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

SREP Round Table

LIBERIA

Myanmar, February 6 – 8, 2017

CLIMATE INVESTMENT FUNDS

Country background

Population	2008 Census - 3,476,608 2014 Estimate - 4,396,554
Urban Population	49%
Rural Population	51%
% of Population with access to the Electricity Grid	< 10%
Current Power Generation by National Grid (Installed Capacity)	22.6MW (HSD) + 38MW (HFO) + 22MW (Hydro) ** Hydro Expected to reach 88 MW by June 2017 Load size = 19MW Systems are not operated concurrently.
Current Electricity Tariff (National Grid)	US$0.49/kwh
Current Installed Biomass	< 0.16 MW
Current Installed Solar Power	No available data – Several small Solar Home Systems and Mini-grids installed totaling > 0.25MW
Potential for Solar Power Generation	Solar Radiation: 3.84 – 6.13 kWh/m^2/day
Current Installed Hydro power	22.06 MW (Additional 66 MW under construction)
Proven Hydro Power Potential	> 2.3GW
Hydro Power Drawback: Problem of low head, which requires huge investment in storage and reservoir to have full capacity during the dry season	
*** *Source: Liberia Energy Situation - Energypedia.info*	

Project outline

SREP LIBERIA is currently US$50 million CIF grant split in equal parts between the World Bank and the African Development Bank

- African Development Bank Manages a 25 million CIF Grant
- AfDB has concluded detailed feasibility studies in the South East of the Country for Biomass and Hydro Power Potential
- No AfDB project yet. Projects are part of AfDB 2017 portfolio and due for Board approval in 2017
- Current Project on line: LIRENAP (World Bank)

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Project outline - LIRENAP

Project Name	Liberia Renewable Energy Access Project (LIRENAP)
Project Number	P149683
SCF Grant Number	TFA1646
IDA Credit Number	5759-LR
Implementation Period	Five Years
Effectiveness Date	May 19, 2016
Closing Date	June 30, 2021
Total Project Cost	27 Million USD (Include 2 Million IDA Credit)
Initial Targeted Beneficiaries	50,000
Total Capacity	3MW (2.5 MW initial install)

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Project outline (LIRENAP)

- World Bank Manages a 25 million CIF Grant and a 2 million IDA Credit
- WB is Managing the Liberia Renewable Energy Access Project (LIRENAP)
- LIRENAP is comprised of three components:
  - C1. Decentralized electrification: Construction of a Mini Hydro and diesel generation plant (Hybrid)
  - C2. Technical assistance to strengthen rural electrification institutions and regulations.
  - C3. Market development of stand-alone solar systems: fostering the growth of a market for solar energy lighting devices.

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Status

- Project Approved
- Environmental and Social Management Framework and Resettlement Policy Framework Developed
- Detailed Feasibility Study of Hydropower Site and Diesel Plant Conducted
- Detailed Engineering Design and Technical Specifications of Mini-grid Conducted
- Environment and Social Impact Assessment (ESIA) conducted for Mini-Hydropower Site
- Procurement ongoing for ESIA for diesel power plant and transmission lines and Resettlement Action Plan (RAP) scheduled
- Concluding Consultancy for Owners Engineer; Environment and Social Safeguard Specialist Hired Consultant Hired for Development of Business Plan for O&M of Plant and Mini-grid
- Evaluation of Pre Qualification for Construction of Hydro-Diesel Plant and Mini-grid awaiting WB No Objection.

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Questions on moving forward

- Major Question: **Who will operate and manage the mini grid?**
  - *Limited/No local capacity*
  - *Foreign firms discouraged as it would carry the cost up significantly*

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Questions on moving forward

Thanks for Your Kind Attention

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