

Fast-Tracking Mini-Grid Development

The African Model Mini-Grid Regulations Tool



IMPACT CASE STUDY

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Ministry of Foreign Affairs of the
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Introduction

In this series of **Impact Case Studies**, GET.transform sheds light on the tangible and lasting results of advancing energy transitions in partnership with high-impact countries and regions. Focusing on both policy and technical reforms, each case explores how tailored advisory, collaborative dialogue, and hands-on implementation have translated into real-world progress. More than snapshots of success, the case studies surface valuable lessons on what has worked and what has not—insights that may inform future strategies for enabling clean, affordable, and reliable energy systems. Together, they aim to capture how targeted support can create ripple effects far beyond individual interventions.

This case study brings focus to the **African Model Mini-Grid Regulation Tool**, a pioneering resource for mini-grid regulation building entrenched in regional and international best practices. The development was driven by the [African Forum of Utility Regulators \(AFUR\)](#) in partnership with GET.transform and [African Union Commission \(AUC\)](#) and included stakeholder consultations, and sector reviews leading to its widespread adoption and institutionalisation by key development partners and organisations.



Launch of the Africa Model Mini-Grid Regulations Tool in the African Union Commission Headquarters in Addis Ababa, Ethiopia, May 2025. © African Union Commission

Partner Testimonials



We recognise the critical role of mini-grids in expanding electricity access for productive use and essential services in rural communities, especially those beyond the reach of national grids. The African Model Mini-Grid Regulations Tool will empower our member states to fast track mini-grid development across the continent.

KAMUGISHA KAZAURA

Director of Infrastructure and Energy
African Union Commission



The AFUR Model Regulation Tool for Mini-Grids in Africa has been developed in collaboration with our partners GET.transform, with the aim of stimulating and accelerating access to green energy for the electrification of the continent. It is a powerful tool for dialogue between stakeholders in mini grid projects. I encourage its massive adoption to enable Africa to rapidly catch up in terms of access to electricity.

HONORÉ DEMENOU TAPAMO

Executive Committee Member
African Forum for Utility Regulators (AFUR)



Proud to have supported the African Model Mini-Grid Regulations Tool – a powerful step toward accelerating mini-grid deployment and unlocking inclusive productivity and opportunity. With the right regulatory clarity, governments can scale mini-grids to deliver transformative energy access across Africa.

FAUZIA CHEVONNE OKEDIJI

Manager, Utility Innovation and Distributed Renewables
The Global Energy Alliance for People and Planet (GEAPP)



1 The Challenge

Mini-grids are small scale distributed power generation and distribution systems to provide energy access in remote areas with no or limited access to the main power grid or where the cost of extending the grid is prohibitive. Mini-grids may be isolated or interconnected to the grid and can serve anywhere from 50 to 1,000 households. While still a fairly nascent decentralised energy model, the mini-grid infrastructure technology has evolved rapidly over the last two decades and is vastly acknowledged as an integral part of governmental electrification strategies. Mini-grids remain the most capital efficient solutions to electrify unserved populations in Sub Saharan Africa (SSA) – 380 million by World Bank estimates and approximately 284 million by International Energy Agency estimates¹.

To electrify these millions, more and better targeted financing is needed. In recent years, a number of regional and multi-country programmes have been launched to scale electrification efforts across SSA with a focus on decentralised technologies including mini-grids. Some of these are highlighted in the table below.

Initiative	Lead Organisation	Regional Focus	Portfolio Size
<u>Accelerating Sustainable and Clean Energy Access Transformation (ASCENT)</u>	World Bank	East and Southern Africa	USD 15 billion to electrify 100 million people in 20 countries
<u>Distributed Access through Renewable Energy Scale-Up Platform (DARES)</u>	The Nigerian Rural Electrification Agency (REA) alongside the World Bank	West Africa	USD 2.7 billion to electrify 40 million people
<u>Zafiri (under Mission 300)</u>	IFC, AfDB, The Rockefeller Foundation, and other philanthropic and commercial organizations	Sub-Saharan Africa	USD 176 million in blended finance

¹ [Access to electricity – SDG7: Data and Projections – Analysis - IEA](#)

