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ASIA CLEAN ENERGY FORUM 2019

DEEP DIVE WORKSHOP

NEXT-GEN UTILITIES FOR A SMART ENERGY FUTURE

EVENT SUMMARY

Friday, 21 June 2019

Venue: Asian Development Bank,
Manila, Philippines



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BACKGROUND

The Asia Clean Energy Forum (ACEF) is one of the leading clean energy events in the Asia region, which focuses on bringing together a diverse community of practitioners and implementers to identify, discuss and address the key challenges of accelerating deployment of clean energy. This year, ACEF, focused on effectively 'partnering for impact' to increase the scale and speed of clean energy deployment in Asia. The Forum, held between 17th and 21st June 2019, was co-organized by Asian Development Bank (ADB), United States Agency for International Development (USAID) and Korean Energy Agency (KEA). Over 1,600 clean energy stakeholders from 75 countries participated in week long deliberations at ACEF 2019 which included 22 Deep Dive Workshops (DDWs).

DDW on Next-gen Utilities for a Smart Energy Future

USAID, in collaboration with the Department for International Development (DFID) and ADB, organized a DDW on "Next-gen Utilities for a Smart Energy Future" on 21st June 2019 as a part of ACEF 2019. The DDW provided an overview of the work being done by USAID and DFID to transform the electricity distribution companies in India and the lessons learnt. In addition, it provided a platform to foster regional cooperation, support networking and build business opportunities in the area of smart power distribution.



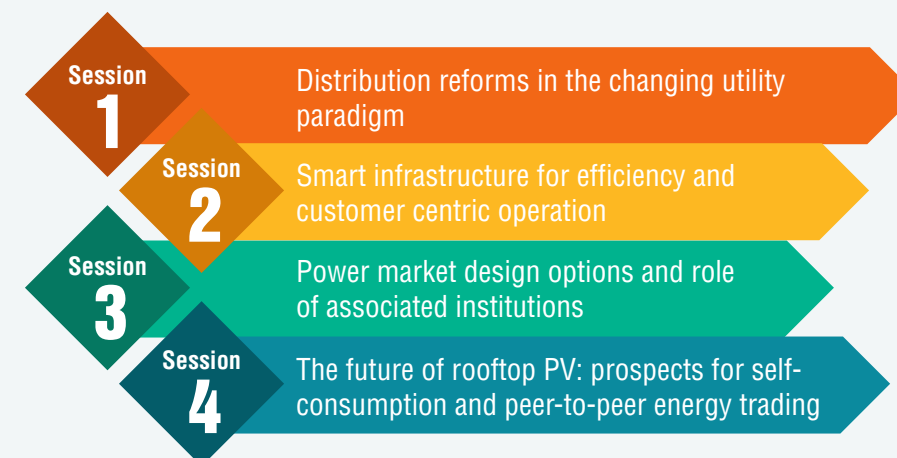
126

Participants



26

Countries



INAUGURAL SESSION

Michael Satin (Director-Clean Energy & Environment Office, USAID) welcomed all participants and made the opening remarks. He mentioned that electric utilities across the globe are at the cusp of redefining themselves due to the changing paradigm of new energy future and they need to constantly learn to adopt new ways of doing business.



Priyantha Wijayatunga averred that ADB is committed to support its partners in transitioning to a low carbon economy through adoption of energy efficient and advanced technologies. As an example he mentioned that ADB is providing about US \$1 billion loan to India's largest energy service company - Energy Efficiency Services Limited (EESL), for supporting large scale deployment of electric vehicles and associated charging infrastructure, smart meters and solar rooftops.

Alastair Totty stated that the UK government is committed to expand its energy cooperation initiatives by forging strategic partnerships with the governments, bilateral/multilateral organizations, and other relevant stakeholders on utility modernization/ distribution reforms in South Asia.

Gloria D. Steele, Acting Assistant Administrator, USAID delivered the Keynote Address and highlighted the objectives of the workshop. She reiterated USAID's commitment to partnering with the countries in the Asia region in advancing their energy and economic security goals. In this regard, she highlighted USAID's Indo-Pacific Strategy and Asia EDGE (Enhancing Development and Growth through Energy) initiatives and announced a new partnership between USAID/India and ADB on utilities modernization.

