costly storage. Increased aggregation will also allow more accurate forecasting enabling better planning and operational decisions. Quantifying this value of aggregation is particularly relevant in locations being newly electrified.

Bharath Jairaj, Senior Associate - Electricity Governance Initiative

World Resources Institute

The Future Electricity Grid: Trends, developments, and learnings from Brazil, the People's Republic of China, Germany, India, the Kyrgyz Republic, and the US

Centralized electricity grid systems are experiencing change, disruptive technologies are being deployed, new electricity generators are being developed, and overall market dynamics are changing. These developments present technical and institutional issues, and raise questions surrounding the economic restructuring necessary to integrate these. WRI reviews how these changes are being rolled out in six countries to identify how these factors are disrupting the current market. While countries are taking reactive measures to integrate new technologies in the system, these measures are lagging and not occurring rapidly enough to support technology innovation. The Future Electricity Grid aims to start a discussion amongst sector stakeholders by highlighting important considerations for planning transitions towards a sustainable grid system.

Session 6: Minigrids to Expand Access

17 June, 2 p.m.–3:30 p.m.

Auditorium Zone D

According to the International Energy Agency, minigrids will have to account for 42% of all new power generation in order to achieve universal energy access by 2030. Minigrids have numerous advantages: it has the capacity to meet the community's electricity demand for productive uses aside from lighting, it can be deployed fast, it can serve as a pre-stage for grid electrification, as it can easily interface with the grid when it reaches the area, among others. The session will discuss possible reasons why minigrids, specifically renewable energy-based minigrids, have not taken off at the faster rate. The session shall also determine the appropriate players to push the successful deployment of minigrids.

Moderator

Maria Athena Ronquillo-Ballesteros, Director, Finance Center

World Resources Institute

Panelists

Anjana Agarwal, Research Analyst, Electricity Governance Initiative

World Resources Institute

A Comparative Study of Socio-Economic Benefits from Microgrids, SHS and the Grid in Rural South Asia

The World Resources Institute and the International Institute for Applied Systems Analysis have completed an empirical study on electricity supply conditions and developmental benefits of access from three types of systems: solar home systems, micro-grids, and the grid in proximate villages in 3 districts in Bihar state, India and Karve district, Nepal. Based on about 1,000 household surveys and 100 small business interviews, we quantify income differences and benefits to women and children, and qualitatively assess the role of electricity in rural development. Our findings are being tabulated, but initial inferences suggest: (i) electricity service is highly differentiated (availability, costs) across the systems; (ii) quality of supply has a significant impact on "productive use"; (iii) while electricity discernibly increases women's leisure; (iv) we find no discernible income differences; (v) household kerosene use is noticeably reduced only with solar systems. This analysis is meant to provide key "bottom up" perspectives to future energy access discussions.

Surabhi Rajagopal, Principal Analyst

SELCO Foundation

A Suitability Analysis of Individual Systems and Microgrids

Decentralized renewable energy is key for bridging the energy access gap for millions of underserved communities. The decentralized space has been predominantly associated with solar lighting systems-portable and home. Recently there have been explorations ofthrough micro grid models which offer benefits of additional loads that are linked to livelihoods and sharing of a common system that can reduce the costs to the end user. Since 2014, SELCO Foundation has installed 4 solar micro grids in three types of locations -an urban slum, rural and remote- in an attempt to understand an array of designs and financial models suited to different contexts and needs. We have been exploring the challenges, barriers and gaps, currently in the ecosystem that prevent or restrict access to these potential benefits and will develop a suitability matrix to understand the factors that build an ecosystem surrounding a viable micro grid solution across different contexts.

Ashvin Dayal, Associate Vice-President and Managing Director

The Rockefeller Foundation

Smart Power for Rural Development

In India more than 290 million people live without basic lighting for domestic and productive use, hindering the potential for economic growth. The Rockefeller Foundation has been working to address energy poverty through a model that provides electricity through minigrids for lighting and business use. By securing telecom and other sectors with significant energy needs as anchor tenants and signing up rural customers, we are working to make it viable for energy-services companies to bring electricity to rural parts of India. With a commitment of $75 million, the Rockefeller Foundation is incubating Smart Power India, a new entity designed to work closely with a wide range of stakeholders critical to developing the ecosystem needed to build, catalyze, create, and scale-up the market, with a target to electrify 1,00 villages in India over the next three years.

DAY 3

Rene Fajilagutan, General Manager

Romblon Electric Cooperative

Hybridizing Existing Diesel Power Plants with Renewable Energy

Maintaining and operating small diesel-based power plants entail substantial resource due to high transportation and hauling costs. In the Philippines, the government is providing a substantial amount of subsidies to provide electricity to remote areas and isolated islands. Given the constraints in providing reliable and adequate electrification services in these areas, ADB through the Energy for All Initiative and the Korea Energy Management Corporation developed feasibility studies for several isolated islands in the Philippines to encourage electric cooperatives to start generating electricity through renewable energy-based systems in tandem with existing diesel power plants. The studies examine the viability of hybridizing the existing diesel systems, assess the environmental as well as socio-economic benefits for the local community. The presentation will focus on the results of the feasibility study for the island of Cobrador, Romblon.

Binu Parthan, Regional Adviser for Asia

Green Climate Fund

Plenary Session: Energy Leaders' Dialogue

17 June 2015 4 p.m.–5:30 p.m.

ADB and the World Energy Council have joined together this year to host the Manila World Energy Leaders' Summit (WELS), a new event during ACEF week. Participants in the WELS are CEOs, Ministers and leaders in their field, and will engage in dialogue on critical issues affecting the energy world. Several participants in the WELS will join an *Energy Leaders Plenary* at the end of Wednesday, 17 June, to share their views and outlook on clean energy in Asia, as well as the role that their particular organizations play in the transition toward a cleaner and more climate-friendly energy future.

Session Chair

Stephen Groff

Vice President (Operations 2)

Asian Development Bank

Panelists

B.M.S. Batagoda

Secretary

Ministry of Power and Energy, Sri Lanka

Montty Girianna

Deputy III (Deputy for Coordination in Energy, Natural Resources, and Environmental Management)

Coordinating Ministry for Economic Affairs, Indonesia

Yongping Zhai

Technical Advisor (Energy)

Asian Development Bank

Christopher Frei

Secretary General

World Energy Council

Harish Hande

CEO

SELCO India

DAY 4

Session 7: Energy Efficiency Program Management: Demand Side Management (DSM) and Monitoring & Verification (M&V)

18 June, 9 a.m.–10:30 a.m.

Auditorium Zone A

An increasing number of countries in Asia are developing demand side management (DSM) programs designed to scale adoption of more efficient technologies and practices in the region, and at the same time build the framework and capacity for monitoring and verification (M&V) of project and program savings. Presentations in this session will cover energy efficiency planning at the ASEAN level as well as specific initiatives under way on DSM and M&V in Thailand, India, and South Africa, and conclude with a discussion of a broad new initiative to improve M&V in practice.

Session Chair

Sohail Hasnie, Principal Energy Specialist, Energy Division, Central and West Asia Department

Asian Development Bank

Presenters

Rio Jon Piter Silitonga, Technical Officer of ASEAN EE&C Programme

ASEAN Centre for Energy

ASEAN Energy Efficiency and Conservation Programme

Energy Efficiency and Conservation (EE&C) is one of the most cost-effective ways of enhancing energy security, addressing climate change and promoting competitiveness in the region. Energy efficiency is no longer an untapped fifth fuel, together with oil, natural gas, coal and renewable energy, but could be considered as a primary source of savings to spur economic development ensuring universal energy access for all, enhancing energy connectivity and market integration and mitigating climate change. ASEAN Member States are at different stages of development in terms of EE&C. During the past fifteen years, AMS have implemented policies and programs to improve the energy efficiency of energy end-users. These EE programs have been directed toward increasing EE in residential and commercial buildings.

Milou Beerepoot, Programme Director

GIZ

Energy Efficiency Resource Standards and Standard Offer Programme for Thailand

Thailand has an ambitious long-term EE strategy (the Energy Efficiency Development Plan, EEDP) with clear targets. One of the strategies in the EEDP is to develop Energy Efficiency Resource Standards (EERS) and a Standard Offer Program (SOP). Successful implementation of an EERS with SOP can bring substantial and guaranteed savings. GIZ and the Ministry of Energy made initial steps to develop EERS and SOP programs by identifying design options for Thailand and choices and agreements needed for development of the schemes. On the basis of the experiences in the past two years, it is possible to identify the challenges and specific hurdles that Thailand faces in developing such schemes as the first country in the region.