<u>Beyond the Grid Fund for Africa (BGFA)</u>	Nefco (Nordic Green Bank)	Sub-Saharan Africa	EUR 142 million
<u>Clean Energy and Energy Inclusion for Africa (CEI Africa)</u>	KfW, BMZ	Sub-Saharan Africa	EUR 49 million
<u>Universal Energy Facility (UEF)</u>	Sustainable Energy for All (SEforALL)	Sub-Saharan Africa	USD 50 million
<u>Get Access - Mini Grid Systems in Uganda</u>	KfW Development Bank	Uganda	EUR 35.50 million
<u>Get FiT Mozambique Mini-Grids</u>	KfW Development Bank	Mozambique	EUR 23.5 milion
<u>PURE Rural Mozambique Climate Project</u>	Enabel	Mozambique	EUR 42 million

While still not enough, these initiatives collectively make available massive financing for scaled deployment of mini-grids in Africa. **However, for companies and investors to truly leverage on this funding and build at scale, governments must also create regulatory reliability, incentives, and fast processing and decision-making frameworks.** Without a well-established and clear regulatory environment, no mini-grid company or investor will enter or scale in the market². As mini-grid markets have matured, a number of national and regional regulatory best practices have also emerged. However, many countries still struggle to incorporate them into their regulatory ecosystem due to lack of capacities, experience, or missing access to industry knowledge. It is therefore imperative to support rapid adoption of harmonised mini-grid regulatory approaches across the African continent to create a harmonised playing field across African countries, allowing investors, financiers and developers to confidently invest and build projects and ensure meaningful utilisation and lasting impact of the aforementioned funding initiatives.

To address this challenge of scaling standardised regulatory approaches for mini-grids, the African Forum of Utility Regulators (AFUR) and African Union Commission (AUC) decided to partner with GET.transform to develop the African Model Mini-Grid Regulation Tool (referred to as Tool hereafter).

² AMDA, 2026, 17 ACTIONS FOR ENSURING MINIGRIDS CATALYZE ELECTRIFICATION IN SUB-SAHARAN AFRICA Mission 300 Position Paper

The innovative development approach and functionality of the Tool are highlighted in the next section.

2 The Approach

The main risks for mini-grid development are demand risk and risk of early project termination due to grid arrival. The first can be addressed through smart system sizing, coupling with productive use of energy equipment and businesses, but most importantly through institution of cost reflective tariffs and allowing flexibility in tariff setting based on demand growth. Similarly, the risk of grid arrival can be addressed through integrated electrification planning at the outset and through robust and transparent compensation frameworks in the event of early grid arrival to an erstwhile mini-grid designated site. These regulatory measures can be further bolstered through long term concessions that can incentivise private sector financing, light handed technical regulations, and bundled licensing approaches which together with long term concessions can contribute to lowering end user tariffs. Without these regulatory measures, developers, financiers, and investors would not be comfortable investing in any market. It is therefore crucial to institute well informed and thought-out regulations for the mini-grid sector.

The [African Model Mini Grid Regulations Tool](#) incorporates all these elements along with some innovations. It is not the first ever mini-grid regulatory template to be developed. What sets it apart, however, is that it does not take a one size fits all approach, rather consolidates best practices from the sector in a way that allows them to be applied in different country, legislative, and business model contexts.

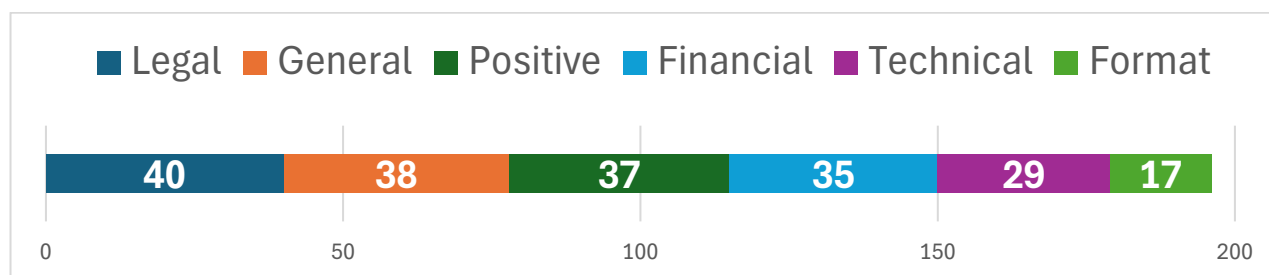
Co-Developed Together with African Regulators and Peer Reviewed by Industry Leaders

Over a period of two years, various regulatory aspects of the Tool have been workshopped with a group of African electricity regulators that are part of the AFUR network. A set of technical, legal, and financial guidelines for mini grids were developed which formed a key foundational step in the development of the Tool. Over this iterative process, regulators from mature markets like Nigeria and Kenya, as well as growing markets like Sierra Leone and Uganda, together with regulators from young, untapped markets like Burkina Faso, Togo, and Zimbabwe have lent their expertise and knowledge to the team of consultants that designed the Tool in both online and in person workshops. To ensure bankability and robustness, the developing team also consulted developers and financiers in a brief stakeholder workshop to further improve the tool based on private sector perspectives.