KEY TAKEAWAYS

- A well-performing distribution utility is a must to ensure that people get reliable, affordable and uninterrupted power; a fundamental requirement to a modern day living.
- It is essential to start early on the path towards utility modernization.
- Utilities need to constantly learn and adopt new ways of doing business.



Session 1

DISTRIBUTION REFORMS IN THE CHANGING UTILITY PARADIGM

This session focused on sharing experiences related to (i) mega trends that are influencing the power distribution sector and impact of such trends on utility's business models and operations, (ii) dovetailing responses to deal with legacy issues with strategies to respond to the challenges posed by changing environment and (iii) implementing structural and operational reforms in the power distribution sector. The session was chaired and moderated by Jiwan Acharya, Principal Energy Specialist, South Asia Energy Division, ADB.



SPEAKERS

1. Jiwan Acharya, Principal Energy Specialist, South Asia Energy Division, ADB (Chair).
2. Vikas Gaba: Partner, KPMG in India.
3. Vishal Kapoor, Director-Distribution, Ministry of Power (MoP), Government of India.
4. Bodha Raj Dhakal, Project Manager, Nepal Electricity Authority (NEA).
5. Kavita Sinha, Regional Director for South and East Asia, European Climate Foundation.
6. Natalia Kulichenko-Lotz, Lead Energy Specialist, World Bank.
7. Meliesa L. Robante, Institutional Services Department Manager, DASURECO.
8. Mark Mills: Principal Legal Adviser, Ofgem.

The session commenced with a theme setting presentation by Vikas Gaba, Partner, KPMG in India. He highlighted the mega trends that are redefining the utility's business models and stated that the utilities of the future will be an inter-connected system of multiple assets synced together to meet the dynamic customer and grid requirements.

This was followed by a presentation by Vishal Kapoor, Director-Distribution, Ministry of Power, Government of India, who shared learnings and insights from various reform initiatives implemented by the Government of India. He said that key pillars for successful implementation of reform initiatives were: accountability, transparency, flexibility in implementation, incentives based approach, cooperative federalism and ensuring availability of funds.

Subsequently, Bodhal Raj Dhakal, Project Manager, Nepal Electricity Authority shared the key distribution reform requirements of Nepal such as restructuring of NEA, enabling environment for private participation through Public Private Partnership (PPP), tariff reflective costs and removing subsidies and enhanced governance standards. He also emphasized on the need for fostering bilateral energy cooperation with India, Bhutan and Bangladesh for realization of economic benefits.

Kavita Sinha, Regional Director for South and East Asia, European Climate Foundation, stated that energy transformation is the new driver for utility disruption. She spoke about the business opportunity presented by the energy transition and exponentially changing utility paradigm. These opportunities are characterized by expanding ecosystem of players, disrupted value chain, prosumers, customizable services, customer-centricity, etc.

Natalia Kulichenko-Lotz, Lead Energy Specialist, World Bank, shared her experience related to implementing distribution sector reforms in Nigeria. She stated how distribution reforms initiatives in Nigeria have failed to achieve the desired outcomes due to issues related to poor governance, ineffective due diligence, administrative delays, tariff shortfall, etc. and shared key learnings which could be drawn by other developing economies.

The session also witnessed participation from a private sector utility in the host country-Philippines. Meliesa Robante, Institutional Services Department Manager, DASURECO, highlighted the benefits of enhanced private sector participation in distribution sector. She also spoke about the current technical advancements being adopted by the distribution utilities to meet future energy trends.

Mark Mills, Principal Lead Adviser, Ofgem, shared the UK's experience of introducing retail competition in the electricity distribution sector. He provided an overview of the market mechanism adopted by the UK regulator to deliver commercial benefits as well as protect the interests of the consumers.

KEY TAKEAWAYS

- Emerging technology will serve as a catalyst for sustainable, reliable and efficient power supply.
- Distribution reforms should be designed to encourage investment, business and growth.
- Rural electrification, clean energy deployment and digitalization provides significant business opportunity for utility disruption.
- Robust market mechanisms are needed to ensure customer services as per regulations.



