

# Pricing of Renewable Energy Services in Malawi: Key Issues

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# Background

## LEGAL PROVISION

As provided for under section 30 of the Energy Regulation Act 2004 and sections 16 and 17 of the Electricity Act 2004, MERA is mandated to approve tariffs, and prices of energy sales and Services.

### The Energy laws require that

- ▶ Companies only charge tariffs approved by the Authority
- ▶ The Authority to determine and revise the tariff base and the tariff adjustment formula every **four years**
- ▶ The Authority to publish the proposed tariff revision and may cause tariff studies to be carried out.
- ▶ Public hearings to be arranged before tariff base revision

# Tariff Setting Methodology and Formula

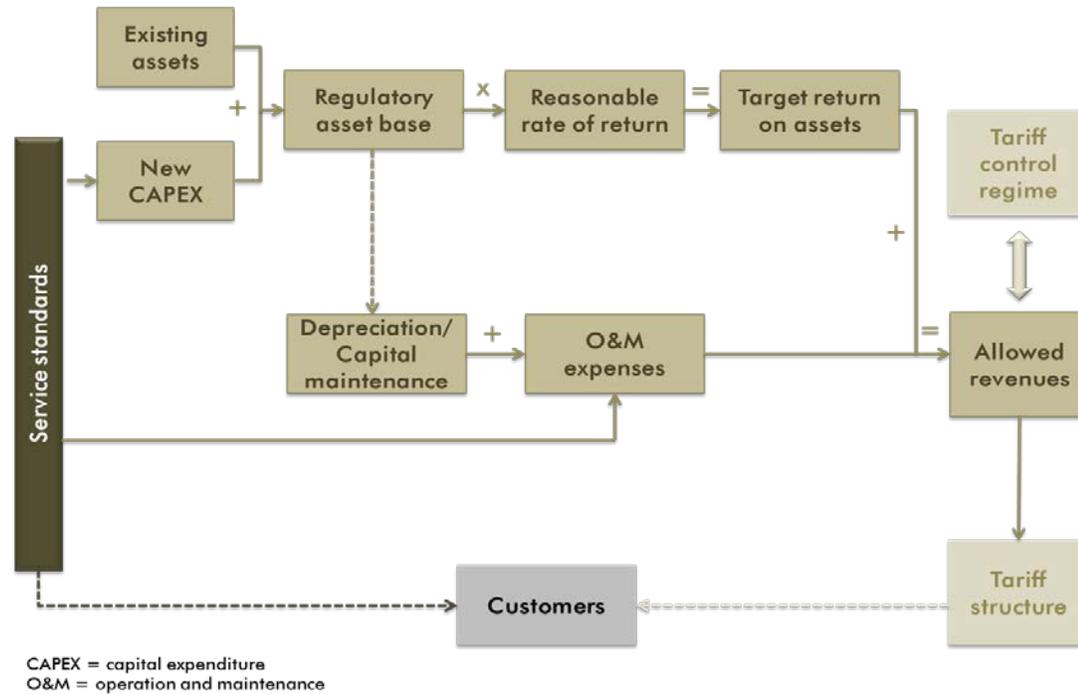
- ▶ The methodology for setting electricity tariffs is based on the Revenue Requirement (RR) for the company/operator.
- ▶ This approach allows the company to earn enough revenue through tariffs to recover **efficiently** incurred costs that are deemed fair and reasonable including a **reasonable return on investment**
- ▶ The cost structure for the company needs to be defined in order to determine the revenue requirement to be earned.

# Tariff Setting Formula

- ▶ The methodology for setting electricity tariffs is based on the Revenue Requirement (RR) principle for the utility. i.e: the revenue to be earned by the utility should be equal to utility's expenses plus a fair return on utility's rate base
- ▶ RR is defined as:  $O + D + T + r \cdot B$ 
  - ▶ O = Operation and Maintenance (O & M) costs
  - ▶ D = Depreciation expense
  - ▶ T = Taxes (generally GoM provides tax exemption on generation equipment)
  - ▶ r = Allowed rate of return (Weighted Average Cost of Capital)
  - ▶ B = Rate base

# Revenue Requirements Building Blocks

Revenue requirement =



# Criteria for Allowable Expenses

Allowable expenses to be included in the RR must meet the following criteria:

- ▶ Incurred at arms-length transactions and suppliers treated equally without prejudice
- ▶ Necessary and related to generation, transmission and distribution of electricity
- ▶ Prudently incurred after careful consideration of available options. Least cost options not to be at the expense of quality, effectiveness and efficiency
- ▶ To be incurred in the normal operations of the business

# Forecast Demand for Electricity

- ▶ The backbone of estimating of revenue requirement of a utility
- ▶ Dependent upon 'correct' estimation of forecasts of future demand for electricity
- ▶ Proper estimates of future peak electricity demand, electricity consumption and customer numbers for the review period
- ▶ The forecast demand for electricity culminates into total estimated electricity to be consumed over the review period in kWh

# O&M Costs

O&M relates to all costs to maintain and operate assets

- ▶ payroll
- ▶ Maintenance of building, equipment and plants, motor vehicle etc
- ▶ Operations; Fuels and lubricants
- ▶ Services and supplies and sundries: stationery, Services such as legal, consultancies and motor vehicle hires.
- ▶ Levies and licenses.( 4.5% MAREP levy & 1% MERA levy)
- ▶ Loans payable.
- ▶ O& M costs for new projects

