Stakeholders Consultative Workshop On Regulatory Framework For Electricity Mini Grids

Tariff Framework for Mini Grids in Malawi

7th March 2018, Lilongwe Hotel
Presentation Outline

- What a Mini Grid Is
- Tariff Setting Methodology and Formula
- The Tariff Tool for Mini Grids
- Calculating the revenue requirement and the Tariff
- Mini Grid Tariff Principles
- Expected Customer Categories
What a Mini Grid Is

• Also referred to as micro grid or isolated grid
• Defined as a set of electricity generators interconnected to a distribution network that supplies electricity to a localized group of customers
• Serves a limited number of consumers via a distribution grid that can operate in isolation from national electricity transmission network.
Tariff Setting Methodology and Formula

• MERA uses the Revenue Requirement (RR) Methodology approach with a revenue cap in determining electricity tariffs.

• The guiding principle of RR is that revenues of the regulated utilities should cover
  - efficient operating and maintenance expenses
  - taxes and depreciation, and;
  - ensure a fair rate of return on assets utilised for provision of electricity.

• To arrive at an average tariff, MERA reviews and verifies all information related to the various components that make up the revenue requirement in the utility’s tariff application.

• MERA further examines the marginal costs by customer type and customer load characteristics that forms the basis of costs of service by customer
Revenue Requirement Determination

Revenue requirement =

O&M + Depreciation + Return on capital

CAPEX = capital expenditure
O&M = operation and maintenance
The Tariff Tool for Mini Grids

• The approach to tariffs for mini grids will follow the general principles set out by the new tariff methodology
• A **tariff tool** for mini grids will be put in place which will guide mini grid operators in determining the appropriate tariff for customers in an isolated cluster of customers.
• On the basis of the building block approach to tariff determination, the tool will be applicable to mini grid set up where operations involve generation and supply/distribution of electricity.
• The Authority will regulate the retail tariffs of mini-grids that are operating commercially.
• Customers must pay ‘sufficient’ price for sustainability
Inputs for the Tariff Tool

• Operating costs
• Capital costs
• Financing costs – as a basis for calculating return on capital
• Asset lives – as a basis for calculating depreciation
• Collection rate - To factor in bad debt costs
• Deductible income - non-tariff revenue that should be deducted from the cost base
• Billed consumption - To assist in converting revenue requirement to an average tariff
Calculating the revenue requirement

• Having determined the relevant building blocks, the next step is to calculate the revenue requirement for each of those blocks

• **Operating costs**
  o This requires estimation of annual costs for the tariff period

• **Return of capital (depreciation)**
  o This is calculated by first determining the opening asset value for each asset type in each year, and divide it by the asset life.
  o Depreciation will also be applicable on assets financed through grants.
  o Applicable assets in generation and supply/distribution

• **Return on capital**
  o Investing in mini grids is done as a business venture in which the investor expects a return.
  o The rate of return is based on weighted average cost of capital (WACC).
Calculating the revenue requirement, cont’d

• **Collections/bad debts**
  - Gross up the total of the above building blocks by the collection rate

• **Deductible income**
  - Costs related to any activities undertaken by the operator and are outside the realm of electricity service provision cannot be borne by the customers
Calculating tariffs – average and actual

• The average tariffs for all customers is calculated by dividing the total revenue requirement by billed consumption

• In determining the actual tariffs for various customers, operators consider the actual cost such customers will impose on their mini grid system.
Mini Grid Tariff Principles

• The Authority will allow mini-grids to charge retail tariffs above the uniform national tariff if required to enable them recover efficient opex and capex. This approach will ensure sustainability of electricity service provision.

• Mini grid operators will be allowed to cross-subsidize between customer classes specifically targeting domestic customers who are less able to afford electricity services but costly to serve.

• The Authority will ensure that mini-grid operators enter into *power sales and service contracts* with businesses/customers. This will entrench customer confidence in sustained service provision by mini grid operators, thereby realizing customer value for money.

• Mini-grid operators will be allowed to charge tariffs that include depreciation on equipment financed through grants such as MAREP Funds, development partners, etc.
Expected Customer Categories

• Three major types of customers
  o Domestic;
  o public institutions such as health facilities, schools, and community halls, among others; and
  o small scale commercial operators

• The Authority will allow cross-subsidization to enable the rural domestic customers to access modern energy services
Thank you for your attention.

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