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PARTNERING FOR IMPACT

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Deep Dive Workshop

Deploying Distributed Renewable Energy Systems in Rural Asia



Point of Contact:

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Background

Grid extension has been effective in bringing electrification rates in the Asia and Pacific Region to current levels. However, the same approach is not optimal for off-grid areas that are characterized by geographic complexity, remoteness and low energy demand.

This Deep Dive Workshop (DDW) offers Governments a pathway to navigate these challenges and achieve SDG 7, SDG 13 and their Nationally Determined Contributions (NDCs) under the Paris Agreement.

Improvements in the technology and affordability of energy storage, energy generation and smart metering systems enabled Distributed Renewable Energy Systems (DRES) to compete with a grid connection in remote rural areas. Assuming the local policy, regulatory and market environment are conducive for DRES, it is worthwhile to consider how these solutions can be deployed effectively using available public and private sector resources. Geographic Information System (GIS) Technology can be used to answer this complex question. Session 2 of the DDW will discuss how GIS Technology can aid national planning and market assessment by offering a subnational perspective of energy demand and renewable energy supply in off-grid areas.

To become a significant contributor to national electrification, DRES need robust and sustainable business models behind them. Identifying DRES that have a verified and active track record of success is therefore valuable for proponents that are beginning to consider this alternative seriously. Session 3 of this DDW will present case studies of credible DRES that ADB and its Partners have supported directly.

The DDW workshop will conclude with Session 4, which discusses how the external environment and energy demand described by GIS analysis in Session 2 can be matched with the DRES business models enumerated in Session 3. It will elaborate on how heuristics frameworks, such as the Multi-Tier Framework (MTF)

developed by the World Bank, and project design optimization software, such as HOMER, can be applied to optimize DRES to site-specific conditions.

Objective

The DDW is primarily targeted for Government Agencies, specifically Planning Ministries, Energy Ministries and other attached agencies involved in national electrification. Project Developers that deploy DRES in the Asia and Pacific Region may also find this workshop useful.

The objectives of the DDW are to:

1. Establish DRES as credible electrification solutions that Governments can integrate in their national electrification strategy with a high level of confidence.
2. Increase the appreciation of Government Ministries on the utility of GIS Technology in developing a least-cost and progressive national electrification strategy that simultaneously fulfills SDG 7, SDG 13 and NDC commitments.
3. Help project developers have a clearer grasp of the market potential of their energy access products and services.

Agenda

09:00 – 09:30 **Welcome Remarks**
ADB Representative

Keynote: Integrated Electrification
SE4ALL Representative

09:30 – 10:30 **SESSION 1: Launching of the Report “Guidebook for Deploying Distributed Renewable Energy Systems”**
ADB Representative

10:30 – 11:00 Networking Break

11:00 – 12:30 **SESSION 2: Market Assessment for DRES**
ADB Representative

Each participant will be given access to the GIS Tool ADB developed for Myanmar. After going through each feature, practical questions will be posed such as:

- 1) What is the TIER designation of each off-grid site based on its current energy scenario?
- 2) What is the market size for Tier 3 DRES?
- 3) Which sites can be tendered off to the private sector?

At the end of this exercise, each participant must have an appreciation of the utility of the GIS Tool to their work.

12:30 – 14:00 Lunch Break

14:00 – 15:30 **SESSION 3: Sustainable and Scalable DRES**
Panel Discussion – Representatives from ADB, SE4ALL, ARE, GOGLA

Each organization will present case studies of DRES that they have direct experience with. The focus of the discussion will be the factors or criteria that made these projects both sustainable and scalable (i.e. minimum population density, minimum TIER of electrification, etc.).

15:30 – 16:00 Networking Break

16:00 – 17:00 **SESSION 4: Selecting and Optimizing DRES**

ADB Representative

This session will reconcile the energy demand data provided by the GIS Tool in Session 2 and the energy supply capability of the DRES discussed in Session 3 using tools like the Multi-Tier Framework (MTF) and HOMER. These tools can help proponents shortlist and optimize DRES based on site-specific conditions.

Speakers

Dr. Kee-Yung Nam, Principal Energy Economist, Asian Development Bank
Mr. Mikael Melin, Senior Energy Access Specialist, Sustainable Energy for All
Ms. Catherina Cader, GIS Specialist, Reiner Lemoine Institut gGmbH
Ms. Katerina Hasbani, Board Member, Alliance for Rural Electrification
Mr. Viraj Gada, India Regional Representative, GOGLA
Dr. Nico Peterschmidt, HOMER Specialist, Asian Development Bank

About the Organizers

As part of the roadmap to enhance lending activities, ADB launched the Energy for All Initiative, also known as Energy for All. The initiative is a regional technical assistance program charged to work with various regional departments within ADB to help increase their lending in the energy access space. From 2008 to 2017, this effort resulted in investments that totaled US\$ 8.4 billion and benefited 121 million people.

In 2014, ADB was designated as the Asia Pacific Hub for Sustainable Energy for All (SEforALL). SEforALL is an International Organization working with leaders in government, the private sector and civil society to drive further, faster action toward achievement of Sustainable Development Goal 7, which calls for universal access to sustainable energy by 2030, and the Paris Climate Agreement, which calls for reducing greenhouse gas emissions to limit climate warming to below 2 degrees Celsius