



THE DRAFT ENERGY (MINI-GRID) REGULATIONS, 2021

(Pursuant to Sections 10, 11 and 208 of the Energy Act, 2019)

REGULATORY IMPACT STATEMENT

APRIL 2021

Issued by the Energy and Petroleum Regulatory Authority

1. THE DRAFT ENERGY(MINI-GRID) REGULATIONS, 2021

The Energy and Petroleum Regulatory Authority (Authority) together with industry stakeholders has developed the Draft Energy (Mini-Grid) Regulations, 2021 (the 'Regulations'). The Regulations have been developed within provisions 10, 11 and 208 of the Energy Act, 2019 (the 'Act') and shall constitute Regulations to the Act.

The Regulations will amongst others, provide guidance to mini-grid developers and other stakeholders on the tariff approval and licensing requirements.

2. INTRODUCTION

Access to electricity is an essential input to the social, economic, and political transformation of a country. However, sustainable supply of electricity in Kenya has been hindered by *inter alia*, high costs of extending the national grid to some of the underserved areas, negative environmental impacts associated with fossil fuels and the diminishing natural resources.

Renewable energy based Mini-grids present an opportunity of reducing overreliance on fossil fuels by contributing to the electricity mix and directly electrifying communities distant from the existing grid at a comparatively lower cost. This is in addition to deployment of other off-grid solutions such as solar home systems, solar lanterns and solar water pumping systems.

Deployment of solar mini-grids requires a robust policy and regulatory framework. Kenya's mini-grid industry is currently regulated through the Internal Procedures and Guidelines for Regulating Mini-Grids, 2018 (guidelines). The guidelines were developed under provisions of the Energy Act, 2006 (now repealed). The Authority undertook to review the current guidelines to align them with the Energy Act, 2019.

Presented herein is a Regulatory Impact Statement (RIS) of implementation of the Regulations.

3. BACKGROUND

A mini-grid is an integrated system for local electricity generation, storage, distribution and supply that can operate in isolation from the national electricity distribution network. Mini-grids are powered by technologies such as solar, wind, and biomass, diesel, or hybrid fuel sources. They are usually characterised by small capacities (kW), local geographical coverage, and medium to low distribution voltages.

In Kenya, there both public and private sector developed/ and operated mini-grids. The first mini-grids in Kenya were developed by the government in the 1980s to supply government administrative centres that were far from the main grid. Currently, public mini-grids are developed by Rural Electrification and Renewable Energy Corporation (REREC) and operated by Kenya Power and Lighting Company Limited (KPLC). Several private developers have also entered the space of mini-grid development /and operation in Kenya. Investments in the mini-grid sector are supported by different development agencies including the World Bank, African Development Bank, KfW Development Bank, Deutsche Gesellschaft für Internationale Zusammenarbeit GmbH (GIZ), EU Infrastructure Trust Fund, UKAID and Agence Française de Développement (AFD).

The 2018 Kenya National Electrification Strategy (KNES) aims to achieve universal electrification by 2022 and mini-grids are seen as an important step towards achieving that target. New mini-grids are expected to supply an additional 34,700 households by 2022. Therefore, the number of mini-grids operating in Kenya is expected grow significantly over the next years to achieve the targets set by the KNES. This will involve a combination of public and private mini-grids.

The government has planned 158 mini-grids under the Kenya Off-Grid Solar Access Project (KOSAP) to be build and operated by REREC or KPLC. In addition, the private sector is planning over 130 mini-grids, currently at various stages of development. Therefore, over 280 mini-grids will be constructed and commissioned before 2022 to achieve the targets set in the

KNES. This will make the total number of operating mini-grids to increase from 106 in 2018 to 391 in 2022 as shown in *Figure 1*.

