



# Upscaling Mini-grids for Least Cost and Timely Access to Electricity Services

## Brief overview of SREP and the program support to mini-grids

Abuja, December 4, 2017



# SREP overall strategic objectives

## **What the SREP aims to achieve:**

- Pilot and demonstrate the economic, social and environmental viability of low carbon development pathways in the energy sector in low income countries
- Create new economic opportunities and increase energy access through the use of renewable energy (RE)

## **How this is done:**

- Provide concessional finance for RE investments and technical assistance, including policy support
- Leverage significant additional financing from other sources for larger impacts
- Provide experience and lessons in scaling up renewable energy



# SREP support to mini-grids

- Mini-grids make up a significant part of the SREP portfolio with more than **\$200 million** allocated to mini-grid projects in 14 of 19 SREP countries with Investment Plans endorsed, and expecting to leverage more than \$850 million in co-financing.

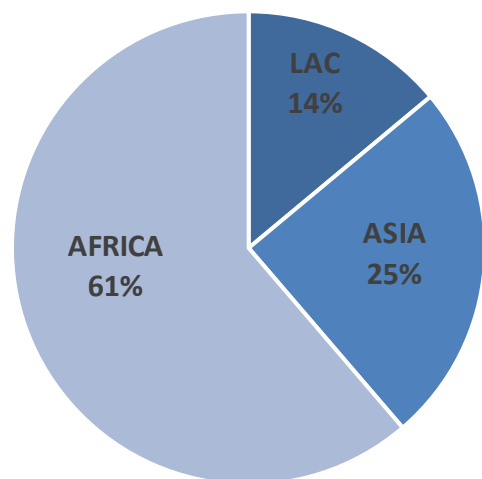
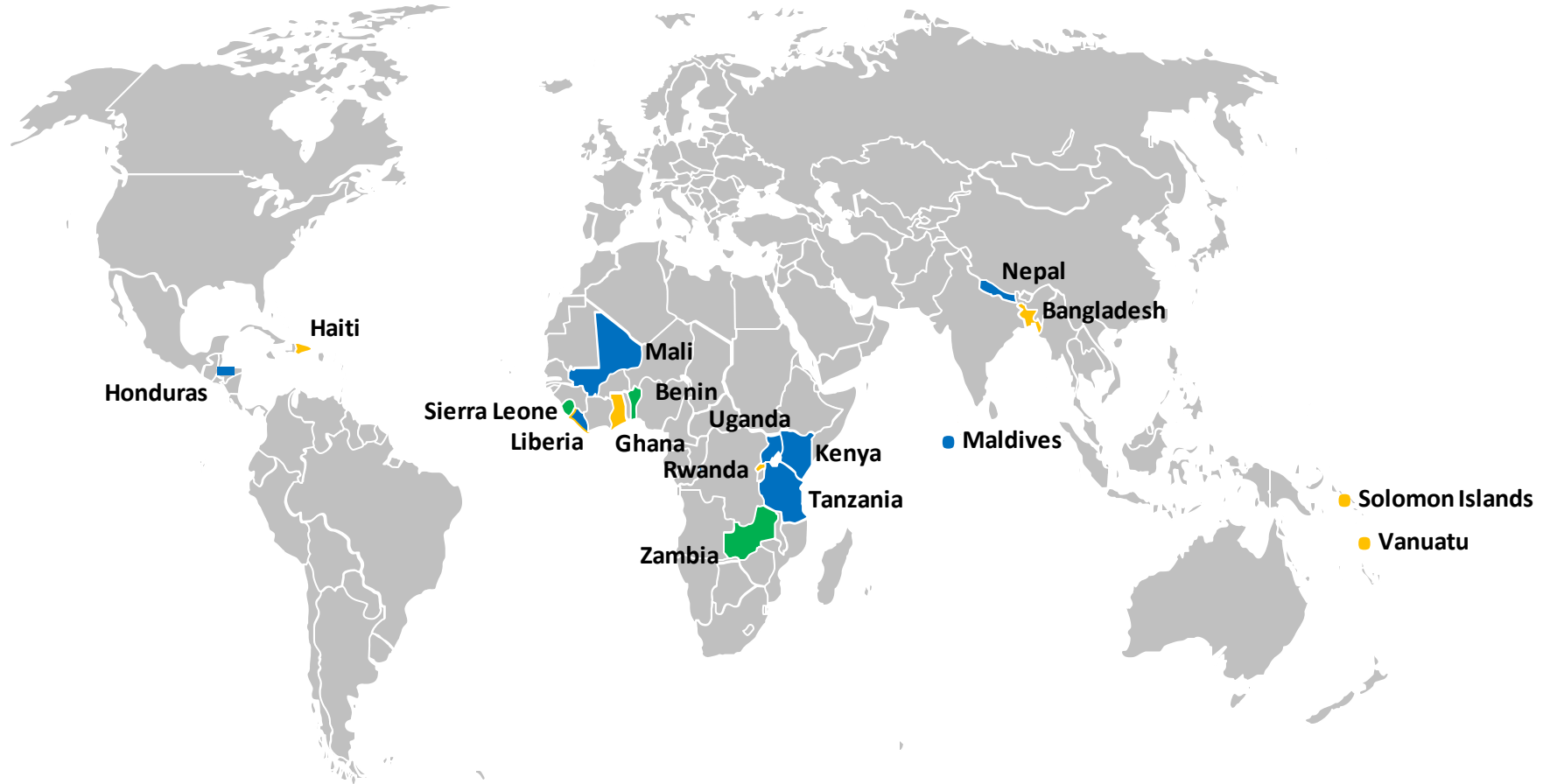





