



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



**SREP round table**

**[Uganda]**

**Myanmar, February 6-8 2017**

# 1.0 Country background



- Uganda is a landlocked country along the Equator neighboring Kenya (East), South Sudan (North), DRC (West), Rwanda (South West) and Tanzania (South). The country covers a total area of 241,000 sq km with a population of 37.6 million (2015).
- Uganda is well endowed with a variety of energy resources which include:
  - large hydro resources along the Nile,
  - fossil fuels,
  - Renewable energy such as small hydros,
  - biomass, solar, wind and geothermal sources.

## 2.0 Policy Framework in the Energy Sector



- **Energy Policy for Uganda 2002**

**Policy Goal:** The Policy goal is to meet the energy needs of Uganda's population for social and economic development in an environmentally sustainable manner.

Policy updates planned for 2017.

- **Renewable Energy Policy for Uganda 2007**

It aims to provide a framework to increase in significant proportions the contribution of renewable energy in the energy mix.

## 3.0 Government's Priorities in the Sector



In line with the Energy Policy, Government has set as the major priorities as:

- to increase electricity generation capacity;
- to increase access to modern energy services and in particular Rural electrification; and
- to promote efficiency in energy utilization.

# 4.0 Institutional Arrangements



- Ministry of Energy and Mineral Development responsible for overall policy and strategies.

Website [www.energyandminerals.go.ug](http://www.energyandminerals.go.ug)

- **Electricity Regulatory Authority (ERA):** it regulates the electricity industry. Website [www.era.or.ug](http://www.era.or.ug)
- **The Rural Electrification Agency (REA):** To accelerate Uganda's rural electrification programme. The Rural Electrification Fund (REF) under REA supports both private sector led and public sector led rural electrification based on grid extensions, independent mini grids and solar PV home systems. web site [www.rea.or.ug](http://www.rea.or.ug)
- **NEMA (National Environmental Authority):** All electricity plants have environmental issues. An Environmental Impact Assessment (EIA) report will normally be required and cleared by NEMA as part of the licensing process.

Web site [www.nemaug.org](http://www.nemaug.org)

- **Uganda Electricity Transmission Company Ltd (UETCL):** generation to sell electricity to the grid, the PPA will be signed with UETCL as the single bulk buyer. For small renewable projects the PPA is standardized .Website [www.uetcl.com](http://www.uetcl.com)

# 5.0 Current Status



- i. WENERCo 3.5 MW- Hydro;
- ii. Kisizi 300 kW – Hydro;
- iii. Bwindi 64 kW – Hydro
- iv. Suan 40 kW – Hydro
- v. Kalangala Hybrid 600 kW (Solar) & 1 MW (Diesel)
- vi. Kabunyala 22.5 kW (Solar)
- vii. Kayanja 5 kW (Solar)
- viii. Kyanyagaramire 13.5 kW (Solar)
- ix. Kyamugarura 13.5 kW (Solar)
- x. Tiribogo 32 kW (Biomass)
- xi. Sekayonyi 32 kW (Biomass)
- xii. Kagando Hospital (Hydro)

## 6.0 Current status Ctn'd



- Off-grid systems less than 2 MW (that include generation, distribution and sale of electricity) qualify for an exemption.
- > 0.5 MW - Exempt from paying annual licensing fees;
- 0.5 – 2.0 MW – annual license fees of USD 3,500.
- Tariffs – currently considered on a case by case – reasonableness & willingness to pay, protection of consumers
- Reporting – annually on the performance of the system.
- Exemption term – period to recover the costs & earn ROI: upper limit is 40 years

# 7.0 Licensing Requirements



- Legal Status
- Feasibility study (design, willingness to pay, demand forecast)
- Technical capacity (to build, O&M)
- Financial capacity (financial statements, proof grants)
- Economic and financial viability (costs, returns)
- Consents and approvals – NEMA, DWRM
- Land acquisition • Distribution grid/network.



# 8.0 Key Challenges



- Lack of public financing to implement mini-grids;
- Bureaucratic Licensing procedure by the Electricity Regulatory Authority
- Delay in developing the Off-grid Master Plan for the whole country;
- “What happens to the mini-grids” when the National Grid extends to the area served by mini-grids
- Political/Public pressure to keep tariffs low. However this is difficult to achieve for Mini-grids.

# 9.0 Progress made in addressing Challenges



- **Simplification of the process**
  - ❑ Working with MEMD, GIZ, REA to simplify the process;
  - ❑ Simplified license exemption application form approved by ERA
  - ❑ Templates – project feasibility, business plan, financial model approved by ERA
- **Master plan** being developed through the support of the German Government by REA.
- **GIZ together with REA under support from German Government piloting a mini-grid under reverse tendering.** Consolidation of REA Grid extension programme with identification of key suitable site to avoid scenario of when the Main Grid arrives.
- With the support from development partners, efforts are being made to subsidize the upfront costs to ensure that the tariff is affordable.



**Thank You for Your Attention !!!**

