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**Green
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Guidelines for Cooperative- Led Mini-Grid-Development in Ethiopia

June 2022

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GIZ Energy Portfolio Ethiopia

“Green People’s Energy” project

Bole sub-city, CMC Road, Gurd Sholla
P. O. Box: 12994
Addis Ababa
Ethiopia

Contact:

Till Serafimov
Country Component Manager
Green People’s Energy Ethiopia
E till.serafimov@giz.de
T +251 11 645 10 20

Author.:



Consultant Team Members:

Nico Peterschmidt, CEO at INENSUS, Team Leader
Bhoomika Tiwari, Legal and Policy Expert at INENSUS
Mekonnen Kassa, Regional Expert
Eden Fenta, Regional Expert
Melat Mebratu, Regional Expert
Dessaiegn Yigzaw, Regional Expert

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Acronyms

ADELE	Access to Distributed Electricity and Lighting in Ethiopia
CAPEX	Capital expenditure
CBO	Cooperative Bank of Oromia
DBE	Development Bank of Ethiopia
ECC	Ethiopia Cooperative Commission
EEA	Ethiopian Energy Authority
EEU	Ethiopian Electric Utility
EPC	Engineering Procurement Construction
JV	Joint Venture
MFI	Microfinance Institution
MOWE	Ministry of Water and Energy
MST	Minimum Subsidy Tender
O&M	Operation and Maintenance
OCSSCO	Oromia Credit & Saving S.C.
OPEX	Operational expenditure
PBG	Performance Based Grant
PPA	Power Purchase Agreement
TIN	Tax Identification Number

1. Executive Summary

This Guideline for Cooperative led Mini-Grids in Ethiopia (hereafter “Guideline”) has been developed to provide a practical guide to cooperatives wanting to set up mini-grid projects. The Guideline provides information on viable business models, along with information on procurement of necessary certificates and licenses in accordance with Energy Regulation No. 447/2019 (hereafter “Energy Regulation”), Directive for Issuance of Certificate to Self-Use Electricity Providers, 2021 (hereafter “Self-use Directive”), and Mini-Grid Directive No. 268/201 (hereafter “Mini-Grid Directive”), and various financing options that may be available to the cooperatives.

Section 2 provides an introduction to the Guideline and explains how the rural industrialisation approach to mini-grids can be adapted to cooperative led mini-grids in Ethiopia.

Section 3 provides preliminary decision-making options and introduces the choice of models which include the solely cooperative model, and models involving private sector partnerships (Operation and Maintenance (O&M) model, Power Purchase Agreement (PPA) model, Joint Venture (JV) model).

Section 4 describes the steps for setting up a **solely cooperative model** along with its pros and cons. **Section 5 and 6** describe the steps and pros and cons for undertaking the **O&M and PPA model respectively**, and **Section 7 describes the JV model** which is currently not viable.

Sections 8, 9, and 10 describe the application process for procuring a Certificate of Competency under the Energy Regulations, Certificate under Self-use Directive and licenses under the Mini-Grid Directive respectively. Further, Section 11 gives an overview of financing options and loan facilities which may be availed by the cooperatives for setting up mini-grids.

Finally, a template for an **Engineering Procurement Construction (EPC) Agreement with or without O&M services, and a template for a PPA agreement** have been provided in **Section 12 and 13 respectively**. These templates can be used to serve as the foundation for deployment of the models proposed by this Guideline.

2. Introduction

Ethiopia has a rich tradition and expansive network of cooperatives which are involved in the production and distribution of goods and services. It currently has 82,000 primary cooperatives, of which more than 70% are multipurpose cooperatives and the rest are saving and credit cooperatives.¹ Multi-purpose cooperatives can be set up for serving different purposes as specified in their by-laws, which can include generation and distribution of electricity.

The scope of this Guideline includes newly formed cooperatives and existing cooperatives. However, it is particularly targeted towards existing cooperatives or multi-purpose cooperatives that may be able to leverage their managerial and financial resources to undertake energy supply activities in addition to their existing operations.

