



"The Peoples Electricity Link"

RURAL ELECTRIFICATION AGENCY

The Role of Mini Grids to Address Uganda's Power Deficit

Henry Semaganda

Senior Network Design Engineer

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Current Power/Electricity Status

✓ Current Generation Capacity and Demand

- Generation Capacity: Grid- 1,174.69 MW, Off-Grid- 7.5 MW
- Peak power system demand currently stands at 644.79 MW (2018)

✓ Current Electricity Access

- ❖ According to World Bank, Sustainable Energy for All (SE4ALL) database (2016):
 - National electricity access (% of population) at 26.7%
 - Access to electricity, rural (% of rural population) at 18%
 - Access to electricity, urban (% of urban population) at 57.5%
- ❖ **Note:** 73.5% of the population have no access to electricity

Plans to accelerate electricity access

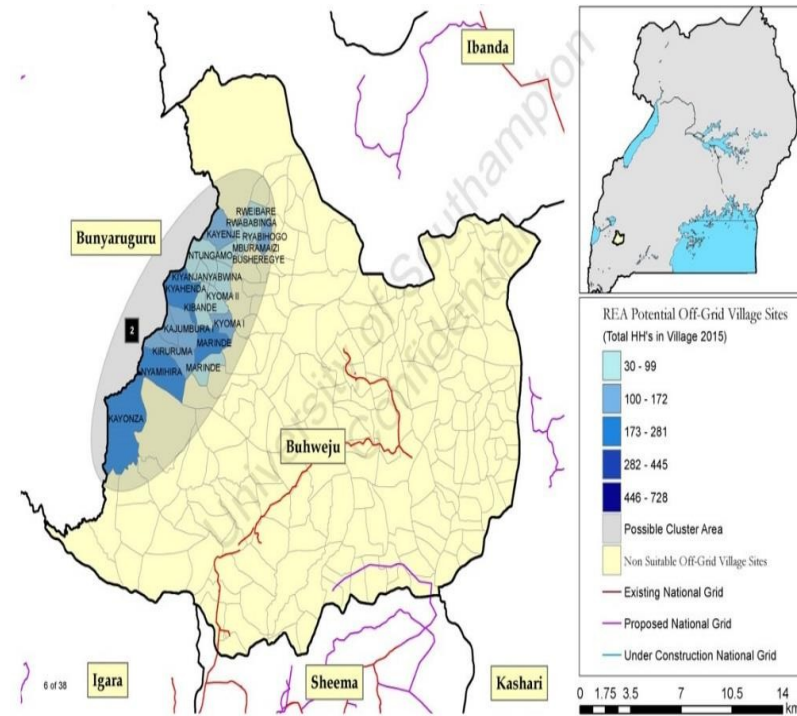
- ▶ Low electricity access is being addressed through:
 - Rural electrification master plan
 - Grid extensions programs
 - Grid densification
 - Community sensitization and mobilization
 - Free connection policy
 - Promotion of use of ready boards for poor households

Challenges in accelerating electricity access

- ▶ Lack of enough funding to extend grid to everyone in the country
- ▶ Mountainous/Hilly terrain of part of the country- difficulty and costly to extend grid
- ▶ The scattered nature of settlements in Uganda, limit the population that will be reached by the grid
- ▶ Island communities