In addition to this, the Tool went through an extensive peer review process with 15 participating organisations including GET.invest, African Mini-grid Developers Association (AMDA), the Green Energy Alliance for People and Planet (GEAPP), the Regulatory Energy Transition Accelerator (RETA),

UNDP's African Minigrids Program, World Bank. Based on their feedback, the developing team processed and integrated nearly 200 comments to finalise the Tool.

FIGURE 1 Distribution of Peer Review Comments on Mini-Grid Regulation Tool



Source: GET.transform

FIGURE 2 Partners comprising Implementers, Adopters and Reviewers of the Tool



Source: Copyright of each logo with respective organisation

Incorporates Best Practice and Introduces Innovation in Regulation

As has been mentioned, the Tool builds upon and consolidates regulatory best practices from the mini-grid sector. For instance, with respect to tariffs, the Tool embodies the principle of cost-reflectivity but also provides several options that can be included in mini-grid regulations. For example, introducing a mini-grid tariff cap can contribute to reducing some of the political tensions around mini-grid tariffs. It also provides options for specific depreciation methods, capitalisation of OPEX, or multi-year tariff control periods that can smooth the tariff curve and support demand uptake.

In addition to these best practices, the Tool has also introduced innovative regulatory options to further de-risk the market and boost investor and developer confidence. One of these innovations is the Mini-Grid Project Agreement that combines aspects of a license and a simplified concession or project agreement to provide a holistic framework which can be backed up by international guarantees such as those provided by the Multilateral Investment Guarantee Agency (MIGA). The Tool also presents a Deemed Approval Mechanism which ensures that if a regulatory agency fails to respond to any full and complete application made under the mini-grid regulations within the timeframe specified thereunder, such an application is deemed approved. By providing a clear timeframe within which regulatory decisions must be made, the Deemed Approval Mechanism helps reduce administrative delays, uncertainty, and regulatory bottlenecks, thereby facilitating the timely deployment of mini-grid infrastructure.³

Highly Customisable for Eight Different Scenarios

It allows for varying levels of governmental control and ownership, from full public ownership of mini-grid assets to joint ownership to fully privately owned mini-grid infrastructure. Based on the combination of permitting or concession framework and tariff framework together with ownership structures, the Tool can generate eight different scenarios and templates.

FIGURE 3 Mini-Grid Ownership Models

Mini-Grid Ownership and Operation Model	Public Asset Ownership		Private Asset Ownership			Split Asset (Hybrid) Model		
Contractual Arrangement (PPP)			Concession Agreement	MG License with Optional Agreement	Mini-Grid License	Concession Agreement	MG License with Optional Agreement	Mini-Grid License
Mini-Grid Tariff	Main Grid	Cost-Reflective						
Scenario	1	2	3	4	5	6	7	8