Over the years, mini-grid models have evolved to look beyond simple electricity production and distribution to include pre-processing and processing of rural goods using mini-grids to establish logistical chains to trading centres, and promoting latest farming and irrigation technologies and practices. This is the rural industrialisation approach which makes mini-grid businesses more viable by providing a level of certainty of demand and introducing alternative revenue channels to the mini-grid project and is discussed in more detail below. Given the strong presence of cooperatives in Ethiopia, there is a great potential for the application of this approach in collaboration with cooperatives.

As such, the models proposed under this Guideline are all based on the principle of rural industrialisation, where a cooperative with its own energy requirements for its processing or pre-processing and productive use activities, can additionally undertake energy generation and supply to not only meet its own demand but that of its community members as well.

In the past electrical cooperatives have been set up in Ethiopia. However, these were not sustainable for a number of reasons, including fluctuating fuel prices, lack of subsidies, O&M expertise, and protection against main grid arrival. The objective of this Guideline is to also address some of these issues by introducing models that involve private sector partnership for more sustained O&M and access to finance. However, where the cooperatives choose to remain regulated only under the cooperative law, the threat of main grid arrival continues to exist. This can be mitigated by choosing to be regulated under the Mini-Grid Directive, but this comes at the cost of the cooperative losing its cooperative status and privileges.

The models described under this Guideline are suited to both the cooperative and mini-grid pathway. A cooperative wanting to set up a mini-grid business would need to evaluate its position and the pros and cons provided under this Guideline to guide it in its choice of model and regulatory approach. However, the Guideline strongly recommends the PPA model as this has the highest potential to be successful, followed by the O&M model, and then the solely cooperative model (which has the lowest potential for success).

¹ GIZ, 2021, Roadmap for Development of Framework for National Roll Out of Community/Cooperative Managed Mini-Grids in Ethiopia

Rural Industrialisation Approach for Successful Cooperative Led Mini-Grids

The rural industrialisation model for mini-grids goes beyond mere generation and sale of electricity; instead, this model employs the mini-grid as a tool for developing local (pre-) processing, and manufacturing in rural areas by identifying promising value chains and developing synergies with the aforementioned value chains. As such, the mini-grid operator not only generates and retails reliable electricity to community members in the village, but also sets up and operates a second line of business for processing and trading locally available raw materials or primary goods like coffee or cocoa beans, vanilla, fish, precious metals etc by itself or in partnership with an organisation with expertise in such value chain. Leveraging the mini-grid operator's logistical capacities, these (pre-) processed goods are then transported to trading centres for further sale, which the rural communities hitherto had no or limited access to, thus integrating local economies into larger national and international value chains.

The mini-grid operator not only acts as a reliable off-taker of local goods harvested by the community members, but the processing unit where it processes these goods also acts as a reliable off-taker for the electricity produced by the mini-grid, which goes a long way in addressing the demand risk which is one of the major risks associated with the mini-grid sector. Further, this model introduces an additional line of revenue generation for the mini-grid business, thus making it viable, provided an appropriate product and value chain has been chosen. Depending on the type of raw material and processing required, community members may also be involved in the business leading to job creation and capacity development within the communities.