# Depreciation Expenses

- ▶ This is a provision for the wear and tear on assets.
- ▶ The practice is use of straight line method over the estimated useful life of the asset

# Taxes

- ▶ These are normal taxes e.g. corporate tax. For renewable energy generation equipment there is currently a general exemption on import duty and other importation related taxes.
- ▶ Other taxes such as levies and VAT are embedded in the electricity unit

# Return on capital

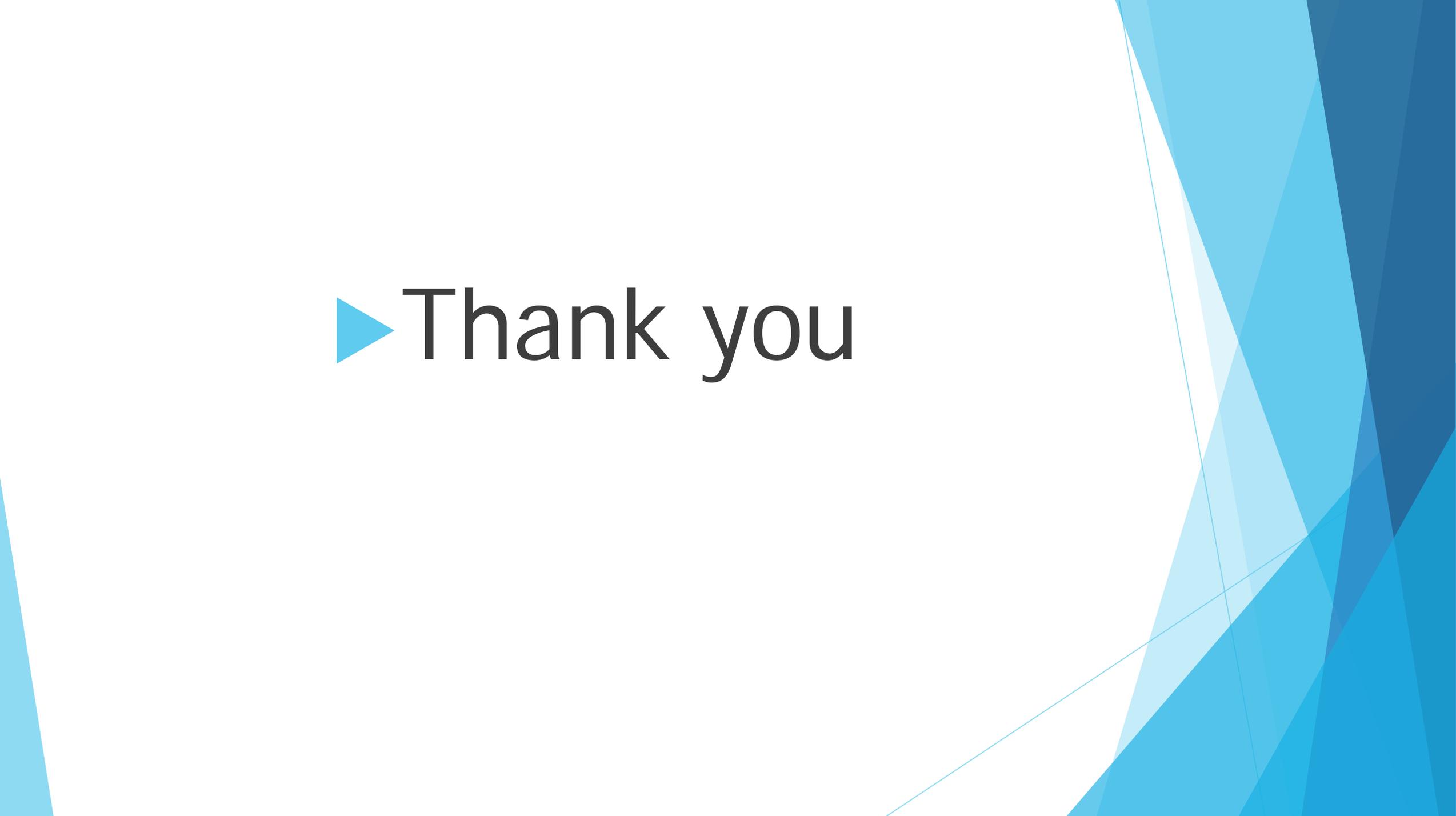
- ▶ ROR regulation is designed to allow firms an opportunity to earn reasonable profit (return) on investor's capital
- ▶ This is calculated using the weighted average cost of capital (WACC)
- ▶ To get the actual return, the WACC is simply multiplied by the appropriate capital employed (the rate base)

# The Rate Base

- ▶ The utility's rate base is the total of the investor funded facilities and investments used in the generation, transmission and distribution and supply of electricity services
- ▶ The rate base provides a basis to which a fair rate of return is applied to arrive at the amount of authorized return

# Tariff Determination

- ▶ Revenue Requirement (RR) is determined on the basis of the elements explained above (Monetary value)
- ▶ Average Tariff:  $RR / \text{Forecast total electricity demand}$

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▶ Thank you