Soumya Prasad Garnaik, Head-Energy Efficiency

ICF International

Monitoring & Verification of Energy Efficiency Programs in India: An Overview

The Energy Conservation Act 2001 of India created an environment for pushing EE. The Bureau of Energy Efficiency (BEE) has spearheaded national programs and schemes since 2002. During India's 10th Plan period (2002-2007) only a few EE programs were implemented. However, during India's 11th Plan period, 8 programs/schemes were launched by BEE, and they are still ongoing in the 12th plan period (2012-2017). India's EE programs are slowly reaching maturity regarding program

implementation. Monitoring & verification (M&V) is a key component in the EE program cycle. It becomes more important when there is public money involved to launch and implement programs. The program administrator must ensure transparent results and showcase the efficacy of the programs.

Tom Delay, Chief Executive

Carbon Trust

Lessons from SME Energy Efficiency Programs in South Africa and Malaysia

The Carbon Trust is in the 2nd year of implementing the Private Sector Energy Efficiency Project in South Africa. Governed by a multi-stakeholder steering committee led by the South African Department of Energy, it brings best practice in energy management and energy efficiency to South African industry. The project engages with 60 large, 1000 medium and 2500 small businesses and organizations through strategic energy management, survey-based support, and remote advice. In Malaysia, with the support of the Ministry of Energy, Green Technology and Water, SME Corporation Malaysia, and PEMANDU, the Malaysian Prime Minister's office's performance, management and delivery unit, a program to accelerate the deployment of LED lighting in the retail, manufacturing, logistics and hospitality sectors has been rolled out.

Thomas Dreessen, Chairman and CEO

EPS Capital Corporation

Scaling up EEP Funding with Certified Energy Savings Verifiers

The Efficiency Valuation Organization (EVO) is developing a Certified Energy Savings Verifier (CESV) training and certification program for individuals to be qualified to certify the savings of energy efficiency projects (EEPs). The CESV will fill a significant gap in the global energy efficiency market's inability to verify the energy savings generated from EEPs, which is a key barrier for investors and facility owners to be willing to fund and implement EEPs on a scaled-up basis. The gap is caused by professionals not consistently applying long-standing, generally accepted measurement and verification (M&V) practices. The CESV will fill this gap by creating a new high-grade certification category of professionals who can be relied upon to independently evaluate and certify the energy savings of EEPs.

Session 8: Renewable Energy Integration in Off-grid and Mini-grid Settings

18 June, 9 a.m.–10:30 a.m.

Auditorium Zone B-C

Renewable energy can be particularly attractive in off-grid and island settings, where renewables are much more cost-competitive with prevailing fossil-fuel technologies, such as diesel mini-grids. Even in these more isolated, smaller-scale settings, however, renewables face a range of interconnection and grid distribution challenges. Presentations in this session will discusses efforts under way, and challenges encountered, in Indonesia, the Galapagos Islands, and a range of other countries worldwide.

Session Chair

Woo-Yul Lee, Energy Specialist, Transport, Energy and Natural Resources, Division, Pacific Department

Asian Development Bank

DAY 4

Presenters

Bill Meade, Director

Tetra Tech Inc.

Challenges in Integrating Distributed Renewable Energy Generation in Indonesia

The Government of Indonesia's National Energy Policy sets an ambitious target of 23% for all energy to be from new and renewable sources. While the government has prioritized large-scale hydropower and geothermal power plants, it has also created incentives for small-scale RE systems to be connected to the medium voltage distribution system. Hundreds of mini-hydropower, biomass, biogas, wind and solar PV projects have been proposed. However, before these projects are approved, their impact on the distribution system, and the necessary interconnection facilities and grid improvements need to be determined. This presentation analyzes policy and technical guidelines for connecting RE projects to PLN's distribution system and provides recommendations for balancing interests of project developers and the Government of Indonesia.

Thierry Delmas, APO Asia Pacific Oceania

Gamesa

Off-grid Hybrid Wind/Diesel; Lessons learned and proposed best practices

In the Galapagos Islands, a hybrid wind and diesel system has been operating since October 2007. The installed high wind power installed is significant given the existing maximum demand, and this has led to a significant penetration (of an average 39% annually). The penetration could be greater with pre-phase implementation studies and new ancillary equipment. This presentation discusses the relevance of the turbine electrical system and ancillary equipment to supply short-term active and reactive power to balance grid frequency and voltage. Guidelines are recommended for additional work to be considered when planning off-grid systems as opposed to a conventional grid-connected wind farm. The achievements seen with small grid islands can be replicated with bigger conventional grids.

Istvan Ponsot, Head of Sales Pacific & Caribbean

VERGNET

Renewable Energy Integration in off-grid Applications: Placing Grid Stability at the Heart of Hybrid Systems

Remote locations and islands have identified transition to RE as a key priority. Ensuring smooth integration of clean energy is a decisive step towards energy independence. Photovoltaics, wind power or storage combined with diesel generation can reduce fossil fuel consumption in off-grid applications, but each project requires the right technology and system design to achieve the right level of security, reliability of service, and return on investment. Most importantly, grid stability must drive the design of hybrid systems to ensure successful operation over time. Based on 20 years' experience in connecting Wind and PV plants to off-grid systems worldwide, VERGNET will illustrate key steps and technical solutions leading to the successful implementation of hybrid RE projects.

Ruud Kempener, Technology Roadmap Analyst

International Renewable Energy Agency

Off-grid Renewable Energy Systems: The new frontier for innovation?

With more than a billion people lacking access to electricity, local power-generation solutions are essential to provide sustainable energy to all - particularly those consumers expected to remain isolated from national or regional grids for the foreseeable future. Renewable power generation provides low-cost solutions to bring reliable electricity to rural households or island communities off the main grid. Advancements in electricity storage technologies are fueling these developments. But while off-grid renewable energy systems are expanding rapidly on the ground, data that systematically tracks this progress remains limited.

This presentation provides an overview of current data sources for off-grid renewable energy systems, the challenges, and potential solutions. It suggests methodological improvements to help categorize such systems, evaluate and aggregate data and measure progress in deployment, and track progress on innovation.

Session 9: Improved Cooking Solutions

18 June, 9 a.m.–10:30 a.m.

Auditorium Zone D

About 1.8 billion people in Asia and the Pacific region do not have access to modern energy fuels and still rely on traditional fuels like biomass, crop residues, and animal dung for cooking and heating. It is well documented that exposure to indoor air pollution has serious health implications and shifting to modern and clean cooking fuels can dramatically reduce these health damaging exposures. Cleaner cooking fuels and methods are also more efficient, and overall, less expensive for households, and better for the local environment. Despite these benefits, the transition from traditional fuels to modern fuels for cooking is not occurring rapidly. This session will discuss the different options available for cleaner cooking solutions. The speakers shall also discuss various approaches in effectively disseminating clean cooking devices at a larger scale.

Moderator

Dagmar Zwebe, Programme Leader Renewable Energy

SNV Viet Nam

Panelists

Binu Parthan, Principal

Sustainable Energy Associates

The Challenges with Universal Thermal Energy Access

According to the SE4All Global Tracking Framework 2015, while gains have been made in electrification, renewable energy and energy efficiency, achievements in modern thermal energy lag behind. The presentation will seek to highlight the challenges with thermal energy access globally where the current effort is focused on cooking applications and product supply chains. The presentation will make the case for an approach that is less focused on technologies and products and more focused on service. The presentation will also share early findings on institutional, business, financing and technology issues based on a global survey of energy access practitioners and development agencies, from a UK Aid supported project on Sustainable Thermal Energy Partnerships led by UCL, UK and SEA. The presentation will also outline the planned work in the space and highlight opportunities for synergies.

Corinne Hart, Director, Gender and Humanitarian Programs

Global Alliance for Clean Cookstoves, United Nations Foundation

Improved Cooking Solutions in Humanitarian Settings: Ensuring Access for the Most Vulnerable

More than 51.2 million people are displaced from their homes due to conflict, war, and disaster. Most of the food provided by humanitarian agencies must be cooked before it can be eaten, but cookstoves and fuel are rarely provided. As a result, women and children must risk their safety, health, and sometimes their lives, to search for and collect firewood in order to cook food over smoky, polluting open fires. In many cases, displaced women walk for hours to find firewood and carry heavy loads back to camp, which puts them at risk for physical and sexual attack. To address these issues, the Global Alliance for Clean Cookstoves is working in partnership with UNHCR to develop technical specifications for cookstoves that are procured in bulk by the agency and distributed in emergencies. By improving and standardizing the quality of these cookstoves, UNHCR will be able to provide better quality goods to the refugees it serves, in turn improving their health, safety, and quality of life.