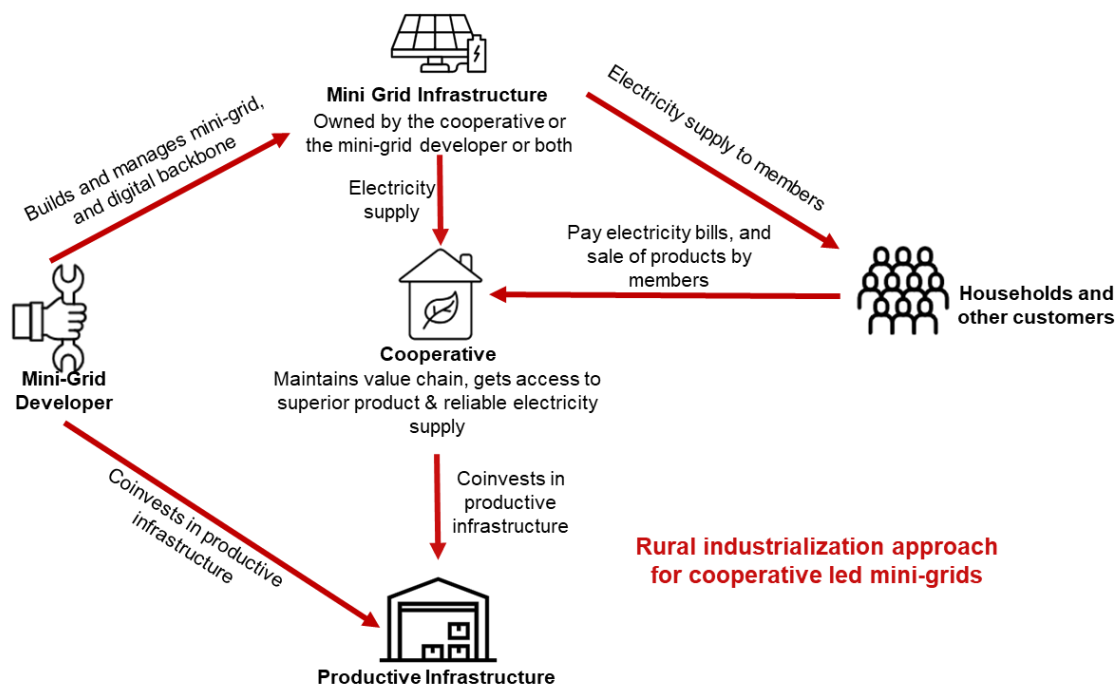


Figure 1. Rural industrialisation approach

The Ethiopian cooperative landscape is well suited for the deployment of the rural industrialisation model as there already exist a large number of cooperatives in Ethiopia which are involved in the development of local value chains through processing and trading of rural produce for the benefit of their members. Such cooperatives often operate in remote and rural areas with little or no access to electricity. Integration of the mini-grid business with the cooperatives' existing or planned operations can not only provide access to electricity to the cooperatives and the community members, but also pave the way for more successful private sector engagement and investment in the mini-grid sector.

This rural industrialisation approach can be applied to any of the models which have been discussed under these guidelines. Based on the model of choice, the mini-grid assets will be owned either by the cooperative (for example under the O&M Model), or by the private developer (for example under the PPA Model generation assets are owned by the private developer), or by both the cooperative and private developer (for example under the JV Model).

Irrespective of the choice of model, it is recommended that the private sector have the responsibility of operating the mini-grid and undertaking O&M activities that require technical expertise, and the cooperative take on the responsibility of customer management, bills collection and regular maintenance work for the facility. For successful deployment of a rural industrialisation approach, certain pre-conditions need to be met:

1. Selection of complementary value chain: Not just any local produce or value chain can be leveraged for the rural industrialisation approach. A produce or product with an established demand or market, and which can guarantee sufficiently high revenues and the processing of which requires predictable levels of electrical supply must be chosen. The box below provides an example of a rural industrialisation approach developed in Tanzania around tilapia fish value chain.
2. Digitalisation of mini-grid: Digitalisation for remote monitoring of assets, customer management and bill collection significantly reduce both operational and capital costs, and frees up the resources of the private developer to develop synergies with local value chains and cooperatives.

Example of Rural Industrialization Model for Fishing Value Chain

JUMEME is a rural PV Mini-grid power supplier in islands of Lake Victoria in Tanzania where Tilapia fish demand is higher than supply, with almost 80% being imported from China. JUMEME, as an early adapter of rural industrialization approach, collaborates with local Tanzanian communities to collect Tilapia on islands in Lake Victoria; cleans, deguts and freezes fish on-site just a few hours after the catch with mini-grid electricity reducing postharvest losses; bypasses two stages of trading intermediaries and delivers high quality Tilapia at wholesale prices to the capital Dar Es Salaam.