Photo credit: POISED project, Maldives



# SREP support to mini-grids



-  Countries with mini-grid projects approved.
-  Countries with Investment Plans endorsed with mini-grid concepts, but with projects not approved by MDBs, as of November 2017.
-  Countries planning a mini-grid component in their IP to be submitted



# SREP mini-grid portfolio

Country	Project Name	MDB	SREP funding (USD million)	Expected co-financing (USD million)
Kenya	Electricity modernization project	WB	7.5	13.2
Mali	Rural Electrification Hybrid Systems	WB	15.4	40.7
Mali	Development of Micro/Mini Hydroelectricity for Rural Electrification in Mali (PDM-Hydro)	AfDB	10.9	128
Tanzania	Mini-grids project	IFC	5	0.5
Tanzania	Tanzania Rural Electrification Expansion Project	WB	9	155
Liberia	Renewable Energy for Electrification in North and Center Liberia Project-Mini Grids	WB	25	2
Liberia	Renewable energy for Electrification in Eastern and South Eastern Liberia	AfDB	25	37
Nepal	South Asia Sub-regional Economic Cooperation Power System Expansion Project: Rural Electrification Through Renewable Energy	ADB	11.8	16.7
Maldives	Preparing Outer Island Sustainable Electricity Development Project	ADB	13.1	112
Vanuatu	Rural Electrification Project	WB	6.8	13.5
Solomon Islands	Renewable Energy Access Project	WB	7.1	15
Ghana	RE Mini-Grids and Stand Alone Solar PV Systems	AfDB	17.5	66
Bangladesh	Off-grid solar PV: Mini-grid	ADB	6	139
Rwanda	REF Mini-grids subprogram	WB	12.1	40
Uganda	Decentralized Renewables Development Program	AfDB	7.1	-
Honduras	ERUS Universal Energy Access Program	IDB	6.5	1.6
Haiti	Renewable Energy and Access for All	WB	13	22
Haiti	Modern Energy Services for All (CTF DPSP)	WB	16	48



# CIF-ESMAP mini-grid workshops – SREP roundtables

## **1<sup>st</sup> workshop in Kenya, May 2016:**

- 8 SREP countries from Africa
- First time the SREP countries had the opportunity to gather in person to share the status of their activities supporting mini grids

## **2<sup>nd</sup> workshop in Myanmar, Feb 2017:**

- 14 SREP countries from Africa, Asia, and LAC
- Drilled down on challenges and solutions to operationalize mini-grids

Looking into the future, peer-to-peer learning should continue to allow SREP countries to learn about “mistakes to avoid” and successful models to emulate.



## Some conclusions, opportunities and proposals from Myanmar (1)

- A mini-grid has to generate income to be sustainable.
- Productive uses of electricity in rural areas must be encouraged and promoted, as in Rwanda. If businesses receive the proper support, they will be able to pay back.
- Renewable energy (typically in a hybrid generation system, with batteries and back-up diesel) will reduce the cost of electricity, as in Solomon Islands, where the reliance on imported diesel means having one of the highest electricity rates in the South Pacific. Similarly, Maldives mini-grids are expected to be viable and profitable after 5 years commissioning of the hybrid facilities, because of the reduction of costs in fossil fuel.
- Government should encourage local manufacturing of equipment for mini grids, which may have a positive impact on the cost of equipment, and set up Research Development Centers in mini-grids. This could also be done by partnering with established R&D institutes, as proposed by Zambia.



## Some conclusions, opportunities and proposals from Myanmar (2)

- There was a consensus on not over-regulating the minigrid sector.
- AEPC (Nepal) envisions testing a model for forging partnership with private sector towards a more economically viable businesses oriented off-grid system development.
- Develop technical requirements for mini-grids deployment and future integration into main grid, while building mini-grids ready to be connected to the main grid, as in Ghana.
- Geospatial mapping will be useful to identify more potential areas for establishment of the mini grids (as in Kenya) and addressed potential overlapping of mini-grids initiatives and national grid electrification (as in Ghana)