DAY 4

Michael Kelly, Deputy Managing Director

World LP Gas Association

Can We Stop Cooking that Kills with Cooking for Life?

Being an efficient, clean burning fuel, LPG offers one of the best ways to address the myried issues of fuel poverty. When it is made available in a safe and sustainable manner, LPG helps to reduce exposure to indoor air pollution and to address the environmental problems caused by using biomass for cooking. The World LPG Association (WLPGA) has therefore launched COOKING for LIFE, a campaign of the global LPG industry, which aims to transition ONE BILLION people from cooking with traditional fuels, as well as other dirty and dangerous fuels such as Kerosene, to cleaner-burning LPG by 2030.

Ravini Karunarathne, Engineer

Sri Lanka Sustainable Energy Authority

Economic Review of Improved Biomass Cooking Solutions in Semi-urban Households

LPG cooking is more popular among Sri Lankan urban households than using firewood. According to analysis of domestic energy statistics in this study, semi-urban households are showing an upward trend in switching to LPG. Meanwhile, the modern biomass cook stoves market is being established in Sri Lanka through R&D interventions by local industries. These sophisticated biomass cook stoves have eradicated most disadvantages of traditional biomass cooking. The households that have already switched to LPG would be reluctant to use firewood once again due the fact that LPG is more user friendly. However, it would be worthwhile to evaluate the possibility of introducing modern biomass cook stoves to semi urban households that use firewood presently. This paper is on the economic review of a fuel switching programme, analyzing the value of cost saving for 100% concession and the cost of 100% conversion to modern biomass cook stoves in semi urban sector.

Soma Dutta, Programme Coordinator

ENERGIA

Universal Access to Clean Cooking: Opportunities for Engaging Women

ENERGIA, the International network on gender and sustainable energy, has been engaging with the clean cooking sector, by supporting a large number of energy access projects and programmes that feature a mainstreamed gender component. More recently, ENERGIA has been implementing the “Energy Access through Women’s Economic Empowerment (WE)” Programme which supports women led energy businesses in seven countries, and which will reach 2 million customers by 2017. This presentation will focus key emerging trends in the clean cooking sector, with their particular implications on gender, along wih evidence on the business case for engaging women in the clean cooking sector.

Track 4: Policy and Regulation

Track Chairs:

Yongping Zhai, Technical Advisor (Energy), Sustainable Development and Climate Change Department, Asian Development Bank

Wei-Nee Chen, Chief Corporate Officer, Sustainable Energy Development Authority

Session 10: Experience Implementing Clean Energy Regulations in Asia: What Have We Learned?

18 June, 11 a.m.–12:30 p.m.

Auditorium Zone A

It is challenging for Asian energy officials and regulators to know which policy and regulatory approaches present the best option for their country. This session aims to shed light on this issue by examining experience with different frameworks and tools for clean energy regulation and policy in the region. Presentations will include an update on the Sustainable Energy for All Global Tracking Framework; an introduction to the new Asia-Pacific Energy Portal; a report on the response of businesses in Asia to climate change and resource scarcity; and experience with policy and regulatory planning tools and implementation in Bangladesh and China.

Session Chair

Rae Kwon Chung, Principal Adviser on Climate Change

Executive Office of the Secretary - General of the United Nations

Presenters

Gabriela Elizondo, Senior Energy Specialist

World Bank

Presenting SE4ALL's Global Tracking Framework Report

Kimberly Roseberry, Consultant, Environment and Development Division

United Nations Economic and Social Commission for Asia and the Pacific

The Asia Pacific Energy Portal: Charting Asia-Pacific's progress and supporting decision-making in the field of sustainable energy

In May 2015, UNESCAP launched the new online Asia-Pacific Energy Policies & Knowledge platform to enhance regional cooperation on sustainable and clean energy development. The Asia-Pacific Energy Portal provides comparable energy data and policy information in a highly interactive and user-friendly format. Data visualization, multi-indicator comparison, policy tracking and full-text policy access make the portal a valuable tool for research, analysis, and decision-making. With participation and backing from 53 UNESCAP members, the portal enables identification of opportunities for policy actions that can support advancement of clean energy as well as measuring progress of clean energy policies implementation in Asia-Pacific.

Bansari Saha, Senior Economist

ICF International

Analyzing Affordable Clean Energy Policy Choices in Bangladesh using Enhanced Analytical Techniques

Developing effective clean energy regulations requires rigorous data and analysis to study options for meeting energy needs and climate change mitigation goals. Policymakers need decision-making tools with country specific data to develop customized solutions. As part of the USAID Catalyzing Clean Energy in Bangladesh (CCEB) program, the Power Sector Policy Analysis Model (PSPAM) provides policymakers the ability to find mutually consistent clean energy development options that meet economic and energy needs and reduce emissions. PSPAM brings several moving pieces into focus by evaluating different policies based on costs and power prices, fuel mix, GHG emissions, electricity sector growth potential and other outcomes. PSPAM results indicate clean energy policies can reduce GHG emissions cost-effectively compared to investing in conventional electricity generation.

Frank Haugwitz, Director

Asia Europe Clean Energy (Solar) Advisory

The People's Republic of China's National Solar Photovoltaic Policy – What are the lessons learned since 2009

In 2009, the Government of PRC put PV projects up for tender, but small & medium private enterprises were disadvantaged compared to large state-owned enterprises that leveraged vast financial resources. This process was replaced by deployment programs offering capital subsidies. Since this scheme did not ensure high quality components would be deployed, it was replaced by a performance-based FiT scheme. During the last two years, the Government of PRC unsuccessfully promoted distributed solar because such projects are hampered by: 100% self-generation/consumption requirements; lack of standardized roof leasing contracts; unclear roof ownerships and; poor structural stability of roofs. The Government of PRC then moved from a hard to soft target policy.

Tom Delay, Chief Executive

Carbon Trust

Value Creation vs Value at Risk: Understanding Businesses perceptions on climate change regulation in Asia

Are businesses in Asia ready and willing to accept tougher environmental policies and regulations? Who will be the winners and losers? Carbon Trust's international research on business responses to climate change and resource scarcity has found that businesses in Asia are more likely to see immediate risks from the direct effects of climate change than businesses surveyed in other parts of the world. They believe governments are most important in terms of driving change in environmental sustainability, and expect immediate strengthening of regulations. Carbon Trust will present global and regional insights from its new report *Titans and Titanics*, to be launched in early June 2015, exploring how policy makers can effectively promote more sustainable business practices.

Track 5: Finance

Track Chairs:

Daniel Wiedmer, Senior Investment Specialist, Private Sector Operations Department, Asian Development Bank

Eugene Yun, Managing Director, P80 Group Foundation

Session 11: New Developments in Clean Energy Finance

18 June, 11 a.m.–12:30 p.m.

Auditorium Zone B-C

Scaling up clean energy to the necessary levels requires new approaches to standardize and facilitate project finance, as well as business capitalization. This session will bring together finance professionals to present their recent experience with innovations in clean energy finance from around Asia and beyond, including early-stage, risk capital funds; Yieldcos; increased issuance of green bonds; solar securitizations; EE financing structures; and IP-based funds, to name a few.

Session Chair

Eugene Yun, Managing Director

P80 Group Foundation

Presenters

Lopa Shah, Investment Officer

IFC InfraVentures

Early Stage Risk Capital for Renewable Energy

A critical constraint to private sector participation in RE financing in IDA countries and Fragile & Conflict States is the dearth of bankable projects and lack of early stage capital for projects. IFC InfraVentures, an early-stage, risk capital fund, develops bankable private and PPP infrastructure projects in emerging markets. IFC InfraVentures can lead development activities for RE projects through financial and legal structuring, technical design, environmental and other impact assessments and construction financing. IFC InfraVentures supports RE technologies and scaling up of RE in emerging markets and mitigates climate change by addressing the project preparation gap. IFC InfraVentures plays a key role in developing hydropower projects in Nepal and is actively engaged in Myanmar, Viet Nam, Lao PDR and Fiji.

Michael Eckhart, Managing Director and Global Head of Environmental Finance

Citigroup Capital Markets, Inc.