JUMEME was able to set-up a reliable and cost-efficient transport chain from its mini-grid site in Lake Victoria to an off-taker in Dar Es Salaam where significantly higher prices are reached than in the next City (Mwanza). The optimized supply chain with frozen fish reduces overall transport cost. Through the on-site freezing water losses are reduced and therefore weight loss is diminished. This results in higher revenues as less of the initially paid fish weight is lost. With its mini-grid on ground the overhead staff of JUMEME is able to perform this activity with minimal additional costs for human resources. Moreover, there are no additional costs for rent, since the refrigerators are placed on JUMEME's site.

Source: KeyMaker Model Fundamentals, GMG Helpdesk, 2019

3. Preliminary Decision Making & Model Choices

3.1 Decision Making Options

Several levels of self-assessment and decision making must precede the decision to develop mini-grids following one or other of the business models which have been described in these guidelines. The decision tree in this section provides a self-assessment and analysis tool to help cooperatives ask appropriate guiding questions, thus leading to the selection of a business model which is best suited to their respective capacities, capabilities and available resources, resulting in different contractual arrangements, responsibilities, licensing requirements etc.

The decision tree asks the following questions:

1. Does the community want to be electrified?

Typically, mini-grids tariffs are higher than national grid-based tariffs which are heavily subsidised. Communities must therefore assess their need and desire to have access to clean and reliable electricity versus their willingness to pay for such electricity. Enough of the community members must also be willing to be electrified and pay for the decision to set up a mini-grid to make business sense.

2. Does the community possess managerial capacities?

Mini-grid businesses require strong customer management, and business and financial planning and management capacities for successful implementation and running of its business. As such, a community wanting to be electrified must inquire into its level of managerial expertise, as in the absence of strong managerial capabilities external support would be required.

3. Does the community have access to finance?

Implementation of renewable energy mini-grids requires high up-front capital costs which is also a barrier to profitability. Even with significant subsidies which may be made available by the government or donor organisations, the community may need to make financial contributions. The level and extent of community's financial contribution would also guide the choice of model.

4. Does the community possess O&M capabilities?

For sustainability of mini-grid systems, they need regular maintenance and upkeep. This varies from simple tasks like cleaning of solar panels to more technical tasks of repairing or replacing equipment of batteries, for which vocational or professional skill in electrical and mechanical systems is required. Existence or access to such skills would also be a deciding factor in the choice of models.

5. Is there presence of a strong cooperative within or close to the community?

Communities with strong cooperative presence which are involved in activities like agro-processing and trading may be able to leverage the managerial and financial resources of such cooperatives for successful running of mini-grid operations, especially in line with the rural industrialisation approach.

The decision tree in Figure 1 below depicts the pathways that a community wanting to electrify itself may go through to guide it in its choice of models. It is to be noted however that while the decision tree is a useful tool for weighing different considerations and trade-offs, it does not exhaust the full range of possibilities that determine the choice and combinations of the business models that a community or cooperative may have at its disposal. For instance, an existing strong cooperative may also decide to partner with the private sector for development of a mini-grid project to power its own operations and the community households. Indeed, this approach is recommended as models with private sector partnership have a greater potential to be successful.