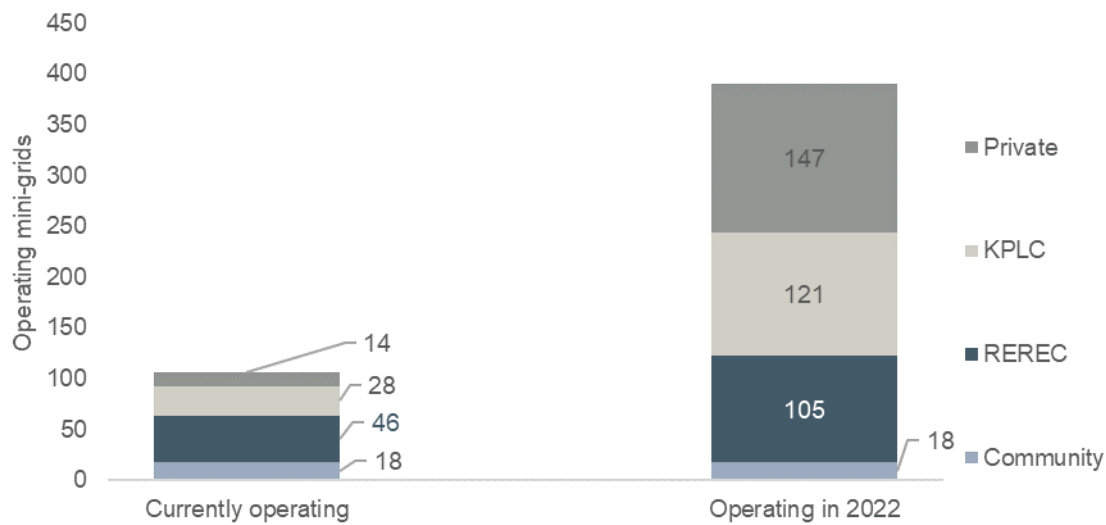


Figure 1: Overview of existing and planned mini-grid sites until 2022

(Source: Africa Minigrid Developers Association & the Authority)

Currently, mini-grids are regulated through the Energy (Electricity Licensing) Regulations, 2012. Despite being an important feature in achieving universal access to electricity in Kenya, the current legal framework does not directly address mini-grid development as it has been designed with national utilities and large-scale grid-connected generation in mind. The enhanced interest in mini-grid development and lack of a clear mini-grid regulatory regime has necessitated the need to develop regulations on mini-grids in Kenya. Providing a simplified, clear and transparent regulatory framework for mini-grids is poised to support growth of this electrification segment.

4. OBJECTIVES OF THE REGULATIONS

The main objective of these Regulations is to facilitate investment in mini-grids of up to 1MW in Kenya by providing a framework for mini-grid tariff approval, licensing requirements,

technical guidelines, and mini-grid performance and reporting requirements. The specific objectives of the Regulations are:

- To harmonize the mini-grid approval requirements by the National Government, County Governments, and relevant regulatory bodies;
- To provide a clear and competitive process for mini-grid site reservation, licensing and interconnection to the main grid;
- To outline the principles and process of mini-grid tariff approval;
- To provide the technical and reporting requirements for safe and efficient operation of mini-grids in Kenya ;

5. REGULATORY ALTERNATIVES

(i) Do nothing option

This option assumes a 'business-as-usual' scenario. In the current situation, several barriers exist in the country that have hindered growth in the mini-grid space. Key barriers include:

- Burdensome permitting and licensing requirements for small systems, whereby the transaction costs of obtaining a licence would add significantly to the costs incurred by the developer and therefore passed on to customers;
- Lack of technical standards specific for mini-grid development and implementation to ensure that systems are designed to meet the needs of poorer rural communities with limited energy requirements, without compromising the safety of those communities;
- Expensive and inaccessible dispute resolution mechanisms for all stakeholders;
- Lack of clarity on allowed tariff and single utility model that discourages private sector investment, inconsiderate of the specific capital and operating costs involved with mini-grid developments, and the financing structures and costs necessary to construct and operate them; and
- Lack of appropriate financing due to perceived high risks in unregulated mini-grid market.

(ii) Self-Regulation

The alternative to the regulation is self-regulation. In this alternative, the players in the mini-grid sector would come up to set common principles that offer mutual benefits to all. Self-regulation has to come within the purview of specific interests of the consumers and the mini-grid developers and operators. However, self-regulatory systems should, above all interests, focus on the interest of the consumers. In such a system, it is envisaged that consumers should have easy access to complaint launching processes. The working of such a system should also be transparent and accessible to the consumers. The system should also have credible and adequate sanctions to support the agreed decisions. As well, there should be adequate power to enforce the decisions.

A successful self-regulated sector would require mutually beneficial arrangements for developers and customers with regards to service standards, prices, and technical and safety standards. To be realized, both customers and developers, either across the entire Kenya mini-grid sector or on a site-by-site basis, would have to engage in detailed negotiations where both parties agree that their interests are protected. It includes having a mechanism of registering qualified mini-grid developers that are easily accessible to end-users. This approach would be effective where all developers have formed a strong association or a common discussion platform. In addition, the government enters into a negotiated agreement with the players to come up with self-regulatory mechanisms.