40 Years Into a 100-Year Transition

The year 2013 was a watershed year for renewable energy (RE) and energy efficiency (EE) finance. After decades of innovations in corporate investment and project finance, RE and EE finally reached the capital markets in a mainstream manner. In this one year, there was the first Yield-co by NRG that has led to many others, the writing of the Green Bond Principles that then led to a tripling of green bond issuances in 2014, the first solar securitizations by SolarCity, and the first EE warehouse financing structure called the WHEEL. Citi was and is at the center of these important developments, and sees a strong future for RE and EE in the capital markets.

DAY 4

Ragna Schmidt-Haupt, Head of Strategy & Policy – Asia

DNV GL

Innovative Solar Financing in South East Asia

A supply of cost-effective capital is a pre-requisite for RE projects and access to financing is the key concern for investors and banks. DNV GL understands the interplay between technology, policy economics and regulation, and provides strategy, market and policy advisory services to the RE industry. This presentation introduces new business models and sources of finance taking hold in Southeast Asia, such as Yield-Cos, Crowd Funding, and Green Bonds. Examples from markets around the world that are applicable and scalable to Southeast Asia are presented and explained, such as securitization of solar portfolios. The presentation further covers regional first-mover example market routes beyond FiT and government support and finance requirements, for example direct power sales, PPA innovation or merchant power plants.

Shaojun Liu, Chairman

Hunan High-tech Venture Capital Group

Project Investment and PPP Model Application in Clean Tech

Hunan High-tech Venture Capital Investment Group, founded in 2007, aims at creating favorable investment and finance environments for high tech enterprises in Hunan. In the past eight years, the company has invested in new RE projects and enterprises with clean technologies, such as XEMC New Energy and Hunan CSR Times Electric Vehicle Co., Ltd. The company is managing 20 billion CNY of funds, some focused on clean tech investment and carbon finance. Some are guiding funds in clean energy investment. This presentation shares the company's experience in clean tech investment and PPP projects, planning in climate finance and further development of the PPP model in clean tech on the basis of National low carbon policies, and case studies.

Suk Whan Chang, CEO

Idea Bridge Asset Management, Inc.

IP Monetization in Climate Technology Transfer Promotion

Idea Bridge Asset Management, Inc. manages several Intellectual Property (IP) based funds with Sale & License-Back (SLB) of IP as the main business model. It operates under the spirit of Public Private Partnership in helping to monetize IPs owned by SMEs as a source to raise funds. We can apply the fund management strategy in climate change related technology promotion across Asia. While companies with good patents can raise funds through our Sales & License-Back for growth capital, investors can receive income from licensing fees as well as additional income from mezzanine investments. The importance of IP protection is emphasized to facilitate technology transfer across Asia. Climate change related technology investment cases in the Republic of Korea will be presented.

Track 6: Technology

Track Chairs:

Toru Kubo, Principal Climate Change Specialist, Southeast Asia Department, Asian Development Bank

Jean-François Gagné, Head of the Energy Technology, Policy Division, International Energy Agency

Session 12: Smart Grid and Clean Energy Integration

18 June, 11 a.m.–12:30 p.m.

Auditorium Zone D

Advances in smart grid technology present a major opportunity for expanding clean energy in Asia. Better means of monitoring and managing power systems open the possibility of higher levels of renewable energy penetration and large efficiency gains. Presentations in this session will cover several different technologies, applications, and initiatives that are improving system efficiency, enabling better visibility of customer demand, and facilitating grid integration of intermittent renewable energy sources.

Session Chair

Bill Gallery, Clean Energy Consultant

Nexant Asia

Presenters

Bradley Williams, Vice President, Industry Strategy

Oracle Utilities

Distribution and Microgrid Platforms that Integrate High-Penetration of Beyond the Meter Intermittent Renewables

The vision of the future distribution grids and micro-grids is to create a platform for supporting larger penetrations of clean energy to enable sustainable growth while providing safe, clean, and an efficient supply of energy. This presentation will present current findings related to distribution network impacts of intermittent renewables on distribution. Current research will be presented on utility experience of modeling domestic and commercial grade photovoltaic installations including weather-based forecasts and advanced modeling techniques of customer loads and distributed generation from AMI-based net metering data. Finally real-time and predictive advanced distribution management systems will be discussed.

Khan-Loc Nguyen, Senior Consultant, Clean Technology Centre

DNV GL - Energy Advisory

Energy Asset Management System: Preparation for future grids with high penetration of DERs

Increasing penetration of renewable energy and battery energy storage systems (BESS) in the power grid significantly challenges existing power grids and conventional Energy Management Systems (EMS) and Asset Management Systems (AMS). Independent EMS and AMS systems and RE and BESS together bring complexities to operators and owners in making technical and financial decisions. This presentation introduces a hybrid solution called Energy Asset Management System (EAMS), which integrates EMS and AMS systems as a unified system taking advantage and overcoming disadvantages of the two separate systems. The EAMS system will bring more accurate assessment results; improve system reliability; improve calculation performance; reduce investment costs; and facilitate operation, control, and investment activities for system operators and owners.

DAY 4

Ruba Amarin, Business Development Manager

Engility Corporation

Load Data Improvement (LDI) Project for Reduced Forced Load Shedding

To assist the Government of Pakistan minimize unplanned load shedding and manage power dispatch to better performing distribution companies (DISCO) and neighborhoods, the USAID Power Distribution Program designed the Load Data Improvement (LDI) project to increase visibility into load flow management. LDI activities included installation of 9,045 Automated Meter Reading meters on all grid substation feeders nation-wide. Real-time information indicating over-consuming DISCOs and individual feeders became available. This presentation presents the innovative technology behind the LDI project, which provides reductions in forced load shedding and helps managing power dispatch efficiently. The presentation will discuss immediate benefits of the program and the impacts of applying this technology on the economy and social well-being of Pakistan.

Sam Booth, Project Development Section Manager

National Renewable Energy Laboratory

Smart and Renewable Power System Transformation Issues and Projects

This presentation will cover emerging trends in power system transformation and energy systems integration as well as the opportunity for increased levels of renewable energy penetration and smarter electrical grids. The presentation will also address common grid integration challenges and related solutions such as smart inverters that the U.S. National Renewable Energy Laboratory is working towards. Finally the presentation will discuss the new Clean Energy Grid Integration Network (CEGIN) and related resources for developing countries.

Knowledge Networking Session

18 June, 2 p.m.-3:30 p.m.

At the Knowledge Networking Session, ACEF participants will make quick presentations on innovative ideas, projects and initiatives. The session will feature up to 20 presenters, each at a separate roundtable. During this fast-paced networking session, presenters will have a few minutes to present their idea or initiative, and to discuss with, and get feedback from, other participants. After several minutes, a bell will ring, and participants will rotate tables to listen to, and discuss with, a different presenter.

The following is the list of confirmed presenters for the Knowledge Networking Session. More may be added later, so look for an updated list at ACEF or on the ACEF smartphone app.

Dararat Weerapong

Communications and Knowledge Management

Cosme de Arana

Business Support and Capacity Building

EEP Mekong

Funding affordable access to sustainable energy services in the Mekong region

Lindsay Jones

Co-Founder

InfraEx

Linking clean energy developers and funders to deliver cost effective, successful projects

Jeroen Verschelling

Chairman and Co-founder

Kamworks

Decentralized solar energy applications for increased resilience of rural communities

Erwin Spolders

CEO

Redavia

Solar farm rental service for low-cost, reliable, and clean energy

Alexander Ablaza

Director

Blue Sky Energy Efficiency Co. Ltd. (Hong Kong)

Establishing an ESCO of ESCOs to scale up EE project equity finance in the Philippines and across Asia

Soma Dutta

Programme Coordinator

ENERGIA

Using a recruit-train-mentor mantra to promote a women-centric approach to energy service delivery

DAY 5

Sally Bolton

Communications & Outreach

Kopernik

Wonder Women: empowering women to sell clean energy technologies in Indonesia

Ralf Starzmann

Sales Director & Head of Hydrodynamics

SCHOTTEL HYDRO GmbH

Harvesting hydrokinetic energy from tidal and river currents for commercial projects

Samuel Booth

Project Developer

National Renewable Energy Laboratory

Sagun Tripathi

ICF International

Launching the Clean Energy Grid Integration Network to support RE adoption

Sujay Malve

Senior Manager, Business Development

REC Solar Pte. Ltd.

Hybrid solutions for diesel replacement using solar and storage

Claire Dufour

Executive Director

Nexus-Carbon for Development, Cambodia

The Pioneer Facility: Closing the Pioneer Gap for Sustainable Energy Entrepreneurs

Keith W. Rabin

President

KWR International (Asia) Pte Ltd

Creating the Myanmar Integrated Energy & Capacity Development Center

Pramod Jain

President

Innovative Wind Energy, Inc.