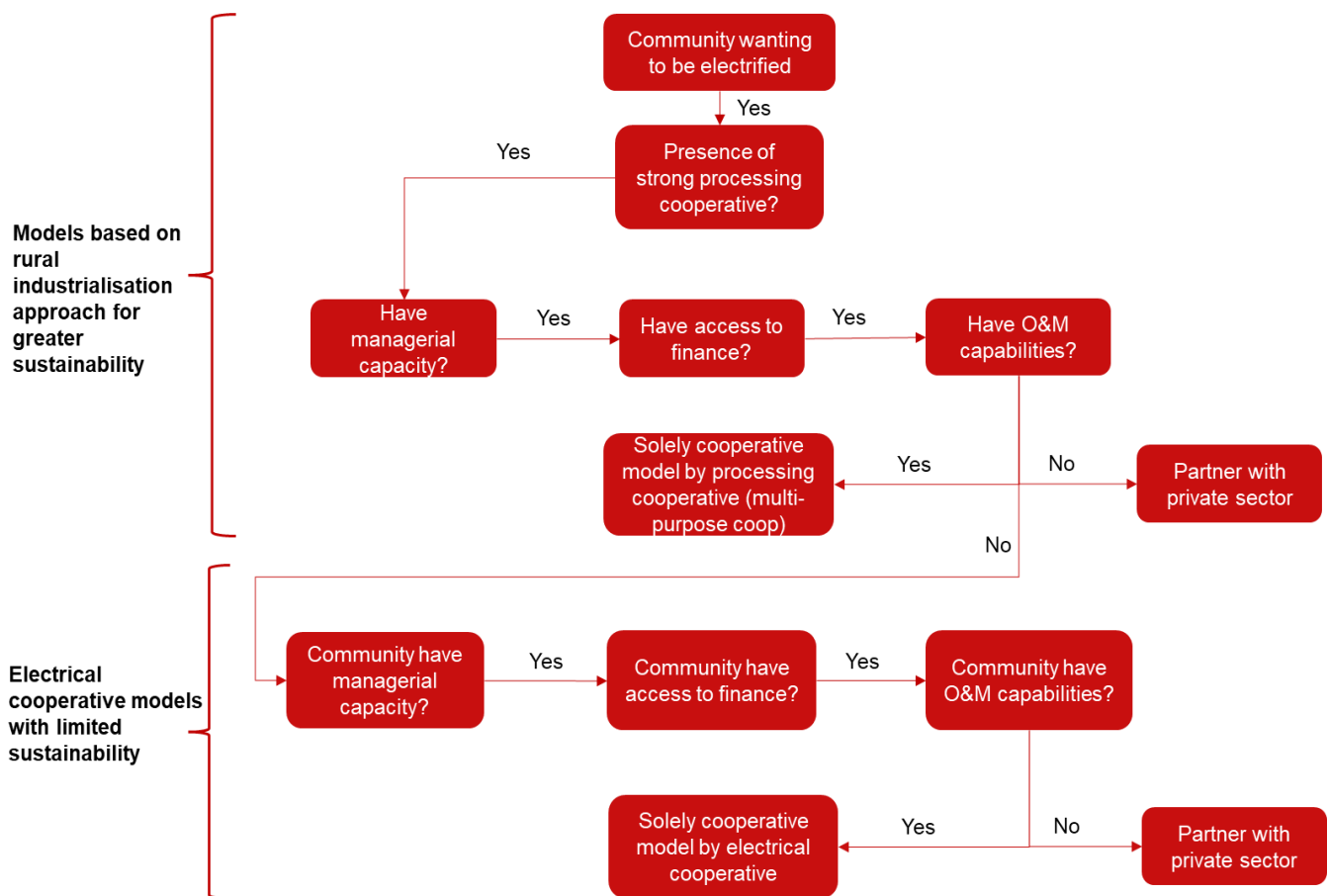


Figure 2. Decision Tree

If a community wanting to be electrified has access to sufficient financing, and to adequate managerial, operations and maintenance (O&M) capabilities, it may opt to form its own electrical cooperative. However, it is very unlikely that remote rural communities would have access to such resources. Due to its lack of feasibility, this model has not been discussed further under this Guidelines.

However, if a community wanting to be electrified does not have access to the aforementioned resources and capacities, as is most likely to be the case, but does have existence of a strong

cooperative, for example a cooperative for coffee, dairy, mining, etc, it may form a multi-purpose cooperative, such that the existing cooperative also sets up and operates a mini-grid to meet its own and the community’s power needs. The steps involved in setting up such a multi-purpose cooperative along with its pros and cons are given under Section 4.

Where however the community does not have the necessary capacities or the existence of strong cooperative with such capacities, it may choose to partner with a private sector entity for development of a mini-grid project. Even with the existence of a strong cooperative, this Guideline recommends opting for one of the models involving a cooperation or partnership with the private sector so that cooperatives can tap into the private sector’s technical expertise and know-how with respect to power systems, which even strong cooperatives usually lack.

