



Small Grids: Towards 100% Renewable Energy

9 June 2016, Thursday, 14:00 – 17:30

6 ADB Avenue, Mandaluyong City 1550, Metro Manila, Philippines

Hall 2, New Atrium, Asian Development Bank Headquarters

Overview

Electricity systems in island nations of the Pacific, with few exceptions, are heavily reliant on imported fuel oil for their generation. This reliance has long been a cause of concern, and has motivated investments in alternative sources of generation – primarily in solar and wind. However, relatively high costs and technical constraints on the level of penetration of intermittent renewable generation have limited progress in diversification away from fossil fuels for power generation. But the landscape is changing. Advances in grid design and falling costs for solar and wind generation, and in battery storage technologies, offer greater opportunities for small systems to reduce their reliance on fuel oil for power generation. We explore these trends and recent project experiences in this session.

Schedule

Time	Activity
14:00	Opening Address, Xianbin Yao, Director General, Pacific Department, ADB
14:15	Overview of ADB's Energy Portfolio in the Pacific, Michael Trainor, Energy Specialist, Pacific Department, ADB
14:30	Mr. Fuyuki Sagara, Director – Energy and Mining, Japan International Cooperation Agency (JICA) High dependency on imported fossil fuel causes low energy security, and excessive promotion of Renewable Energy leads to unreliable power supply especially in the pacific island countries. As a possible solution to meet those challenges, JICA has launched its "Hybrid Islands Program" proposing optimum development of renewable energy together with appropriate and economical O&M of diesel engine generators. Optimum development of RE should also be carefully considered together with the aspect on additional investment cost required for grid stabilization mechanism (e.g. energy storage, output restriction, etc.) .
15:00	Mr. Pradip Verma, Chief Executive Officer, Solomon Islands Electricity Authority (SIEA) Mr. Verma will be discussing Solomon Islands Electricity Authority ambitious plans to expand access in Solomon Islands through the roll-out of renewable hybrid mini-grids. Mr. Verma will discuss key challenges and lessons learnt.

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Manila, Philippines 6-10 June 2016



15:30	Coffee Break
15:45	Dr Michael Ottaviano, Carnegie Wave Energy Dr. Ottaviano's presentation will cover Carnegie's innovative CETO wave technology that harnesses the enormous renewable energy present in our ocean's waves and converts it into zero-emission electricity and zero-emission desalinated water. He will also describe through a series of case studies an exciting new development in mixed renewable microgrids (solar, battery, diesel, wave etc) that Carnegie and its microgrid alliance partner, Energy Made Clean, are delivering projects in island, fringe-of-grid and on-grid locations. Carnegie recently took a 35% stake in Energy Made Clean, Australia's leading solar/battery microgrid EPC.
16:15	Ms. Sooa Lee, Business Planning Analyst, LG CNS With its history of significant economic growth within a short timeframe, Korea has been understandably slow in shifting its focus to the environment, nor is it considered a forerunner in the climate change/energy efficiency front. This is what makes the clean energy efforts of a conglomerate such as LG, in the form of its energy-independent island projects, a welcome anomaly. A good example is LG CNS's Ulleung island project, which by the year 2020, intends to be the world's first 100% eco-friendly island using renewable sources of energy. This successful combination of public-private partnership, de-carbonization, cost-reduction and community inclusiveness has triggered a wave of similar renewable efforts within the country. This presentation introduces the eco-friendly energy independent island projects of LG CNS, and how they contribute to clean and renewable energy for the future.
16:45	Mr. Len George, Energy Specialist, South Asia Department, ADB While the Maldives has the unique distinction of being the first and only country in South Asia with 100% access to electricity, this achievement has come at a cost. The cost of diesel power is unaffordable at 30 cents–70 cents per kilowatthour (depending on the island) and requires government subsidies in excess of \$40 million annually. To reduce the reliance on diesel fuel for power generation and alleviate the high subsidy requirement, ADB is supporting the "Preparing the Outer Islands Renewable Energy Project" in the Maldives. The project will replace inefficient diesel-based power generation grids on the islands with hybrid (renewable energy and diesel) systems and contribute to reductions in the cost of electricity, the subsidy burden on the government budget, and emissions. Mr. George will discuss this project's progress.
17:15	Panel Discussion – Q&A (Moderator: Michael Trainor)
17:45	Wrap-Up and Close