Role of Mini-Grids in Increasing Access to Electricity

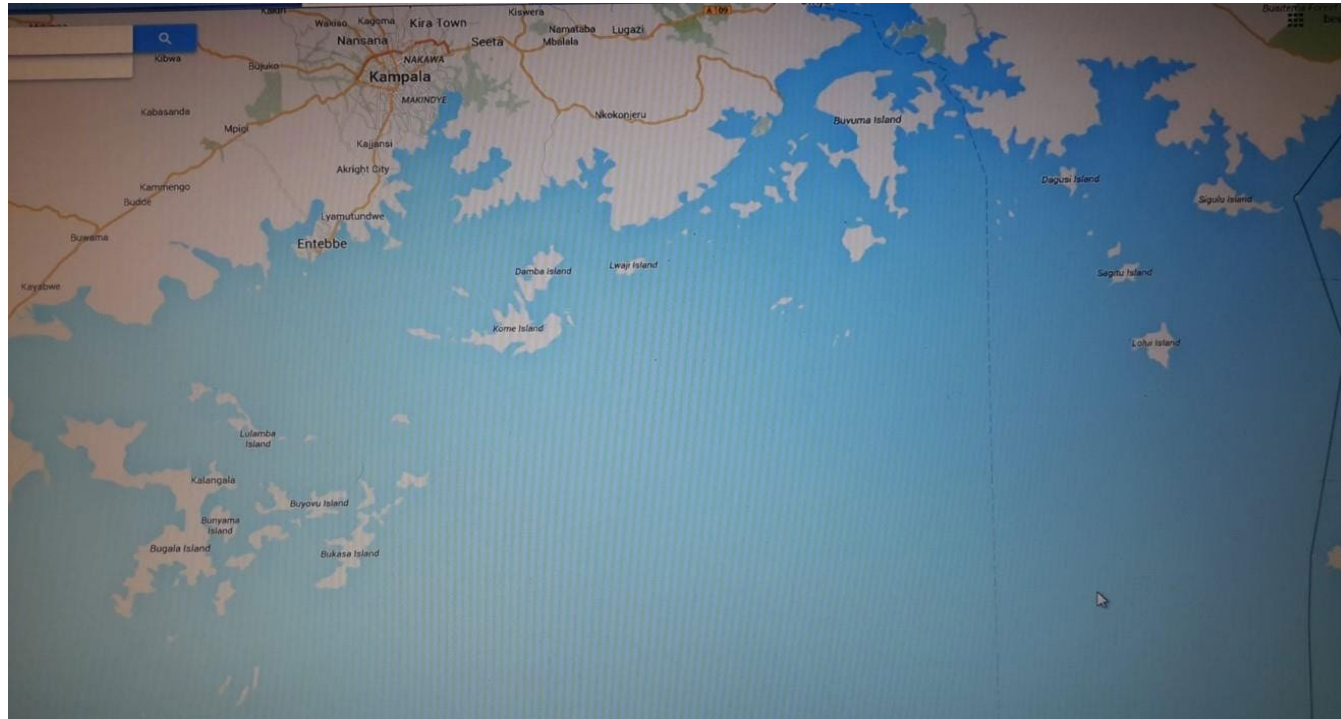
- The scattered nature of settlements in Uganda, limit the population that will be reached by the grid
- Extension of grid to isolated communities is too costly
- Off-grid will play a major role in increasing electricity access.



Role of Mini-Grids in Increasing Access to Electricity Continued

Island Communities on Lake Victoria

- Over 100 habitable Islands On Lake Victoria- household range 300- 600 per fishing village/island- all to be electrified thru mini-grids