Session 2

SMART INFRASTRUCTURE FOR EFFICIENCY AND CUSTOMER-CENTRIC OPERATION

Session 2 focused on sharing experiences (challenges, learnings, benefits) regarding deployment of smart technologies for enhanced efficiency and customer experience. This session was chaired and moderated by Vishal Kapoor, Director-Distribution, Ministry of Power, Govt. of India.



SPEAKERS

1. Vishal Kapoor, Director-Distribution, Ministry of Power (Chair).
2. Apurva Chaturvedi, Senior Clean Energy Specialist, USAID/India.
3. Natalia Kulichenko-Lotz, Lead Energy Specialist, World Bank.
4. Hendrik Tiesinga, Chief Strategy Officer, New Energy Nexus.
5. Aanchal Kumar, Environment Officer, Energy Efficiency Services Limited.
6. Eloise Burnett, Manager, Carbon Trust.

The session commenced with a context setting presentation from Apurva Chaturvedi, Senior Clean Energy Specialist, USAID/India wherein she laid focus on the digital disruptions influencing the power sector and how utilities are evolving globally to become smart and agile to respond to these disruptions. She also spoke about the key challenges as well as enablers for scaling up smart infrastructure deployment in South Asia.

This was followed by a presentation from Natalia Kulichenko-Lotz, Lead Energy Specialist, World Bank, who highlighted the results of the utility-scale solar rooftop programs in Vietnam, small scale solar energy grids in West Africa and planning and VRE integration in Pakistan implemented under the World Bank's Energy Sector Management Assistance Program (ESMAP).

Subsequently, Hendrik Tiesinga, Chief Strategy Officer, New Energy Nexus, laid focus on how startups can help energy companies innovate and become customer-centric. In this regard, he highlighted a few examples where partnerships between startups and power utilities were forged to accelerate the adoption of new technologies in power distribution.

Aanchal Kumar, Environment Officer, EESL, introduced a case study from India on deployment of Electric Vehicle charging infrastructure. She highlighted the key contours of the business model developed by EESL with technical support from USAID under its "Smart Power for Advancing Reliability and Connectivity (SPARC)" program.

Eloise Burnett, Manager, Carbon Trust, spoke on best practices for enhancing consumer engagement and participation to reap benefits of smart infrastructure. In this regard, she presented a case study from UK, wherein smart meter data was used to engage with consumers to drive energy savings. The session ended with engaging discussions between the speakers and participants related to approach for determination of tariff for Electric Vehicle charging, strategies for engaging fleet operator for scaling-up adoption of electric vehicles, innovations in startup-utility partnerships, etc.

KEY TAKEAWAYS

- Smart infrastructure helps utilities be responsive to consumer needs and imbibing technological advancements.
- Battery storage will be critical to facilitating VRE scale-up.
- Startups can help energy companies innovate and become customer-centric.
- Business models to be flexible to enable ease of adoption.
- Unlocking the benefits from transitioning to a smart energy system, is predicated on a certain level of consumer participation at every level of the energy system.



Session 3

POWER MARKET DESIGN AND ROLE OF ASSOCIATED INSTITUTIONS

Session 3 focused on sharing experiences and learnings related to power market design options, RE forecasting and scheduling, feed-in tariffs with contracts for difference, capacity agreements, balancing and ancillary services and role of associated institutes. This session was chaired and moderated by Anish De, Partner, KPMG in India.



SPEAKERS

1. Anish De: Partner, National Head - Energy & Natural Resources, KPMG in India (Chair).
2. Joanne Dixon: Senior Transactions Advisor, MRC Consultants & Transactions Advisers.
3. Mark Mills: Principal Legal Adviser, Ofgem, UK.
4. Pankaj Batra: Project Director, IRADe.
5. Hans-Arild Bredesen: CEO, Nord Pool Consulting AS.

The session commenced with a presentation from Anish De, who stated that as renewables assume centrality in the power sector, traditional systems and processes will need radical changes in order to enable integration. New market design and associated institutional mechanisms have to evolve substantially to meet the needs of the emerging environment. This was followed by presentations from other speakers on their experiences in development of electricity markets in different parts of the world.