3.2 Models for private sector partnership

Depending on the ownership of assets and responsibility of energy generation, supply and maintenance of assets, the following models may be possible:

1. O&M Model: Under this model the cooperative owns the mini-grid assets and engages the private sector to provide O&M services under a framework contract. The steps involved in setting up this model along with its pros and cons are given under Section 5.

2. Power Purchase Agreement (PPA) Model: Under this model the private sector owns and operates the mini-grid generation assets, and the cooperative owns and operates the distribution assets and is responsible for customer management. The steps involved in setting up this model along with its pros and cons are given under Section 6.

3. Joint Venture (JV) Model: Under this model the cooperative enters into a joint venture with private partners to jointly own assets and provide O&M services. The steps involved in setting up this model along with its pros and cons are given under Section 7.

Figure 3 below gives an overview of the aforementioned models which may be implemented in partnership with the private sector. As has already been mentioned, an established cooperative looking to develop a multipurpose cooperative for electricity generation and distribution, may also partner with the private sector under the aforementioned models.

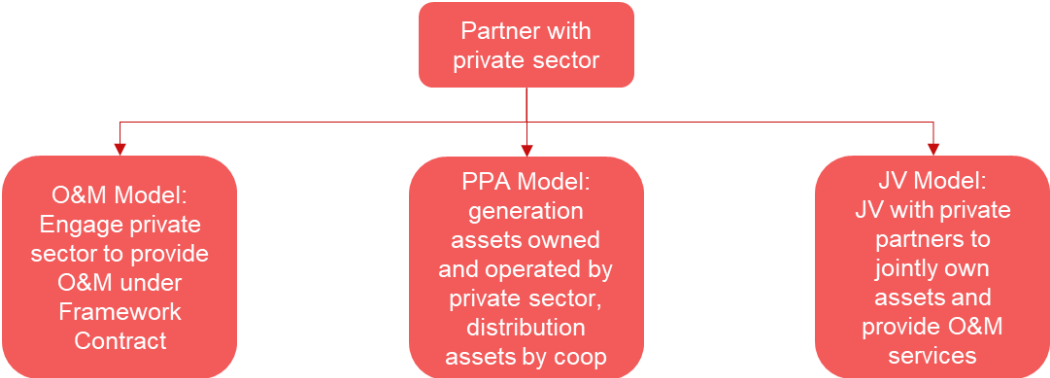


Figure 3. Models for private sector