Role of Mini-Grids in Increasing Access to Electricity-Continued

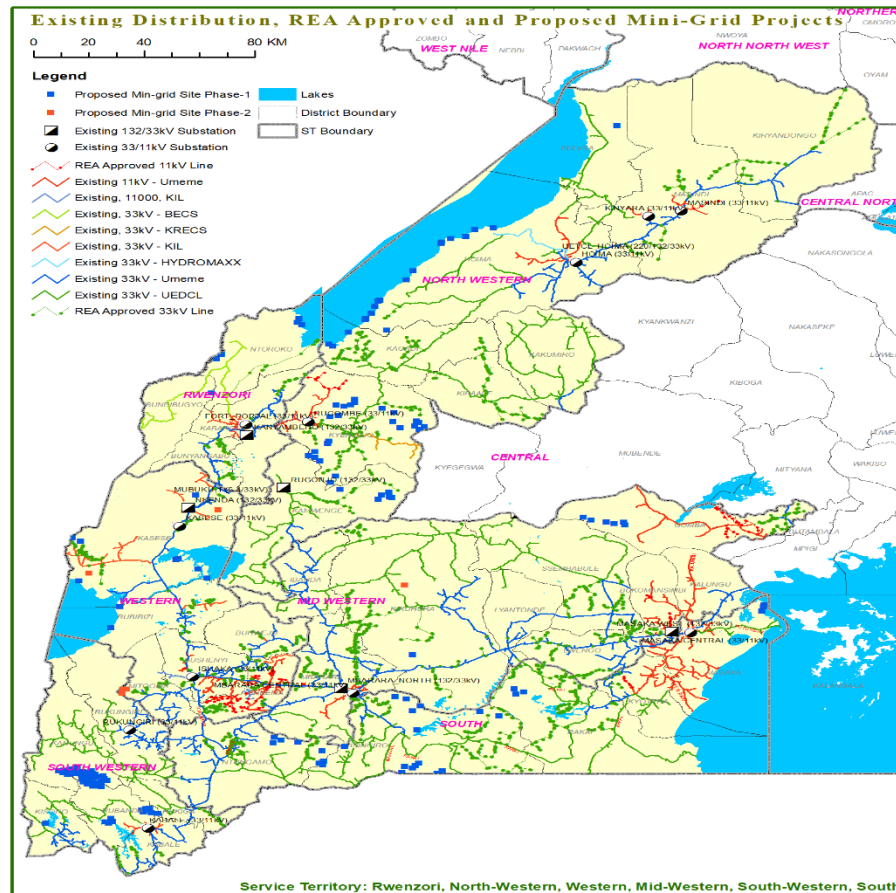
Rural Electrification Masterplan

- Master Plan identified 683 mini-grids serving 104,046 households by Year 10

Service Territory	# of Mini-Grids	Consumers (Year 10)
Central North ST	27	3,373
Central ST	162	25,362
Eastern ST	41	10,395
Midwestern ST	24	2,554
Northeastern ST	69	7,869
North North Western ST	66	14,486
Northern ST	83	11,315
Northwestern ST	59	9,314
Rwenzori ST	6	1,067
Southern ST	35	3,395
Southwestern ST	61	8,873
West Nile ST	30	3,486
Western ST	20	2,557
Total	683	104,046

Role of Mini-Grids in Increasing Access to Electricity-Continued

Rural Electrification Masterplan- Maps



Incentives to Promote Mini-Grid Electrifications

- ▶ **Government has included mini-grids in rural electrification policy and plans.**
Thru:
 - Integration of Mini-Grids in national electrification policy
 - Rural Electrification Master Plan- defining Grid and Mini-Grid areas
 - Licence Exemption for small mini-grids with generation less than 2 Mw
 - REA subsidizes isolated grid and household connections
 - Tax exemption on all Solar Pv equipments
 - Light handed environmental management plan(environmental brief) for mini-grids
- ▶ **Relevant institutions are equipped with instruments to engage the private sector**
 - Simplified license exemption application form for small mini-grids (ERA)
 - Templates in place - project feasibility, business plan, financial model (ERA)
 - Mini-grid tender mechanism (REA)
 - Off-grid concession framework (REA)

Status- Mini Grid Projects in Uganda

- 12 operational mini-grid projects (pilots) – private, public/ community owned/ operated

Under Implementation

- ▶ 25 Villages in Northern Uganda (Lamwo district) in partnership with GIZ and EU
- ▶ 15 Villages in Southern Uganda (Rakai and Isingiro districts) in partnership with GIZ
- ▶ 6 Villages in Western Uganda (Kasese and Rubirizi districts) in partnership with WWF
- ▶ 10 Villages in various regions/districts in partnership with the private sector
- ▶ Feasibility studies of islands in Lake Victoria and development of solar Pv net metering regulation funded by AfDB

Planned

- 25M Euro mini grid Project (pre-feasibility study and implementation subsidy) funded by Germany Govt and EU through KfW – site identification through the Master plan

Key Challenges

- ▶ Lack of public financing to implement mini-grids;
- ▶ Bureaucratic Licensing procedure by the Electricity Regulatory Authority
- ▶ “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.



 **THANK YOU**