Joanne Dixon, Senior Transactions Advisor, MRC Consultants & Transactions Advisers, provided insights and learnings from implementation of the Competitive Trading Bilateral Contract Market (CTBCM) model in Pakistan.

Mark Mills, Principal Legal Adviser, Ofgem talked about the UK's experience in designing wholesale energy markets. He covered the existing challenges, reforms processes, potential of introducing Distribution System Operator (DSO) and Contract for Difference (CfD) and provided key take-ways and learnings for the emerging economies in Asia.

Subsequently, Pankaj Batra, Project Director, IRADe shared the story of power market development in India, highlighting the journey of connecting and integrating regions with demand-supply imbalance through a single grid and developing wholesale power trading mechanism by setting up Power Exchanges.

Sharing the growth story of the Norwegian power market, Hans-Arild Bredesen, CEO, Nord Pool Consulting AS, provided insights on how the European market is evolving in response to emerging trends and why a customer-centric integrated energy marketplace is critical to unlock the value of local flexible resources and support the drive to a sustainable, emission-free future.

The session ended with engaging discussions between the speakers and participants. Some of the questions raised to the panel included challenges in transition to deeper power markets, ways to resolve RE curtailment etc.

KEY TAKEAWAYS

- Within the broad market construct there are large number of options and pathways and choices need to be exercised.
- There is a fine balance between letting markets flourish and intervening to ensure consumers are protected.
- Change management is needed among all market participants to adjust to market interface points.
- There is a need for all those involved in stewardship of the markets to constantly review and evolve policies in response to changes.
- Integrated energy marketplace is required to unlock the value of local flexible power resources and support the drive to a sustainable, emission-free future.



Session 4

THE FUTURE OF ROOFTOP PV: PROSPECTS FOR SELF-CONSUMPTION AND PEER-TO-PEER ENERGY TRADING

This session was focused on sharing experiences related to innovative business models for deployment of solar rooftop systems, net-metering policies, peer to peer energy trading platforms, compensation mechanism, etc. The session was chaired and moderated by Abhishek Ranjan, Additional Vice President and Head of Renewables, DSM & EE and Energy Analytics, BSES Rajdhani Power Limited.



SPEAKERS

1. Abhishek Ranjan, Additional Vice President and Head of Renewables, DSM & EE and Energy Analytics, BSES Rajdhani Power Limited (Chair).
2. Jaquelin Cochran: Grid Systems Group Manager, NREL.
3. Supawan Saelim: Renewable Energy Policy Specialist, USAID Clean Power Asia.
4. Salima Jahan: Joint Secretary, Government of Bangladesh.
5. Aileen Dalanon: Team Lead, Tariff Management under Regulatory Management Office, MERALCO.
6. Kirapat Jiamset: Governor, Metropolitan Electric Authority (MEA), Thailand.
7. Wei-nee Chen: Chief Corporate Officer, Sustainable Energy Development Authority (SEDA), Malaysia.

The session began with a context setting presentation from Jaquelin Cochran, Grid Systems Group Manager, NREL who provided insights into the emerging trends, opportunities and challenges of Distributed Solar Rooftop (DPV) market. She highlighted the primary trends dominating the sector which included re-evaluation of DPV compensation mechanisms, proliferation of behind-the-meter storage paired DPVs, access of DPV to low income customers and grid integration controls and services.

Subsequently, opportunities and challenges specific to the context of South and South East Asian regions were discussed in detail by Supawan Saelim, Renewable Energy Policy Specialist, USAID Clean Power Asia.

Salima Jahan, Joint Secretary, Government of Bangladesh, provided insights on the rooftop solar programs in Bangladesh and shared her experience of overcoming the challenges to implementing net metering program in Bangladesh.

This was followed by a presentation from Aileen Dalanon, Team Lead, Tariff Management, MERALCO (utility in Philippines), who provided an overview of the MERALCO's net metering program and the critical success factors driving its successful implementation.