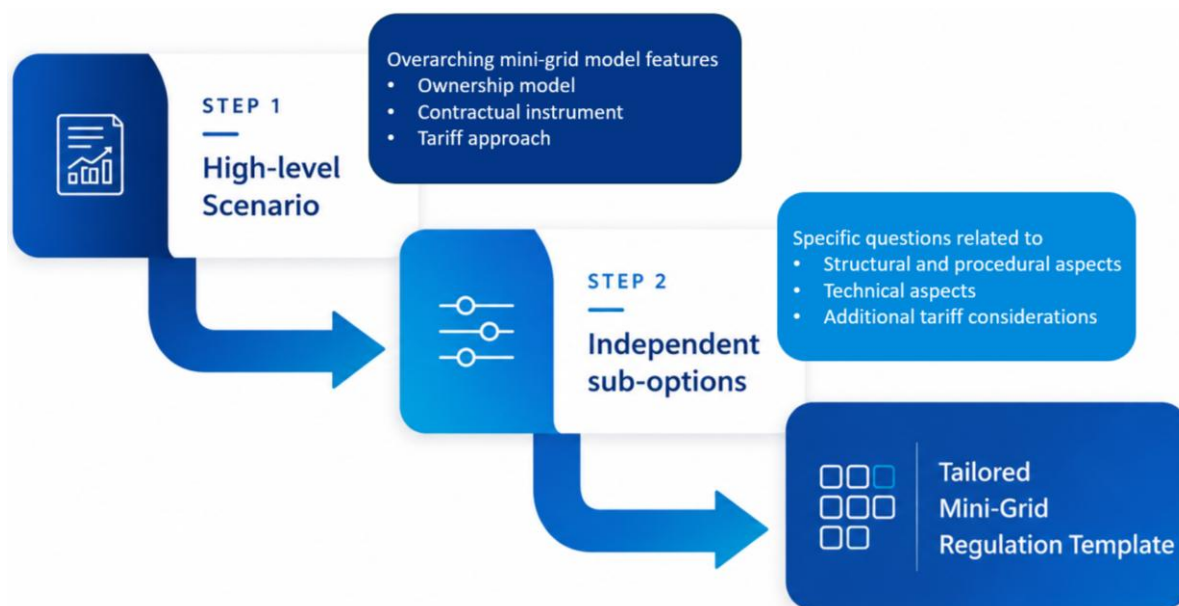
Source: GET.transform

With an easy-to-use guide, the Tool directs users through several guiding questions that serve as discussion points for country stakeholders as they define a regulatory framework that best suits their goals and requirements. These questions allow for different choices in terms of form and content of

³ [Legal Guidelines of the African Model Mini-Grid Regulations Tool » GET.transform](#)

permitting applications, technical aspects like quality and service standards, and economics aspects like tariff considerations and compensation mechanisms on grid arrival.

FIGURE 4 Decision-Making Pathway for Developing a Mini-Grid Regulatory Framework



Source: GET.transform

3 The Impact

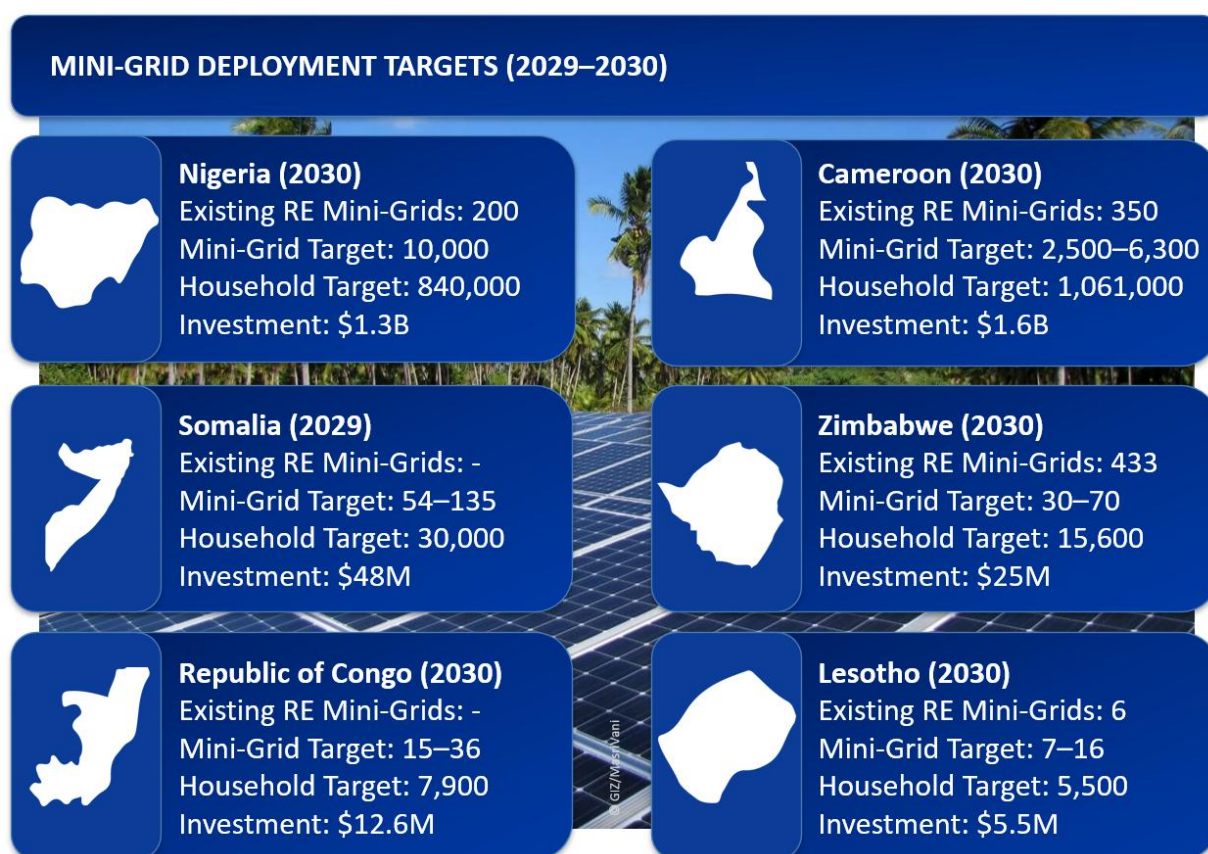
The approach outlined in the previous section lends the Tool a truly African character as it has been developed by the agencies and stakeholders who are responsible for implementing and interacting with it. This is also reflected in the widespread endorsement of the tool by over 30 regional, national and international organisations.

