

Mainstreaming mini-grid tariff settlement tools and methodologies across Sub-Saharan Africa Regulators”.

Progress Update to the Steering Committee

29 July 2021

By the Africa Energy Services Group (AESG)



Presentation Outline

1. Introduction

2. Summary from Tools Assessment

3. Current activities

3. Next Steps

Introduction

- The project activity assessed tariff settlement tools of five country regulators– Nigeria, Sierra Leone, Kenya, Tanzania, and Zambia
- The tool assessment covered the following areas:-
 - Tariff approval processes and timelines
 - Tariff tools overview and inputs required
 - Tariff tools outputs – required revenues and tariff structures
 - Challenges/Lessons learned

Some Observations from Tools Assessed

COUNTRY	Size (Installed Capacity) of mini grid regulated by the tool	Number of Mini-grid tariff applications considered to date using Tool	Mini grid tariff processing period	Portfolio (batch) tariff applications allowed?
Kenya	$\leq 1\text{MW}$	10	60 days	Yes
Tanzania	$\leq 100\text{kW}$	5	90 days	Allowable
Zambia	$> 100\text{kW}$	1 (700kW in 2019)	74 days	No
Sierra Leone	$> 100\text{kW}$	n/a	30 to 60 days	Yes
Nigeria	$> 100\text{kW} < 1\text{MW}$	n/a, however, over 50 mini grids are operational	30 days	No

Some Observations from Tools Assessed

COUNTRY	Mini grid tariff control period (review cycle)	Allows automatic adjustments during the control period
Kenya	1 year (first application), then 3 years	Yes
Tanzania	3 years	No (capped to national tariff)
Zambia	3 years	No (10% variation – new application)
Sierra Leone	1 year but switching to Multi year tariff order (MYTO)	No
Nigeria	5 years MYTO	No (Tariffs remain the same for 5 years)

Some Observations from Tools Assessed

COUNTRY	Inputs into Tool	Inputs – Demand forecast versus Installed capacity/idle capacity
Kenya	Capex, O&M, tariff inputs, capacity factors, Load Profile, loan, Subsidies	Uses the installed capacity
Tanzania	Capex/depreciation costs, O&M, customer numbers, consumption	Regulations prescribe that installed capacity should not exceed demand
Zambia	Capex, Working Capital, O&M	Considers Energy Sold
Sierra Leone	Demand, Costs, Various, Assets, Margin	Customers register before capacity is installed to ensure no excess capacity. For excess capacity, developer should move the assets elsewhere
Nigeria	Finance, Customer numbers and demand, Operational cost, Assets, DisCos re-interconnection, Margin	Uses forecast demand

Some Observations from Tools Assessed

COUNTRY	Return on investment (equity)	Tariff Structures
Kenya	Ke=18%; Cost of debt is the actual cost of debt , 70% debt:30% Equity	kWh used
Tanzania	Ke= 18.5% (CAPM), Cost of debt=interest of specific debt, 70% debt: 30% equity	National Unity Tariff
Zambia	Cost of equity=CAPM used where ERB sets beta and ERP; cost of debt is actual, gearing 0.4 to 0.7	ERB sets principles only
Sierra Leone	The target rate of return is entered as one value	Conventional kWh tariffs, flat rate tariffs, power tariffs or a combination
Nigeria	Ke= cost of debt +6% prescribed in Regulations, expected cost of debt	Average Pay as you go (PAYG); Average flat rate tariff

Some Observations from Tools Assessed

COUNTRY	Avoided cost used as tariff comparator	Sensitivity Analysis
Kenya	Yes, with Kerosene cost	Yes (altering inputs)
Tanzania	Not considered Considered for Off-grid >100kW	Yes (enter tariff to get subsidy)
Zambia	Not considered	No
Sierra Leone	No	No
Nigeria	No	No

Some Observations from Tools Assessed

Challenges Using the Tool

Zambia	Although invited, a limited number of community members engaged in the public participation process. The tool needs to be reviewed to align to the new Act
Tanzania	The model contains complicated links that are difficult to follow
Kenya	How to treat grants/subsidies in tariff tool
	Difficulty in assessing prudence/efficiency of costs due to lack of adequate data for benchmarking
	Conflicting objectives (affordability vs operational efficiency vs fair return to minigrid developers) in determining RAB

Some Observations from Tools Assessed

Challenges Using the Tool

Kenya	No clear performance indicators to compare various mini grids
Nigeria	The communities are not conversant enough to interrogate their tariffs and could agree to any tariff. So, the commission has to do detailed evaluation on behalf of communities to see where there are excesses
	Some places where these operators work are very remote without network which hinders online application
	No information on whether costs are reasonable.

Some Observations from Tools Assessed

How to Address the Challenges

Zambia

Tool is to be aligned with the new Act

Tanzania

The model should be simple and straight forward to ease the tracing process

Kenya

Continuous assessment and improvement of the tariff tool so that it captures all investment dynamics for sustainable mini-grid development.

Undertake benchmarking analysis to ensure efficient costs are determined

Some Observations from Tools Assessed

How to Address the Challenges

Nigeria

Market survey to get a range of equipment costs -
Looking for information guide on cost of these
equipment from where they are coming to be able
to compare

AFUR should come up with a joint project to
compile a compendium of data from various
projects that regulators can use to know level of
efficiency, level of tariffs, etc

Some Observations from Tools Assessed

Other comments on the tool

Kenya	The minigrid tariff tool has enhanced regulatory efficiency by ensuring consistency, predictability, comparability
	The Authority has approved over 10 minigrid tariffs using the standard tariff tool
	Authority is receiving an average of 1 to 3 new tariff applications every month since using the tool
Zambia	The developer had applied for a non-cost reflective tariff that was below the national grid tariff. The private operator wants a transition to a cost reflective tariff or a tariff equal to the national grid tariff to recover costs

Q2 ongoing activities-Stakeholders Consultations

Stakeholders Group	Name/Country
Regulators	Nigeria, Kenya, Tanzania, Zambia, Sierra Leone
Ministries of Energy	Zimbabwe, Togo, Cameroon, Rwanda, Burkina Faso
Funders Group	FCDO, Infracore, S4ALL, CAMCO, CrossBoundary, Acumen, GIZ, AfDB, World Bank, Rockefeller Foundation
Developers	Credcent, Ensol, Powergen, Engie, Renewvia, GVE Projects, Standard Microgrid, Energi

Q2 ongoing activities-Stakeholders Consultations

Stakeholders Group	Name/Country
Others	Africa Union (AUDA), RERA, RAERESA, ERERA
Renewable Energy Associations	TBD
Industry Associations	TBD

Funders Group Feedback

- Ensure political buy-in and get firm commitment
- Build capacity of regulators and independence
- Support productive use of energy (PUE) initiatives
- Enable web-based application like those of e-governments
- Provide for light-handed regulation as well as “willing buyer willing seller” arrangements

Next steps

- Stakeholders consultations up to end of July 2021
- Baseline report by end Q2 for workshop in the next quarter
- Recommendations on high level structuring of the tool

Q & A



➤ End

➤ Thank you