Integrating wind power into the diesel grid on Sumba Island, Indonesia

Nithyanandam Yuvaraj Dinesh Babu

Chief of Party

USAID PACE-D

Shared service models for solar pumping mini-grids

Andrew Fraser

Group Manager Key Projects

Vector Limited

Pacific Islands battery storage initiative (with Tesla battery partnership)

Bharath Jairaj

Senior Associate - Electricity Governance Initiative

World Resource Institute

Using data-driven heat maps to visualize resources and expand clean energy markets

Corinne Hart

Director, Gender and Humanitarian Programs

Global Alliance for Clean Cookstoves

Gender due diligence to support investments in energy access enterprises

Plenary Session: Financing the Clean Energy Future: Public and Private Perspectives

18 June 2015, 4 p.m.–5:30 PM

As the cost of clean energy technologies falls toward grid parity, and deployment accelerates across the region, access to finance is becoming a pressing issue. Both public and private financiers need to build their understanding of the risks and opportunities of investing in clean energy projects, and stay informed about emerging trends and priorities. In addition, there is often a large gap between public and private sector conversations about how to scale up financing of clean energy systems that will meet energy security and infrastructure needs, while also addressing climate change. This plenary session will feature a dynamic discussion and debate with public and private sector representatives from a range of perspectives, including utility equipment and systems, finance and investment, risk management and insurance, and development finance.

Session Chair

Athena Ronquillo-Ballesteros

Director, Finance Center

World Resources Institute

Panelists

Uday Kemka

Vice Chair

Sun Group

Zhipeng Liang

Deputy Director General

New and Renewable Energy Department

National Energy Adminsitration/National Deelopment and Reform Commission, PRC

DAY 5

Gil-Hong Kim

Senior Director, Sector Advisory Service Division, Sustainable Development and Climate Change Department

Asian Development Bank

Jamie Summons

Head of Weather Solutions, Asia Pacific

Swiss Re Corporate

Michael Eckhart

Managing Director and Global Head of Environment Finance

Citigroup Capital Markets, Inc.

Session 13: Democratizing the Electricity Market: Using Consumer Choice and Decentralization to Promote Clean Energy

19 June, 9 a.m.–10:30 a.m.

Auditorium Zone A

The traditional model for electricity markets involves centralized utilities and little, if any, choice for consumers in how or from whom they purchase their power. Technological and policy developments over the past decade have spurred movement toward a less centralized, more open market system in many states and countries, but this new type of market exists in few developing Asian countries. The presentations in this session will explore the experiences of a few countries from around the world in making markets more democratic, and will present lessons learned about policy and regulatory frameworks, as well as community and business models, that can be looked to for inspiration.

Session Chair

Wei-Nee Chen, Chief Corporate Officer

Sustainable Energy Development Authority

Presenters

Aaron Leopold, Global Energy Representative

Practical Action

Building Markets for Energy Access: A value chain analysis of key energy market systems

This presentation will launch an innovative new framework and publication developed by the EU Energy Initiative Partnership Dialogue Facility (EUEI PDF) and Practical Action that systematically and comprehensively analyses and assesses energy market systems, with a focus on decentralized energy markets. The methodology allows policy makers and practitioners to analyze and develop tailored, effective mechanisms to support market development. The framework not only improves the understanding of how energy market systems function, but also provides guidance on how to improve coordination across energy markets in order to increase energy access, investment and growth sustainably and efficiently.

The presentation will explore real world examples of frameworks used in the contexts of mini-grids, solar PV lanterns, solar PV home systems, biomass cook stoves and fuels, and LPG stoves and fuels, where key market barriers, and interventions to overcome them, were identified.

Thomas Chrometza, Director, Renewable Energy

GIZ Thailand

Developing Community-Based Business Models to Enable Prosumers

In Germany, community-based business models or cooperatives are an increasingly attractive model for operators to share added value of power plants, especially in wind, solar and bio energy. The Government of Thailand is putting a strong focus on enabling communities to participate more in decentralized renewable energy projects. GIZ is supporting these activities by developing "Thai-German Renewable Energy Communities". A major outcome is the development of inclusive community-based business models and the implementation of reference projects in selected provinces in Thailand. The presentation will outline the draft concept and indicate options to replicate the approach.

Brian Ryan, Group General Manager Development

Vector Limited

Power for the People

Vector, New Zealand's largest and most innovative energy infrastructure provider, embraces new technologies to provide alternative energy choices to the consumer. This presentation outlines how Vector achieves this – through solar, batteries and more – supported by a 'Power to the People'-approach. What's next for Vector, including rollout of alternative energy choices in the Pacific Islands will also be explored.

Ricardo Barcelona, Managing Director

Barcino Advisers Limited

Resolving the Green Paradox: It's Economics, Not Altruism

Competition in a functioning energy market, such as a wholesale power market European-style, offers pathways for creating choices to consumers and suppliers. Consumers choose their suppliers, who are increasingly differentiating their offers on economic and environmental grounds. In turn, suppliers adopt renewable energy as hedge to volatile fuel prices because it serves their economic objectives, while contributing to society's well-being. Given these premises, firms may need to take a portfolio approach to their energy investments. Policy may need to re-assess why generous subsidies fail to achieve wide scale deployment (or a green paradox). The answer lies in correcting capital budgeting's erroneous premises. In so doing, we can explain why wind power is well accepted while solar power struggled to gain traction, albeit beginning to turn the corner.

Soh Sai Bor, Director, Market Development and Surveillance Department

Energy Market Authority, Singapore

Session 14: Experience with Designing Public Incentive Programs for Clean Energy in Asia: What works?

19 June, 9 a.m.-10:30 a.m.

Auditorium Zone B-C

Public financing and incentives can provide a huge boost to the expansion of clean energy, but properly designing incentive programs can be difficult. The presentations in this session will cover experience in such public programs from a variety of countries and perspectives, including multilateral and bilateral donor organizations and national governments. The approaches discussed will include fiscal policy and pricing, as well as direct co-investment and technical assistance.

DAY 5

Session Chair

Don Purka, Director, Infrastructure and Finance Division 1, Private Sector Operations Department

Asian Development Bank

Presenters

Anbumozhi Venkatachalam, Senior Energy Economist

Economic Research Institute for ASEAN and East Asia

Flexible Fiscal Incentives and Policy Reforms: What works for clean energy investments?

Countries in Asia seek to chart a course of sustainable development through strategies for low-carbon green growth. They recognize new economic opportunities to develop clean energy markets through fiscal policy reforms. This presentation reviews successful experiences of how the People's Republic of China, India and Viet Nam accelerated clean energy investment compared with Japan through fiscal policy reform. Preliminary findings include: i) Fiscal policy instruments, incentives, and subsides (as well as structural reforms) are necessary to adopt new clean energy technologies, overcome micro-economic barriers, and generate expectation for markets with low-carbon clean energy; ii) Implementing broader and robust carbon pricing and taxation will bring revenue neutrality as well as double dividends and; iii) Policies to incentivize financing institutions are needed.

Francoise d'Estais, Head of the Energy and Finance Unit, Energy, Climate and Technology Branch

United Nations Environment Programme

Mobilizing Early Stage Capital through the Seed Capital Assistance Facility

The Seed Capital Assistance Facility (SCAF) employs a public-private operating modality helping low-carbon project developers access enterprise development support and early stage seed capital financing from mainstream energy investors. SCAF channels co-financing support through commercial investment funds for those willing to include a seed investment strategy within their overall commercial investment offering. Eight investment funds have been engaged in Asia and Africa. In 2014, UK DFID signed an agreement with UNEP to provide support from its International Climate Fund for a second phase of the SCAF. The Government of Germany has subsequently provided additional support. This presentation reviews the Facility and how low-carbon focused fund managers and development companies can apply.

Geoffrey Tan, Managing Director, Asia Pacific

Overseas Private Investment Corporation

Climate Finance in Emerging Markets

Overseas Private Investment Corporation (OPIC), the Government of USA's development finance institution, has committed over $5 billion to clean and renewable energy in emerging markets around the globe. These experiences may be useful for Asia with regard to financing clean energy projects. Lessons can be learned from Asia, and other regions as well, as efforts to implement clean energy and associated financing solutions are taking place in emerging markets. From utility scale to micro-grid, commercial, rural and retail RE, OPIC is committed to supporting sustainable and financially viable clean energy investments. A dialogue with like-minded institutions, investors, and others may generate paths toward or even some potential solutions for the challenges in the region.