One of the key outcomes has been the regional institutionalisation of the Tool by AUC. Members of AUC participating in the 5th Ordinary Session of the African Union Specialised Technical Committee on Transport, Transcontinental and Interregional Infrastructure and Energy held in May 2026 have called for broader adoption of the Tool across AU Member States. In its Mission 300 Position Paper, AMDA has made a similar call for large scale adoption of the Tool.

Since its launch in May 2025, as many as 10 African electricity regulators have expressed an interest in implementing the Tool in their respective countries. So far, the Tool has been implemented or is planned to be implemented in 6 countries including Lesotho, Zimbabwe, Congo Brazzaville through GET.transform, Abia State (Nigeria) through International Solar Alliance, Somalia through UNDP AMP, and Cameroon through World Bank/AfDB. To evaluate the scale of these initiatives, the table below

outlines the target years, expected connections, expected number of mini-grids deployment, and resource requirements across these countries. While funding requirements represented below are generally modeled on a cost range of \$1,200 to \$2,000 per connection⁴, Cameroon's figures utilize official government compact data. Conversely, because Cameroon's target connections were not officially provided, they were retroactively calculated based on this cost range assumption. Additionally, the projected number of mini-grids is estimated assuming an average demand of 100 W per person, 4.5 persons per household, and a mini-grid capacity of 100 to 250 kW, with the exception of Nigeria, which has already established its own national mini-grid deployment targets.

FIGURE 5 Mini-Grid Deployment Targets Across 6 Countries



Source: GET.transform elaboration based on publicly available data⁵

⁴ AMDA, 2026, 17 ACTIONS FOR ENSURING MINIGRIDS CATALYZE ELECTRIFICATION IN SUB-SAHARAN AFRICA Mission 300 Position Paper

⁵ Government of the Kingdom of Lesotho, 2025, [National Energy Compact for the Kingdom of Lesotho](#)

GET.invest, 2026, [Market Assessment Report Lesotho](#)

Government of Zimbabwe, 2025, [Zimbabwe Energy Compact](#)

AECF, [Renewable Energy in Zimbabwe](#)

Government of the Republic of the Congo, 2025, [National Energy Compact of the Republic of the Congo](#)

Further and more rapid roll out of the Tool is imperative. A strong and harmonised regulatory foundation is key to achieving the goal of electrifying millions - nearly 115 million people or 23 million connections for just M300 countries⁶ via mini-grids by 2030, which will require an estimated USD 28 - 46 billion in capital investment. Relevant stakeholders and technical assistance providers must therefore pool their resources and align their strategies in a way that the [African Model Mini-Grid Regulations Tool](#) is deployed in conjunction with the various mini-grid programs, capital financing and grant funding windows like ASCENT, DARES, BGFA, CEI Africa etc. mentioned earlier.

With reliable and scalable electrification crucial for Africa's development and economic growth, the Tool offers a viable route to overcome inconsistent and fragmented regulatory frameworks that have long hindered progress.

As first adoption results indicate, it can be a true boost for regulatory harmonisation and thus acceleration in mini-grid deployment on the continent.

Nigeria household figure calculated based on an average of 84 connections per mini-grid and number of mini-grids to be deployed (10,000)

Creeeds Energy & Micro Energy International, 2023, [Market Study to Support the Nigeria Electrification Project Component 2: Results – Based Finance Programme for Productive Use Appliances and Equipment for Off-Grid Communities](#)

Africa Policy Research Institute (APRI), 2026, [Scaling-Green-Technologies-and-youth-employment-in-african-tech-startups-the-nigerian-solar-mini-grid-sector](#)

AFRICAN DEVELOPMENT BANK, 2025, [Somalia Country Strategy Paper 2025–2030](#)

Government of Cameroon, 2025, [Cameroon National Energy Compact](#)

⁶ AMDA, 2026, [17 ACTIONS FOR ENSURING MINIGRIDS CATALYZE ELECTRIFICATION IN SUB-SAHARAN AFRICA Mission 300 Position Paper](#)



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