REGULATION OF SOLAR PV MINI-GRIDS
OUTLINE OF THE PRESENTATION

1. BACK GROUND

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3. LICENSING OF MINI-GRIDS

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BACKGROUND

I. Only 30% of the world’s rural population without electricity can have access through the main grid;

II. 52.5% can be served through mini-grids;

III. standalone systems (Pico solar P.V and solar home systems) can be used to electrify the remaining 17.5%;

IV. Grid extension should only be encouraged where there is economic viability. Average grid extension costs are US $ 30,000 - 40,000 per km for a 33KV line.

V. Standalone systems are more viable in sparsely populated rural settings where development, operation and maintenance of mini-grids would pose challenges.
BACKGROUND

The graph illustrates the relationship between unsubsidised electricity retail cost on site (Euro/kWh) and different types of energy systems. It compares National grid extension, Solar Home Systems and Pico PV, Solar/diesel/biomass mini-grids, and Hydro mini-grids. The x-axis represents the size of the community, with factors such as density of population, distance to the national grid, complexity of terrain, and economic strength. The y-axis shows the cost of electricity. The diagram also indicates a "Mini-grid Space" between different energy systems. The source of the data is Inensus.
ROLE OF THE ELECTRICITY REGULATORY AUTHORITY (ERA)

- ERA is a Statutory Body established in the year 2000 in accordance with the Electricity Act 1999 (Chapter 145 Laws of Uganda).

- ERA’s Mandate is outlined in section 10 of the Electricity Act 1999 and includes among others:
  
a) To establish a tariff structure and investigate tariff charges.
  
b) To approve rates of charges and terms and conditions for the sale of electricity by the Transmission Companies.
  
c) Receive and process applications for Licences - Issue Licences
  
d) Develop and enforce performance standards
  
e) Enforce directions to ensure compliance with Licences
CONDUCT OF THE ELECTRICITY REGULATORY AUTHORITY (ERA)

In performance of the functions the Authority;

a) Promotes efficiency, economy and safety use of electricity

b) Ensures compliance to Licences terms and protect the interests of consumers in respect of;
   - Prices, and charges,
   - Quality, efficiency, continuity and reliability of the supply services,

c) Ensures transparency

d) Ensures a fair balance of interest of consumers, Government and participants in power sector

e) Promotes continuity of supply of electricity
LICENSING OF MINI-GRIDS

In granting / rejecting an application, the ERA considers;

• Energy needs of the community
• Social cultural and recreational life of the community
• Environmental aspects
• Land
• Cost of the project – Price offered
• Technical, commercial, financial, legal capacity
• Energy efficiency
Licensing under competitive bidding

• Section 32 of the Electricity Act;

• “the Authority shall through a fair, open and competitive process in accordance with procedures prescribed by the Authority regulations or any other law, invite applications for any Licence under this Act”
LICENSING OF MINI-GRIDS

Mini-grid regulation in Uganda

Key Question; What level of light handed regulation / licensing regime should be put in place?

I. Conventional regulation is characterized by technical, financial, environmental and legal scrutiny for capacity/ability and compliance.

II. Off-grids require light handed regulation that focuses on minimum service standards
Mini-grid regulation in Uganda

**Step 1**: Identification of Proposed project in line with Rural Electrification Masterplan – Project must be less than 2 MW and located more than 1km from National grid to qualify for exemption

**Step 2**: Development of a project feasibility study including a detailed socio-economic assessment, and Environmental Project Brief;

**Step 3**: Obtaining clearance of the project Brief from NEMA;

**Step 4**: Submission of the developed documents to ERA for consideration;

**Step 5**: Processing of the application by ERA: Process involves advertising, holding a public hearing and detailed assessment of the tariff proposal

For the bidding process, the above steps are covered by the RFP. **Successful bidders shall be licensed upon fulfillment of pre-agreed Conditions – Precedent**
LEGAL BASIS FOR TARIFF SETTING

- Electricity Act, Section 75 - Setting of tariffs and terms of supply.
- Tariff Regulation Code (2003) and;
- Electricity (Application for permit, license and tariff review) regulations 2007.

PRINCIPLES OF TARIFF DETERMINATION

Recovery of all reasonable costs and a reasonable rate of return” for licensed activity

a) Revenues adequate to cover reasonable levels of its operating costs, the recovery of invested capital and profits and,

b) Incentives to reduce costs and operate efficiently.
Mini-grid regulation in Uganda

Notable Tariff – setting Considerations

1. Tariffs should be set to recover investment, operation and maintenance costs, management fees as well as the return on investment;

2. Cost-reflective tariffs for mini-grid installations may be presumed as being high, however, the cost of unserved electricity is even higher;

3. Demand and ability to pay projections often present major viability challenges in planning the development of mini-grid projects;

4. Demand is difficult to accurately determine considering that the targeted population usually has limited previous experience with electricity consumption;
Challenges of Mini-Grids in Uganda

a) Retail Tariff

b) Suboptimal Demand

c) Operation and Maintenance costs

d) Energy losses – Commercial Vs technical Losses

e) Personnel capacity
CONTENTS OF THE LICENCE EXEMPTION

a) Terms and conditions;
b) Terms of the exemption
c) Obligation to comply with legislation
d) Obligation to maintain system integrity
e) Reporting and information
f) Tariffs
g) Fees and Levies
h) Dispute resolutions
i) Etc.

The company is mainly exempted from;
1. paying Licence fees
2. Frequency reporting to the Authority
3. The exemption does not preclude the Authority from exercising its other regulatory functions
LICENSING OF THE BIDDER

• Successful bidders shall be licensed upon fulfillment of pre-agreed Conditions – Precedent

• Sec. 113 Act – the Licence exemption is given by statutory order

• The Licensing requirements/terms will be part of the RfP

• ERA has representation on the evaluation committee

• The successful bidder will need to meet the licensing requirement

• ERA will continue regulating the successful bidders during the operation phase of the project
ERA is committed to ensuring access to affordable, reliable and sustainable electricity supply for Uganda’s social economic transformation.

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