Ingo Puhl, Director for Strategy, Co-Founder and Member

The South Pole Group

Monetizing "Co-Benefits" of Clean Energy Projects to Boost Public Incentives Programs

Clean energy projects produce a range of co-benefits that have a direct financial value to local beneficiaries willing to pay for having these benefits. Smart public policy design captures this willingness to pay as a means of re-financing incentives

provided to clean energy investors. A recent study examining small and medium sized waste management projects in Bangladesh, co-authored by The South Pole Group, found that the direct financial value of such co-benefits could amount to 99 USD per ton of CO2 avoided. We present the findings and suggest how public policy instruments could support the monetization of this source of value to incentivize clean energy investments.

Ronnie Khanna, Deputy Chief of Party – Renewable Energy

USAID PACE-D TA Program

A Programmatic Approach to Deploying Large-Scale Rooftop Solar in India

India has an aggressive target of 100 GW by 2022 for solar development, 40% that will be developed through solar rooftops. The Government of India has been promoting solar rooftop development with the aim of capacity addition and price reduction. The PACE-D TA Program has also been working along with this strategy. The programmatic approach uses large-scale development of rooftop installations with specific business models, effective leveraging of public funds, standardized contracts and specifications for accelerating solar rooftop development. The Program works with large institutional players like the Indian Railways and Indian Oil in deploying this approach. The presentation will share the design of the approach, lessons, and manner in which this can be scaled up.

Session 15: Global and Regional Innovation Platforms

19 June, 9 a.m.–10:30 a.m.

Auditorium Zone D

Effective technological innovation relies on the creation of venues and platforms for testing new ideas and piloting innovative projects. The presentations in this session will describe opportunities and ongoing initiatives to support innovation in a variety or areas, including carbon capture and storage; clean-tech start-ups and the venture capital community; R&D, incubation, and commercialization; and the launching of an accelerator network for energy storage.

Session Chair

Jean-François Gagné, Head of the Energy Technology, Policy Division

International Energy Agency

Presenters

Alice Gibson, Principal Manager for Capacity Development

Global CCS Institute

Developing Capacity for Carbon Capture and Storage

Although deployment of RE in Asia Pacific is anticipated to increase, many countries in the region will continue to use fossil fuels in significant volumes in the coming decades. Carbon capture and storage (CCS) can deliver significant emission reductions from fossil fuel plants. It is therefore a vital part of a future portfolio of clean energy technologies. The introduction of CCS into a country requires a process of enabling, pre-investment and capacity development activities to support project implementation. These activities need to focus on technology, policy, regulatory, and public engagement issues. This presentation will focus on examples of facilitating the introduction of CCS into developing countries from this holistic perspective.

Daniel Hersson, Consultant/Team Leader

Asian Development Bank

Strengthening the Ecosystem for Cleantech Start-Ups and Venture Capital in Asia

ADB's Climate Technology Finance Centre (CTFC) seeks to accelerate private and public sector investment in development and deployment of new climate technologies in Asia-Pacific. The presentation will highlight two practical examples of how CTFC is operating. We will discuss CTFC's experiences in partnering with leading clean technology start-up accelerators and early-stage venture capital (VC) investors to support and finance the next generation of cleantech entrepreneurs in India and the People's Republic of China. Then, we will discuss how CTFC is linking public sector investment to upgrade local technical and vocational training (TVET) in Tajikistan to strengthen in-country clean energy technology capacity and future rollout of climate investment. We will discuss specific lessons and broader learning for ADB and other climate technology and investment stakeholders.

Jinyue Yan, Director of Future Energy Profile

Royal Institute of Technology and Mälardalen University

Future Energy Transition: Innovative clean energy technologies need innovations for penetrating sustainable market

Clean energy technologies provide the possibility for decoupling economic growth from emissions. However, further innovations beyond technology are important for the wider adoption of clean technologies to penetrate the sustainable energy market. As an example, this presentation reviews the Swedish experience on decoupling development with emissions. State-of-the art clean energy technologies, policy incentives and barriers, and R&D needs are addressed. Different possibilities with integrated energy systems, involving all stakeholders to incubate technology innovations into implementation and commercialization enhanced by international cooperation will be proposed and analyzed in this presentation.

Rahul Walawalkar, Executive Director, IESA and VP, Emerging Tech

Customized Energy Solutions

Accelerating Local Innovation for Meeting Needs of Cost Effective Energy Storage Solutions

Developing countries have invested billions of dollars in early stage cost effective energy storage technologies that have started the pathway to commercialization. While some technologies will find suitable markets in developing countries, drivers for innovation and value propositions may be completely different in developing nations such as India. This requires a developing local accelerator network that captures the needs and expectations of consumers and uses international networks to leverage advances in technologies taking place in the global innovation system. We are developing and launching such an accelerator network focused on India, Asia Pacific and Africa regions and anticipate that government policies will provide support to make India a global hub for innovation and manufacturing of advanced energy storage solutions.

Session 16: Public-Private Initiatives to Facilitate Market Transformation toward Clean Energy in Asia

19 June, 11 a.m.-12:30 p.m.

Auditorium Zone A

One of the key roles for public policy in promoting clean energy is creating an enabling environment for private actors to operate successfully. The presentations in this session will cover a publicly funded platform for facilitating investments in small-scale clean energy projects and businesses across Asia; a new global public-private partnership focused on market transformations for efficient appliances and industrial equipment; an effort to streamline processes for government approval and assistance of clean energy projects in the Philippines; and the role of a new government agency facilitating sustainable energy in Bangladesh.

Session Chair

Peter du Pont, Vice President, Government Services

Nexant

Presenters

Alan Dale Gonzales, Executive Director

Full Advantage

Developing a Sustainable PPP Platform for the Private Financing Advisory Network (PFAN) in Asia

The CTI Private Financing Advisory Network (PFAN) – Asia aims to bridge the gap between the developers of clean energy projects and potential investors. PFAN-Asia's goal is to mobilize USD 1.0 billion in clean energy investments and reduce GHG by 40 million tCO_2e by the end of August 2018. To date, over 100 clean energy projects have been inducted into this pipeline and are receiving support through PFAN's proven model of mentorship and advisory support, focused on bankable business plans and investor targeting through well-structured investor pitches. Using the expanded network of Mentors and Country Coordinators, the PFAN-Asia Operator is expected to operate as a valuable resource for clean energy projects looking to improve their development and financing prospects.

Jessie Todoc, Program Consultant

International Copper Association

Unite for Efficiency: a Public-Private Partnership Focused on Market Transformations to Bridge the Energy Efficiency Gap

Unite for Efficiency is a public-private partnership focused on market transformations towards efficient appliances and industrial equipment. The partnership aligns with the UN's Sustainable Energy for All initiative and it is an official energy efficiency "accelerator." The program has a mandatory minimum energy performance standards (MEPS) in six product categories that will account for 60% of global energy consumption by 2030. Through MEPS and associated policies, massive reductions in electricity consumption and CO2 emissions are possible. This requires cultural change, primarily in developing Asia, as a growing middle class will purchase hundreds of millions of appliances in the coming years. Engagement with the private sector is critical for market transformations to take place successfully in an accelerated time frame.

Zenaida Monsada, Undersecretary

Department of Energy, Philippines

Developing a Streamlined Process for Incentivizing Renewable Energy Projects in the Philippines

The Philippine Department of Energy (DOE) with the United States Agency for International Development (USAID) is designing the Energy Virtual One Shared System (EVOSS), to accelerate the increased share of clean energy in the total energy mix. The DOE together with USAID's B-LEADERS project is reviewing procedures, time and costs related to increasing private investments in the clean energy sector. The review involves understanding varied nuances, legalities and sequential steps characterizing each RE technology and each government agency. Since DOE is leaning towards a technologically-driven and supported application and processing process, its IT specialists and experts are evaluating information system requirements integral for a smooth facilitation and coordination of documentary exchanges within the DOE and across all key government partners.

Siddique Zobair, Joint Secretary and Member

Sustainable and Renewable Energy Development Authority

The Bangladesh Sustainable and Renewable Energy Development Authority (SREDA) - Role and Responsibility

Trevor W. Lewis, Senior PPP Specialist, Office of Public-Private Partnership

Asian Development Bank

International Infrastructure Support System

The International Infrastructure Support System (IISS) is an online project preparation workspace for public sector project teams to prepare infrastructure projects. IISS is a project management tool with integrated online guidelines and standardized templates (general and sector specific). The ultimate goal of IISS is to improve the quality, consistency and transparency of infrastructure project preparation being undertaken by public sector proponents, thereby increasing options for potential financing, including PPPs. ADB piloted the original and earlier version of IISS and has now been joined by a group of multilateral development banks that are collaborating to scale it up globally.