Kirapat Jiamset, Governor, Metropolitan Electric Authority, highlighted the results of the Energy Regulatory Commission's Sandbox project wherein a pilot project for setting up Peer-to-Peer (P2P) energy exchange platform has been implemented.

This was followed by a presentation from Wei-nee Chen, Chief Corporate Officer, Sustainable Energy Development Authority (SEDA), who shared her experience of implementing the net-energy metering program in Malaysia.

The session ended with engaging discussions between the speakers and participants on benefits implementing peer to peer energy markets, approach for determination of feed-in-tariff, net-metering policies, etc.

KEY TAKEAWAYS

- Expanding access to low-income consumers can bring benefits to all.
- Policy makers should consider following aspects while developing solar rooftop policies (i) economic benefits – utilities and consumers and (ii) grid integration.
- Peer-to-Peer (P2P) energy exchange platform – enables market based expansion of decentralized generation.



ASIA CLEAN ENERGY FORUM 2019

PARTNERING FOR IMPACT

MANILA | 17–21 JUNE 2019



Deep Dive Workshop

Friday, 21 June 2019, 8:30 a.m. – 5:00p.m.

Multifunction Hall 2

Next-gen Utilities for a Smart Energy Future



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Agenda

8:30-9:00	Registration
9:00-9:40	Inaugural Session
9:00- 9:05	Welcome Address – Mr. Michael Satin, Director-Clean Energy & Environment Office, USAID
9:05-9:15	Special Remarks- Dr. Priyantha Wijayatunga, Director, South Asia Energy Division, ADB
9:15-9:25	Special Remarks – Mr. Alastair Totty, Deputy Head of Mission at British Embassy, Manila
9:25-9:35	Key Note Address – Ms. Gloria D. Steele, Acting Assistant Administrator, USAID
9:35-9:40	Vote of Thanks- Mr. Michael Satin, Director-Clean Energy & Environment Office, USAID
9:40-11:10	Session 1: Distribution reforms in the changing utility paradigm Chair: Mr. Jiwan Acharya, Principal Energy Specialist, South Asia Energy Division, ADB (session moderated by Chair) Session Brief: A number of initiatives related to financial turnaround schemes, strengthening of electricity network, private participation models in distribution companies, etc. are being undertaken by different countries for improving the operational and financial performance of the electricity distribution companies. At the same time, utilities today are significantly influenced by the new and emerging trends (rapid urbanization, demographical changes, climate change and geo-political changes, and emergency of digital technologies) that are significantly altering their business models and operations. As utilities move ahead to address their legacy issues, there is need to complement structural and operational reforms with strategic interventions that enable utilities to respond to the new age challenges, and opportunities in a considered manner. The speakers in this session will focus on the following aspects: • Mega trends influencing the power distribution sector, and impact that such trends are having on the utility business models and operations • Experience of utilities in dealing with legacy issues i.e. financial and operational improvement, and dovetailing response to challenges that the new environment poses • Country experiences related to energy transitions, implementing structural and operational reforms, and private sector participation issues,
9:40-9:50	Distribution reforms – Context setting (Mr. Vikas Gaba, Partner, KPMG in India)
9:50-10:00	Distribution sector reform programs of India (Mr. Vishal Kapoor, Director-Distribution, Ministry of Power, India)
10:00-10:10	Distribution sector reforms in Nepal (Mr. Bodha Raj Dhakal, Project Manager, Nepal Electricity Authority)