In Kenya, the self-regulation mechanism is not viable considering there is no existing umbrella organizations that represents all the players. Similarly, there no mechanisms for censuring non-compliant members. Without any regulatory oversight, there would be no immediate recourse for any aggrieved party to address standards, handle grievances, and mitigate disputes. Further, government agencies are involved in this space which requires a mechanism that will ensure the efforts are complementary.

The Energy Act, 2019 and thus the resultant regulations provide a unified mechanism of supporting investment in the mini-grid subsector by both the public and private sector. This

is in addition to providing a framework for ensuring competitive tariffs, enforcement of standard and safety of end users.

6. COSTS AND BENEFITS OF THE REGULATIONS

6.1 Economic Impacts

The Sustainable Development Goal 7 that provides for access to affordable, reliable, sustainable and modern energy for all is in line with Kenya's target of realizing Universal Access to electricity by 2022. The Regulations will aid in the development of an established framework for private and public mini-grid developers, simplify, and standardize the application and reporting process thus facilitate access to universal access to electricity. The Regulations are expected to further encourage the development of mini-grids in rural Kenya without access to electricity. Having access to modern energy brings is cheaper than alternative lighting and energy supplies such as batteries, candles, and therefore saves money for households. Further, it provides more opportunities for businesses that rely on electricity, stimulating rural economic development.

6.2 Social Impacts

The stated objectives of the Regulations are in line with the UN Sustainable Development Goal 7, which aims to 'ensure access to affordable, reliable, sustainable and modern energy for all'. In addition, the Regulations further advance Kenya's goal of achieving universal electrification by 2022. Electricity provides health and safety benefits through refrigeration (safer food storage), and energy sources that are less polluting and dangerous for cooking and lighting.

6.3 Environmental Impacts

The regulations will lead to a better regulated and more competent and accountable mini-grid sector and enhance electricity access in the country. Most of the mini-grids are power by renewable energy sources as opposed to use of fossil fuels, which are associated with negative environmental impacts. With a projected additional 280 mini-grids between now and 2022, mainly powered by solar, hydro and wind, the communities are poised to benefit

from electricity below Kenya's Carbon Dioxide Emission Factor (CEF) of 0.33kg per kWh. Similarly, use of mini-grids for lighting, cooking and entertainment replaces inferior energy sources such as, kerosene lamps and diesel generators.

6.4 Costs of Implementation of the Regulations

The regulations propose a minimal fee to meet administrative costs associated conducting stakeholder engagement during approval and monitoring of the performance of mini-grids. The stakeholder engagement is a requirement in the Kenyan Constitution to ensure the rights and needs of the local communities are met in the implementation of projects. Monitoring is necessary to assure the agreed quality performance standards are met for sustainable energy supply and safe operation of the mini-grids.

Extra costs shall be borne through funds available to the Authority from other sources provided for in Section 20 of the Energy Act, 2019. The enactment of these regulations will NOT result in any additional resource allocation from the government with proposed licensing fees designed not to limit developer from contributing towards development of the mini-grid sector. Information Technology Systems shall be deployed to ensure efficiency in the licensing and reporting as required in the regulations.

7. CONCLUSION AND RECOMMENDATIONS

This regulatory impact statement has analysed three available options of "do nothing", "self-regulation" and explicit regulation through the Energy (Mini-grid) Regulations, 2021. The Energy and Petroleum Regulatory Authority recommends adoption of the recommended regulations as opposed to "do nothing" and "self-regulation".

Once adopted, the Regulations shall streamline the mini-grid sector by providing a framework for mini-grid tariff approval, licensing requirements, technical guidelines, and mini-grid performance and reporting requirements. The regulatory instrument was developed through a participatory process involving mini-grid developers, sector

associations, county governments, relevant government agencies, development partners and non-governmental organizations.

In addition, the regulations provide a framework for promotion of renewable energy technologies.

8. IMPLEMENTATION AND REVIEW

The Energy and Petroleum Regulatory Authority will implement the Energy (Mini-grid), 2021 through publishing in the Kenya gazette. Review shall be done as per the provisions of the **Statutory Instruments Act No. 23 of 2013** and in consultation with stakeholders.