4. Solely Cooperative Model

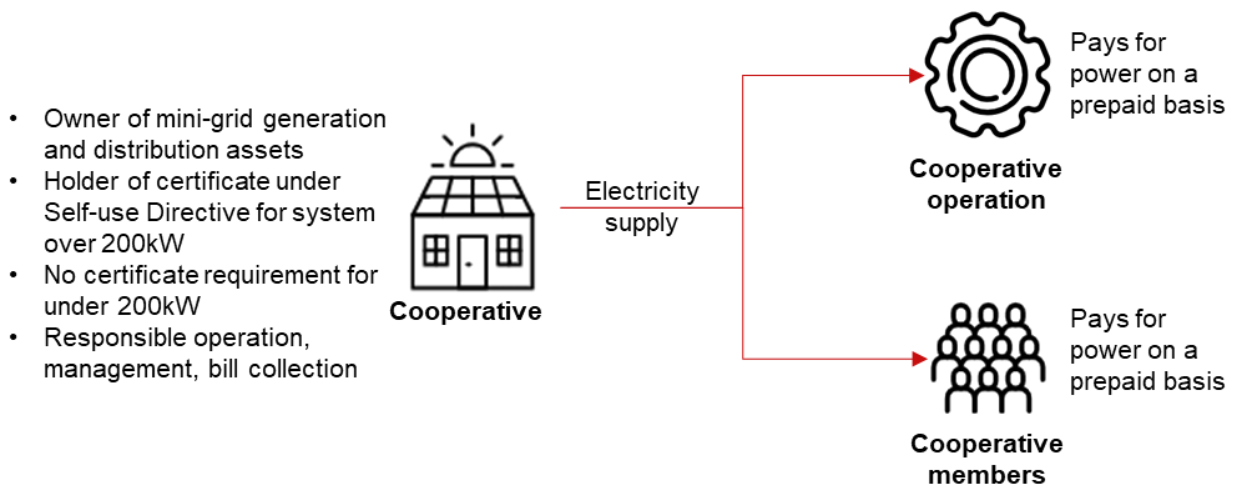


Figure 1. Solely cooperative model

Under this model, the presence of a large cooperative, like a coffee cooperative, or any other cooperative involved in agro-processing or trading, with energy requirements of its own can be leveraged. The existing cooperative would procure the mini-grid and own and operate the same. The electricity generated by the mini-grid would be used by the cooperative to serve its own operations, for example, processing of coffee or cocoa beans, drying of chili or other agricultural produce, powering of machines to churn or pasteurise milk, etc, and for electrifying the community households that are members of the cooperative.

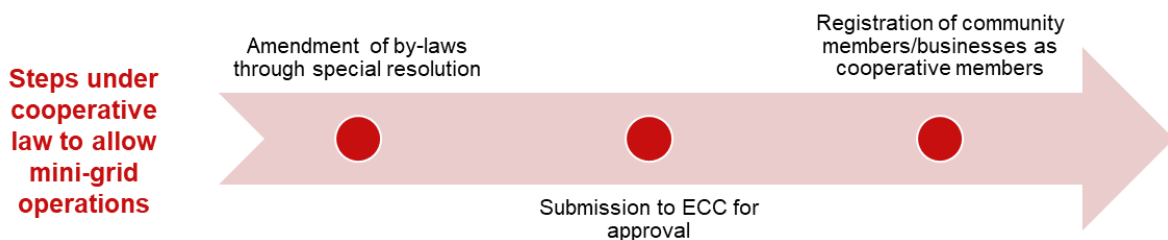


Figure 2. Steps under cooperative law

Prior to setting up a mini-grid, the cooperative must undertake some steps under the cooperative law to allow generation and sale of electricity by undertaking the following steps:

1. Review and amend its by-laws to allow for electricity generation and distribution to its cooperative members, through a special resolution of its general assembly.
2. Submit three copies of the amendment and the special resolution to the Ethiopian Cooperative Commission (ECC) for its approval within 15 days of the decision of the general assembly.
3. Register the community members as members of the cooperative society to be able to supply electricity to them.