10:10-10:20	Future of distribution utility in energy transition (Ms. Kavita Sinha, Regional Director for South and East Asia, European Climate Foundation)
10:20-10:30	Distribution sector reforms – Learnings from Nigeria (Dr. Natalia Kulichenko-Lotz, Lead Energy Specialist, World Bank)
10:30-10:40	Private sector participation in electricity distribution in Philippines (Ms. Meliesa L. Robante, Institutional Services Department Manager, DASURECO)
10:40-10:50	Electricity retail competition – Lessons and experience of UK (Mr. Mark Mills, Principal Legal Adviser, Ofgem)
10:50-11:10	Q&A, Discussion
11:10-11:20	Tea Break
11:20-12:30	Session 2: Smart infrastructure for efficiency and customer centric operation Chair: Mr. Vishal Kapoor, Director-Distribution, Ministry of Power, Govt. of India (session moderated by Chair) Session Brief: In order to sustain and support the structural changes in the new energy paradigm, a transition to ICT enabled smarter grid becomes critical. A smart energy system would help deliver electricity more effectively and efficiently than the systems of today by enabling real time grid visibility and control and empowering consumers with greater control and choices. The speakers in this session will discuss on their experience (challenges, learnings, benefits) in deploying smart technologies for enabling operational, financial and social benefits, including integration of new electricity loads. The discussion would also focus on potential business models for accelerating investments in smart grid technologies, considering the current constraints on resource and financial capability. Specifically, session would include experience sharing on: ▪ Smart grid business models and technologies – key use cases and tools for informed investments ▪ Digital initiatives to enhance customer experience and participation ▪ Serving new electric loads – Business models for smart EV Charging infrastructure (including G2V and V2G interactions) ▪ Frameworks for institutional strengthening and skill up-gradation in a smart energy future
11:20-11:30	Smart infrastructure- Setting the context (Ms. Apurva Chaturvedi, Sr. Clean Energy Specialist, USAID/India)
11:30-11:40	Global energy technology & policy landscape- lessons learned and best practices for developing nations (Dr. Natalia Kulichenko-Lotz, Lead Energy Specialist, World Bank)
11:40-11:50	Innovations for a customer centric future utility (Mr. Hendrik Tiesinga, Chief Strategy Officer, New Energy Nexus)
11:50-12:00	Business model & financing innovations for accelerating EV charging infrastructure for developing nations - Indian case study (Ms. Aanchal Kumar, Environment Officer, Energy Efficiency Services Ltd (EESL))
12:00-12:10	Best practices in consumer engagement and participation for Smart Grid and EE - UK case study (Ms. Eloise Burnett, Manager, Carbon Trust)
12:10-12:30	Q&A, Discussion
12:30-13:40	Lunch Break
13:40-15:00	Session 3: Power market design and role of associated institutions Chair: Mr. Anish De, Partner, KPMG in India (session moderated by Chair) Session Brief: Efficiently designed Power Markets can serve as an alternative mechanism for supporting both existing capacities and creating new pipelines of capacity. However, the current market mechanisms in most emerging economies of Asia, need to evolve beyond the reliance on just bilateral and Day-Ahead Market (DAM) for effective market operations. In this regard, Real Time Markets (RTM) and Ancillary Services (AS) can play a significant role in improving reliability and control, particularly in view of increasing share of intermittent and variable RE. However, even if the technical abilities exist to implement more advanced market designs, the current readiness of the utilities and their operating realities limit the possibilities of a rapid transition to deep markets in a short period. Hence, the operational practices and role of the utilities and associated institutes need to be re-designed/evaluated for improving efficiencies and enabling their active participation efficiencies in wholesale markets.