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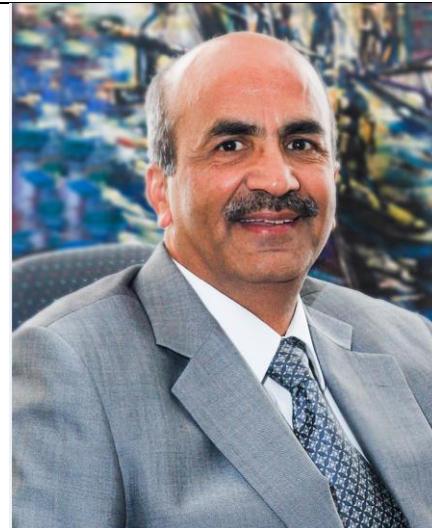
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Speakers

Mr. Pradip Verma is the Chief Executive Officer of Solomon Islands Electricity Authority. Before taking over this position Pradip was employed with Transend Networks, Tasmania, Australia as General Manager, Transmission Services. Pradip has extensive experience in the electricity generation, transmission, distribution and retail utilities in India, Algeria, Bahrain and Australia spanning over 38 years. Pradip has a Bachelor's degree in Electrical and Electronics Engineering, Masters in Business Management, Diploma in Computer Programming and a Diploma in Company Directors Course, Australia. He is a Chartered Professional Engineer (Engineers Australia) and a Graduate Member of the Australian Institute of Company Directors. He has extensive experience in regulation, operations and maintenance, contracts, project management, telecommunications, engineering, environment and safety in the electricity utility industry.



Dr Michael Ottaviano is CEO of Carnegie Wave Energy Limited and a director Energy Made Clean. Dr. Ottaviano's presentation will cover Carnegie's innovative CETO wave technology that harnesses the enormous renewable energy present in our ocean's waves and converts it into zero-emission electricity and zero-emission desalinated water. He will also describe through a series of case studies an exciting new development in mixed renewable microgrids (solar, battery, diesel, wave etc) that Carnegie and its microgrid alliance partner, Energy Made Clean, are delivering projects in island, fringe-of-grid and on-grid locations. Carnegie recently took a 35% stake in Energy Made Clean, Australia's leading solar/battery microgrid EPC.



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Mr. Fuyuki SAGARA, Director , Team 1, Energy and Mining Group, Industrial Development and public Policy Department, JICA

Mr. Sagara has been the Director of Team 1, Energy and Mining Group in JICA HQ since 2015, where he supervises technical cooperation, development study and grant aid programs/projects of the power and energy sector in the Asia-Pacific, Middle-east and East European regions. Prior to the current post, he served as the senior representative in JICA Ghana office from 2009 to 2013, where he was in charge of power sector development.



Sooa Lee, Business Planning Analyst, LG CNS

Sooa Lee is a Business Planning Analyst at LG CNS, an affiliate of the LG Group. At LG CNS, Sooa has been involved in consulting as well as marketing projects in the government sector and has joined the newly formed Innovative Energy Business Unit within the company. Sooa's work involves business development in microgrid island projects supplied by renewable sources of energy. She holds a MSc in Economic History from the London School of Economics and Political Science and a BA in International Studies from Ewha Womans University.



Mr. Len George, Energy Specialist, South Asia Department, ADB

Len is currently outposted to ADB's New Delhi office and covers projects in India, Bangladesh and the Maldives. He has a Bachelor's Degree in Electrical Engineering from Delhi University and a Post Graduate Diploma in Management from the Indian Institute of Management at Ahmedabad. Prior to ADB, he was a Senior Manager with a consulting firm.



Contact: J. Michael Trainor, Energy Specialist, Asian Development Bank