Session 17: Scaling Up Climate Finance

19 June, 10 a.m.–12:30 p.m.

Auditorium Zone B-C

This session will draw on past and present experience to discuss how the international community can scale up the financing available to address the climate crisis. The presentations will cover private sector perspectives on clean energy financing and collaboration with public sector players; a venture capital approach in China; experience with multilateral agreements and financing mechanisms, from the Montreal Protocol to the Green Climate Fund; recent experience of ADB's private sector group with grant and concession financing mechanisms; and more than 20 years of experience at the Global Environment Facility (GEF) supporting energy efficiency projects.

Session Chair

Samuel Tumiwa, Deputy Representative, North American Representative Office

Asian Development Bank

Presenters

Sungwoo Kim, Regional Head of Climate Change & Sustainability

KPMG Asia Pacific

Perspective of Private Sector on Climate Financing

The presentation will analyze public versus private interventions in climate financing, and climate financing versus alternative financing, including a look at strategic investments, the perspectives from Institutional Investors, funds and banks, a analysis of innovative programs including bond guarantees and project acquisition and an analysis of differentiated strategies depending on investor types.

Fred Chang, Managing Director

Unicorn Capital

A New Type of Cleantech Climate Fund

Unicorn Capital, a Shanghai-based venture capital firm, has developed a cross-border focused investment model that accelerates the commercialization of clean energy technologies from around the world in the People's Republic of China (PRC) for future global deployment and success. The PRC can be a solution and an integral part of the global cleantech industry value chain by serving as a 'cleantech collaboratory' for cross-border co-commercialization, early adopter deployments and capital efficient scale-up, thus effectively reducing the inherent capital intensive nature and long lead times of cleantech sector investing. Unicorn Capital employs a cross-border, intellectual property driven investment approach to fund and help Western companies leverage the PRC's favorable market, policy, financing, manufacturing and commercialization environments to quickly cross the commercialization chasm.

Dan Millison, Manager

Transcendergy, LLC

The Road from Montreal

Largely forgotten on the road to Paris, the Montreal Protocol is the only international environmental agreement successfully implemented, but that success has yet to be replicated. Lessons learned from Montreal onwards will be presented, with specific recommendations for an enabling framework required for the next phase in the war on climate change. New climate financing can catalyze a paradigm shift to low-emissions development if public behavior changes, and fossil fuel subsidies are eliminated in parallel with scale up of new business models, technologies, and systems that are more economically efficient than today's fossil fuel industries. Commercial financing for adaptation is needed at scale to win the war on climate change.

Lazeena Rahman, Investment Specialist, Indonesia Resident Mission

Asian Development Bank

Precision-Guided Concessionality and Game-Changing Direct Investment to Transform the RE Landscape.

Renewable energy potential in the developing countries of Asia remains underdeveloped with respect to technical potential, due to weak regulatory frameworks, distorted energy pricing and tariff policies, the limited variety of financing instruments, and minimal requirements for private sector investment in utility-scale RE. However, concessional funds have become available for innovative financing approaches. In Thailand, modest amounts of grant funds were used in construction contingency to finance the first utility-scale thin-film PV plant. In Indonesia, concessional mezzanine and early-stage loans from the Clean Technology Fund were used to finance 570 MW of potential new geothermal capacity. Building on this, green bonds and other new instruments are being tested. Case studies will be presented, including lessons applicable to the Green Climate Fund.

Ming Yang, Senior Climate Change Specialist

Global Environment Facility

GEF Experience in Financing Energy Efficiency Projects in Asia

Globally, energy efficiency has become the first fuel to meet rising energy demand and mitigate carbon emissions. EE investment has been priority as the share of GEF funds utilized for EE ranked top among GEF program strategic areas. By May 2015, GEF had invested approximately US$8.5 billion in over 150 countries in all types of climate change mitigation projects. Over 30% was utilized EE and with most investment taking place in Asia. The GEF utilized over 80% of its grant to finance EE policy instruments including new policy, standards, codes, regulations, technology transfer, and capacity buildings in its energy efficiency financing portfolio. The GEF intends to finance more projects that integrate EE with other low carbon technology areas.

Binu Parthan, Regional Adviser for Asia

Green Climate Fund

Update on the Green Climate Fund

The Green Climate Fund has now reached effectiveness and is poised to make financial commitments to projects and programmes before UNFCCC CoP-21 in Paris. The Fund has a strategic role to play in adoption and implementation of a Universal Climate Agreement at Paris. The presentation will provide updates on country engagement, readiness support, accreditation and pipeline development by the Fund. The presentation will also highlight the salient features of the Fund and share perspectives on promoting a paradigm shift in the clean energy space in Asia.

DAY 5

Session 18: Local Innovation Capacity

19 June, 10 a.m.–12:30 p.m.

Auditorium Zone D

The capacity and scope for innovation in clean energy technologies in Asia has been increasing rapidly in recent years. The presentations in this session will describe approaches for supporting local innovation across a range of countries, using an array of tools and collaboration platforms. The richness of this experience will demonstrate the capacity for innovation that exists within the region, and should lead to a robust discussion about ways to build on and accelerate this innovation.

Session Chair

Toru Kubo, Principal Climate Change Specialist, Energy Division, Southeast Asia Department

Asian Development Bank

Presenters

Fan Zhang, Presdent

Hunan Innovative Low Carbon Center

Hunan Province— An Emerging Global Cleantech Hub

Hunan is rapidly establishing itself as a major center for the automobile, industrial equipment, and media sectors. The province, with support from ADB's Climate Technology Finance Centre, aims to become a leading global hub for cleantech entrepreneurs and businesses. By 2020, the vision is to establish a 100 billion sized industry cluster, and attract US $10 billion from foreign investors and 200 billion CNY from the private sector for cleantech development. Following international best practices, Hunan has launched a program that includes a new cleantech venture capital fund, a cleantech incubator center, a cleantech marketing platform, and a policy mechanism. We present the specific cleantech opportunities and challenges facing Hunan, progress of planned activities and examples of emerging cleantech successes.

K. A. Chamindi Seneviratne, JR Professional Engineer

Sri Lanka Sustainable Energy Authority

Assessment of Renewable Energy Technologies using Multi-Criteria Decision Analysis

This presentation describes a systematic structure to prioritize different resource-technology-application options for achieving the national Renewable Energy (RE) development targets in Sri Lanka's electricity sector. Available options are assessed against implementation difficulty using a set of criteria including technical, financial, social, environmental, and other driving factors. The application of the methodology and its outcomes are discussed in the context of Sri Lanka. This methodology identifies potential gaps in knowledge, technology, market structure, regulatory, institutional and public acceptance. Furthermore this can be used for the preparation of future plans of RE as well as to assist in policy making related to the energy sector at large.

Yanis Boudjouher, Co-founder and Director

IPEx Cleantech Asia

Bridging Low Carbon Technologies into Developing Asia: IPEx Cleantech Asia™s Experience in the People's Republic of China

IPEx is a recently established low carbon technology (LCT) marketplace and brokerage platform, supported by the ADB, designed to transfer LCTs to developing Asia by matching technology adopters with suitable low carbon technology solutions. This unique LCT platform targets barriers to technology transfer. The platform lowers transaction costs and informational

barriers for technology buyers and providers. By screening and performing IP and technology due diligence, IPEx reduces risk to adopters. IPEx provides services to technology buyers and providers, including business and IP advisory services, transaction structuring and negotiation support, as well as raising capital if required. IPEx will present its experience in China, where it is working with local partners to facilitate the transfer of clean technologies.

Bas Melssen, Director, Biomass Conversion

Novozymes

2nd Generation Ethanol: Addressing energy security and creating high value economies from agricultural waste in the Philippines

Novozymes is the world leader in bio-innovation and a key enabler of the second-generation (2G) or cellulosic ethanol industry. Novozymes provides advanced enzyme solutions to most commercial-scale 2G ethanol facilities including the world's only operating sugarcane waste-to-ethanol plants. The Philippines is the only nation in Southeast Asia with a government enforced ethanol blending mandate. However, due to agricultural challenges, only about a third of required ethanol is generated locally. With blending mandates set to increase, ethanol imports are set to increase in tandem. The production of 2G ethanol and power from locally available sugarcane biomass provides an attractive alternative to ethanol imports to meet blending mandates.

DAY 5

Closing Plenary: The Next Decade of Clean Energy

19 June 2015, 2 p.m.–4 p.m.

2015 ACEF Review

2 p.m.–3 p.m.