	Session participants would thus discuss on their experience in implementing real time market design, RE forecasting and scheduling models, CFDs, Capacity Markets, balancing and ancillary services, etc. Specifically, session would include experience sharing on: • Real time markets design • RE forecasting and scheduling • Feed-in tariffs with contracts for difference¹ • Capacity agreements (within a capacity market)² • Balancing and ancillary services • Role of associated institutes
13:40-13:50	Power market design – Context and theme setting (Mr. Anish De, Partner, KPMG in India)
13:50-14:00	Electricity market development – Case of a South Asian country (Ms. Joanne Dixon, Senior Transactions Advisor, MRC Consultants & Transactions Advisers)
14:00-14:10	UK's experience in design of wholesale energy markets (Mr. Mark Mills, Principal Legal Adviser, Ofgem)
14:10-14:20	Power markets – India experience and new developments (Mr. Pankaj Batra, Project Director, IRADe)
14:20-14:30	Practices in new electricity market design to address the 21st century challenges- Lessons from Nordic Power Market (Mr. Hans-Arild Bredesen, CEO, Nord Pool Consulting AS)
14:30-15:00	Q&A, Discussion
15:00-15:30	Tea Break
15:30-17:00	Session 4: The future of rooftop PV: Prospects for self-consumption and peer-to-peer energy trading Chair: Mr. Abhishek Ranjan, Additional Vice President and Head of Renewables, DSM & EE and Energy Analytics, BSES Rajdhani Power Limited (session moderated by Chair) Session Brief: The rapid decline in costs of solar and wind power, energy storage and more broadly smart grid technology is set to facilitate the growth of Distributed PV (DPV) solution around electricity networks. However, proliferation of distributed PV poses unique challenges to utilities, who often fear loss of revenue – which could possibly be a barrier to deployment. But despite the potential revenue impacts, DPV can provide a significant business opportunity for utilities. The speakers in this session will discuss on their experience in deployment of DPV and approaches that allow utilities to participate in the rooftop PV revolution. Additionally, they will be drawing from experiences in Bangladesh, Thailand, Malaysia, and the Philippines. Specifically, the session would include experience sharing on: ▪ Innovative utility business models for the future of rooftop PV ▪ Net metering for self-consumption ▪ Retail electricity rates and DPV compensation mechanisms ▪ Peer-to-peer energy trading ▪ Costs and benefits of distributed solar from various stakeholder perspectives
15:30-15:40	Setting the scene: Emerging distributed generation trends, opportunities, & challenges (Ms. Jaquelin Cochran, Grid Systems Group Manager, NREL)
15:40-15:45	Setting the scene: Rooftop PV challenges and opportunities for the South and Southeast Asia (Ms. Supawan Saelim, Renewable Energy Policy Specialist, USAID Clean Power Asia)
15:45-15:55	Sharing country experience from Bangladesh: Rooftop PV-experience and learnings from Bangladesh (Ms. Salima Jahan, Joint Secretary, Government of Bangladesh)
15:55-16:05	Sharing country experience from the Philippines: The net metering program in the Philippines (Ms. Aileen Dalanon, Team Lead, Tariff Management under Regulatory Management Office, MERALCO)
16:05-16:15	Sharing country experience from Thailand: Peer-to-peer energy exchange via blockchain pilot in Thailand—a utility's perspective (Mr. Kirapat Jiamset, Governor, Metropolitan Electric Authority (MEA), Thailand)
16:15-16:25	Sharing country experience from Malaysia: The transition towards a Net-energy metering program and a new roadmap towards Peer-to-peer energy trading (Dr. Wei-nee Chen, Chief Corporate Officer, Sustainable Energy Development Authority (SEDA), Malaysia)
16:25-17:00	Discussions and Q&A about challenges and opportunities for the future rooftop PV in ASEAN (moderated by panel chair or USAID India)

¹ Long-term contracts which provide revenue certainty to investors in low-carbon generation such as renewables, nuclear etc.

² Payments for reliable capacity to be available when needed, helping to ensure security of supply.

About USAID SPARC Program

USAID led Smart Power for Advancing Reliability and Connectivity (SPARC) program is a three-year bilateral program with the Ministry of Power. The objective of the program is to support in transforming operational and financial performance of electricity distribution companies by scaling up the deployment of 'Smart Power Systems' to deliver reliable, cleaner, affordable and quality power connectivity 24x7 to their consumers.

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About PSR Programme

The Government of United Kingdom has been supporting the Indian power sector over the last thirty-five years. To support the reforms process further, UK Government, in partnership with the Ministry of Power (Government of India), has approved a GBP 14.3 million Technical Assistance titled, "Supporting Structural Reforms in the Indian Power Sector" (Power Sector Reforms Programme)". The programme commenced in November 2016 and is being delivered at the central and state level. The objective of the programme is to support structural market reforms and the integration of renewable energy into the electricity grid. In specific, it aims to achieve more sustainable and inclusive economic growth, better energy security and poverty reduction and reduced carbon emissions.

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KPMG is the implementing partner for both the programs.

About ADB

ADB in partnership with member governments, independent specialists and other financial institutions is focused on delivering projects in developing member countries that create economic and development impact. As a multilateral development finance institution, ADB support its members and partners by providing loans, technical assistance, grants and equity investments.

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