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.

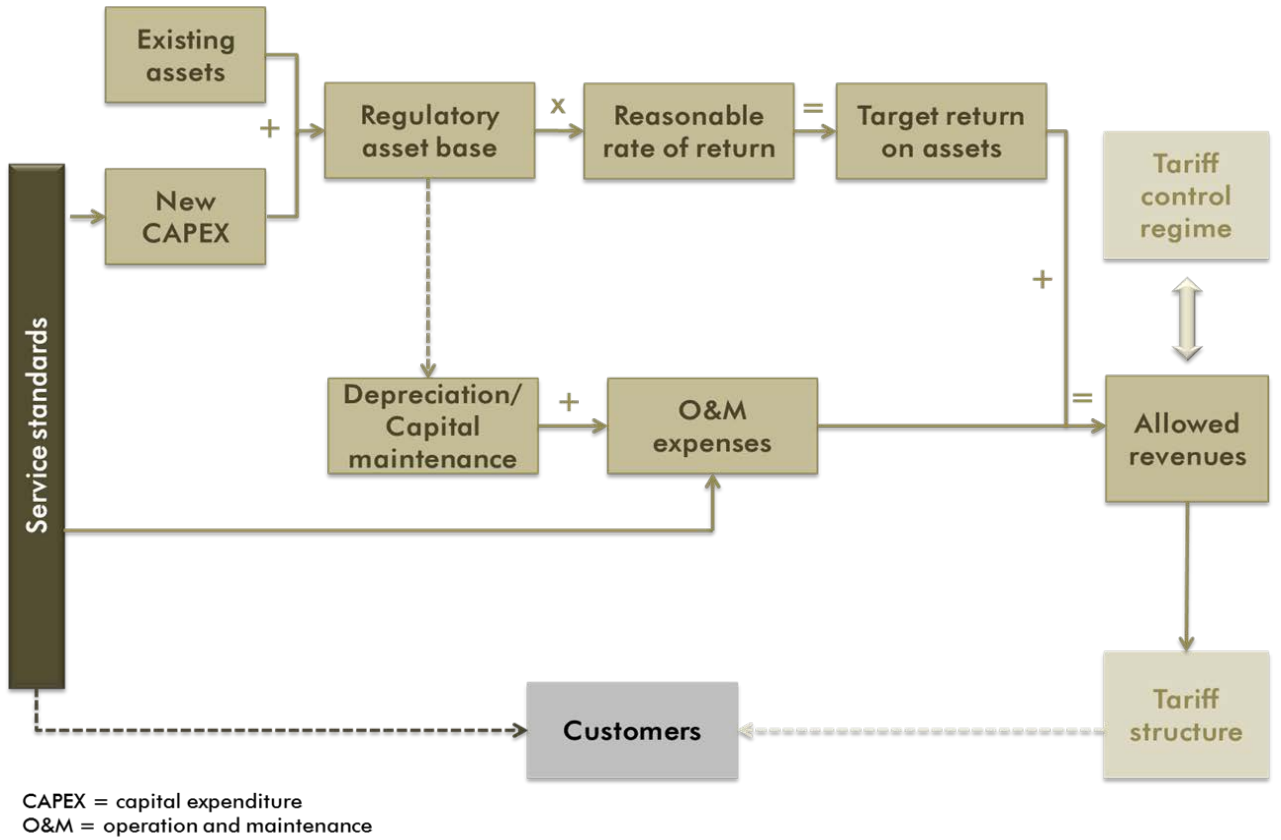
Tariff Setting Methodology and Formula

- 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



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***
  - This requires estimation of annual costs for the tariff period
- ***Return of capital (depreciation)***
  - this is calculated by first determining the opening asset value for each asset type in each year, and divide it by the asset life.
  - Depreciation will also be applicable on assets financed through grants.
  - Applicable assets in generation and supply/distribution
- ***Return on capital***
  - Investing in mini grids is done as a business venture in which the investor expects a return.
  - 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
  - Domestic;
  - public institutions such as health facilities, schools, and community halls, among others; and
  - 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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