A key part of ACEF is coming together at the end of the week to review, discuss, and deliberate—our progress, challenges, and the way forward. Co-Chairs of the Six Thematic Track will participate in a panel discussion and reflect on the key points discussed in the parallel sessions, on what they have learned during the week, and their key messages for the ACEF community.

Moderator:

Ashok Bhargava, Asian Development Bank

Panelists (Track-Co-Chairs):

- Energy Efficiency: Tom Dreessen, EPS Capital Corporation
- Renewable Energy: Christoph Menke, Energy Technology Schneirdershof
- Energy Access: Athena Ronquillo-Ballesteros, World Resources Institute
- Policy and Regulation: Wei-Nee Chen, Sustainable Energy Development Authority
- Clean Energy Finance: Daniel Wiedmer, Asian Development Bank
- Clean Energy Technology: Jean-François Gagné, International Energy Agency

Keynote Speech

3 p.m.-3:30 p.m.

Ralph Sims

Professor, School of Engineering and Advanced Technology, Massey University, New Zealand

Expanding Our Clean Energy Boundaries: Climate-Smart Equals Energy-Food-Water Smart

Prof. Sims will close ACEF by laying out a vision for clean energy that extends besides the normal boundaries that many of us have. He will lay out the urgent need for policymakers to examine energy and climate challenges in a broader framework. For example, the agriculture-food supply chain consumes around one-third of global end-use energy and results in around one-fifth of total greenhouse gas emissions. And demand for food and higher-protein diets will continue to increase. It is therefore vital to decouple the agri-food supply chain from its current dependence on fossil fuels. At the same time, productivity needs to increase and growing water constraints must be carefully managed. Prof. Sims will emphasize the need to optimize all the co-benefits that clean energy technologies can provide, alongside climate change mitigation.

Raffle Draw (10 iPads)

3:30 p.m.–3:45 p.m.

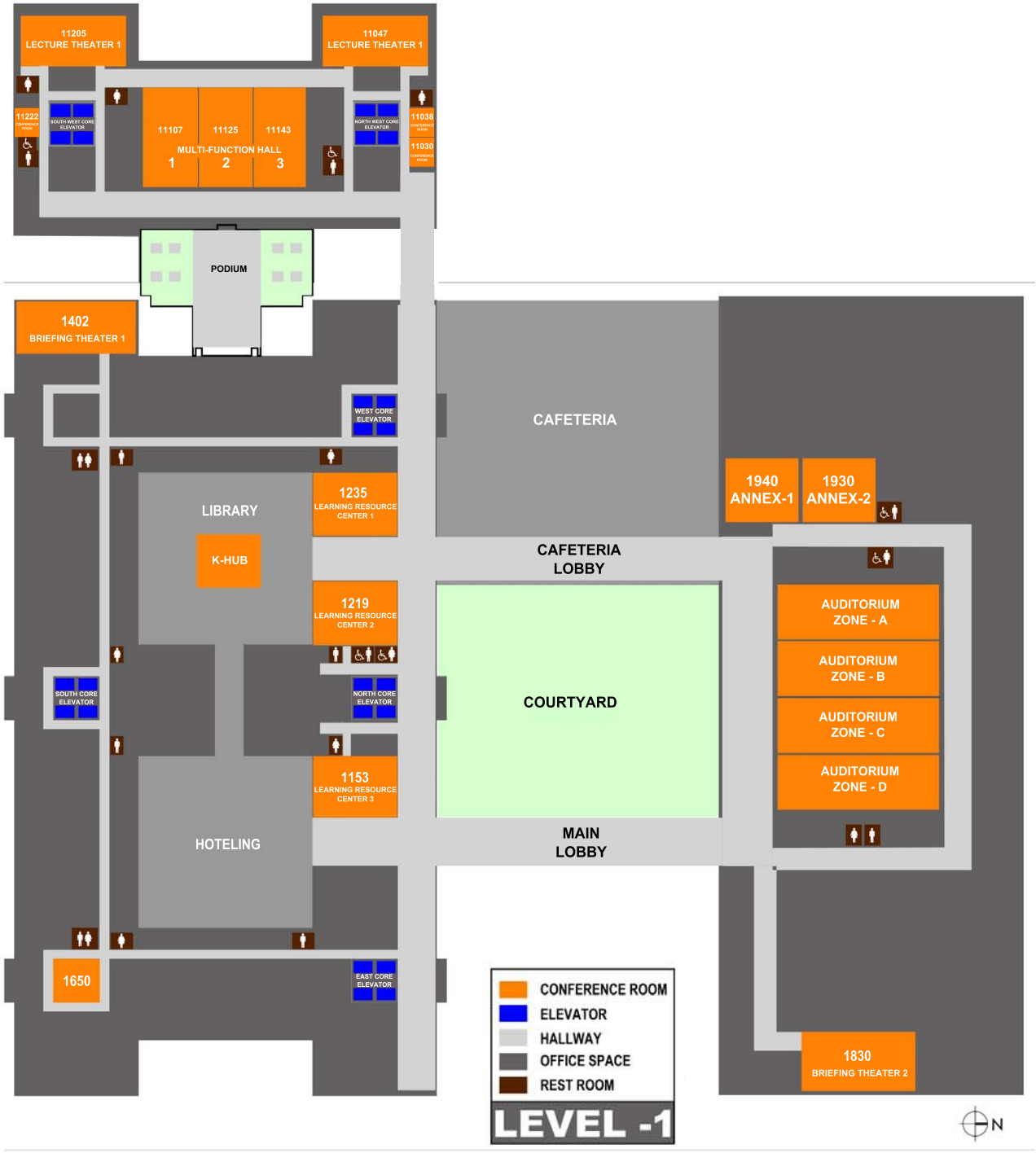
As we have done for the past two years, ACEF will continue the tradition of having a raffle drawing and giving away free iPad Minis and iPads to a lucky few. Entrance to the raffle requires that participants complete the ACEF evaluation form!

Closing Remarks

3:45 p.m.–4 p.m.

Wencai Zhang

Vice President (Operations 1)
Asian Development Bank


11205
LECTURE THEATER 1
11047
LECTURE THEATER 1
11222
SOUTH WEST CORE ELEVATOR
11107
11125
11143
MULTI-FUNCTION HALL
1
2
3
NORTH WEST CORE ELEVATOR
11038
11030
PODIUM
1402
BRIEFING THEATER 1
WEST CORE ELEVATOR
CAFETERIA
1940
ANNEX-1
1930
ANNEX-2
LIBRARY
1235
LEARNING RESOURCE CENTER 1
K-HUB
CAFETERIA
LOBBY
AUDITORIUM
ZONE - A
AUDITORIUM
ZONE - B
AUDITORIUM
ZONE - C
AUDITORIUM
ZONE - D
1219
LEARNING RESOURCE CENTER 2
SOUTH CORE ELEVATOR
NORTH CORE ELEVATOR
COURTYARD
1153
LEARNING RESOURCE CENTER 3
HOTELING
MAIN
LOBBY
1650
EAST CORE ELEVATOR
CONFERENCE ROOM
ELEVATOR
HALLWAY
OFFICE SPACE
REST ROOM
LEVEL -1
1830
BRIEFING THEATER 2
N

About the Asia Clean Energy Forum

The Asia Clean Energy Forum is the premier knowledge-sharing event on clean energy in the region. It attracts a diverse group of stakeholders including governments, national and multinational banks, carbon and clean energy investment funds, project developers and service providers, academics and civil society, and development partners and other international organizations. The forum provides a dynamic platform for crosscutting debates and discussions on clean energy development and financing, climate change, energy access and security, and governance in the energy sector.

About the Asian Development Bank

ADB's vision is an Asia and Pacific region free of poverty. Its mission is to help its developing member countries reduce poverty and improve the quality of life of their people. Despite the region's many successes, it remains home to the majority of the world's poor. ADB is committed to reducing poverty through inclusive economic growth, environmentally sustainable growth, and regional integration.

Based in Manila, ADB is owned by 67 members, including 48 from the region. Its main instruments for helping its developing member countries are policy dialogue, loans, equity investments, guarantees, grants, and technical assistance.

FORUM CONTACTS

Aiming Zhou
Chair
azhou@adb.org

Peter du Pont
Co-Chair
pdupont@nexant.com

For more information, please visit

www.asiacleanenergyforum.org

ASIAN DEVELOPMENT BANK
6 ADB Avenue, Mandaluyong City
1550 Metro Manila, Philippines
www.adb.org