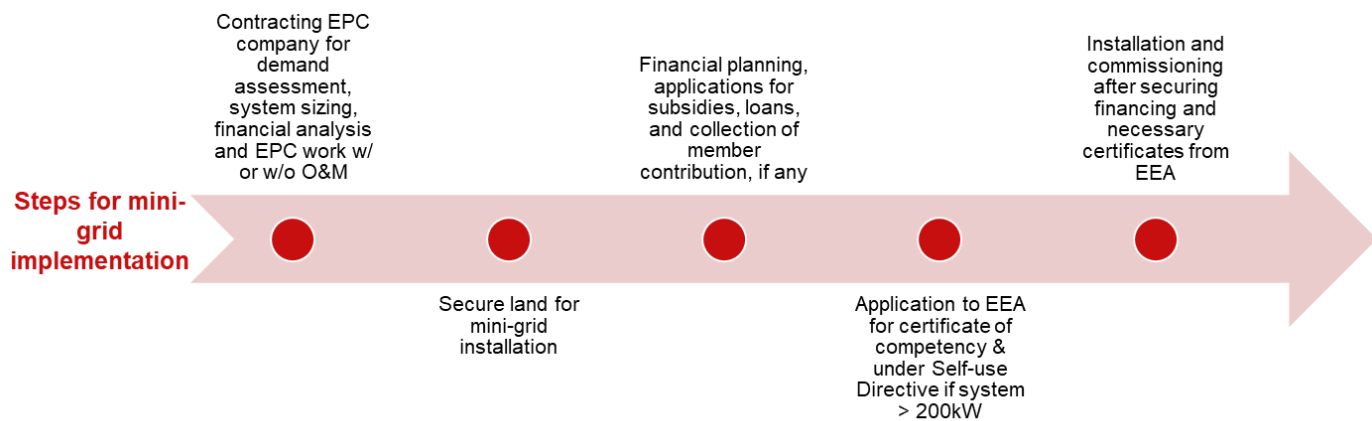


Figure 3. Steps for implementation of a cooperative mini-grid with limited private sector involvement

Once the cooperative has successfully amended its by-laws to allow for electricity generation and sale, it would need to undertake the following steps to set up a mini-grid and procure necessary certificates for the same:

4. Contract an EPC company to undertake an energy demand assessment of the cooperative and the community to which electricity is to be supplied to allow for appropriate sizing of the mini-grid system, analysis of the required capital and operational costs for setting up such system, and advice on placement of the mini-grid system. This analysis should also provide information on the level of subsidy and loan requirements. The same EPC company may also supply, and install the mini-grid system. Please refer to Section 12 for an EPC contract template that may be used by cooperatives for this purpose.

Procurement Approaches for Mini-Grid System

Tender for individual components of the mini-grid. The cooperative would then need to install and commission the system themselves.

Tender for a turnkey solution where the EPC contractor delivers a fully operational project.

As cooperatives do not have technical know-how and capacities, procurement of mini-grid as a **turnkey solution through an EPC company is recommended.** This may be done by contacting EPC companies and receiving estimated quotes to allow for selection of EPC contractor.

5. Based on the advice of the EPC contractor, the cooperative may decide on the land area where the mini-grid would be placed, or apply to the relevant authority at woreda or regional level (this may be the Woreda Cooperative Promotion Office or Regional Cooperative Promotion Office) for obtaining land for the purpose of setting up the mini-grid generation and supply business.
6. Once the system size and associated capital and operational expenditure (CAPEX and OPEX) requirements are established, the cooperative must plan for the financing of the mini-grid system. Mini-grids are typically financed through grants, subsidies, equity and loans. Subsidies for cooperatives to set up mini-grids are available under the World Bank funded Minimum Subsidy Tender (MST) and Performance Based Grant (PBG). As subsidy

alone shall not cover the entire CAPEX and OPEX requirements, the cooperative may apply for a loan to the Development Bank of Ethiopia (CBE) or the Cooperative Bank of Oromia (CBO) or a microfinancing institution (MFI). The cooperative may also receive contributions from its members for setting up the mini-grid. Please refer to Section 11 for possible subsidies and available credit facilities.

7. Apply to Ethiopian Energy Authority (EEA) for a certificate of competency. This application may be made by one or more members of the cooperative. Guidance on how to apply for the certificate of competency is provided under Section 8.
8. If the requirement of the system is under 200kW, the cooperative would not require any further registration or licensing outside of the cooperative regulatory framework. However, if the size of the system would be over 200kW, the cooperative would need to apply to the Ethiopian Electricity Authority (EEA) for a certificate under the “Self-use Directive”. Guidance on how to apply for a certificate under the Self-use Directive is provided under Section 9. If the cooperative intends to outsource the O&M work, application under Self-use Directive must include the O&M contract for the same.
9. Once the Certificate under Self-use Directive has been secured from EEA, or it is established that such a system is not required, the cooperative can proceed with the installation and commissioning of the mini-grid system as per the EPC contract mentioned under point 4 above.
10. Once commissioning is achieved, the cooperative can commence with operations and supply of electricity to its members and for powering its own electricity requirements. Members and the cooperative would purchase electricity units in advance through a pre-paid payment system. The electricity tariffs would be based on the CAPEX and OPEX of the mini-grid system for it to be profitable.

Note on Tariffs

Currently only 2 local mini-grid developers are operating mini-grids in Ethiopia – Ethio Resoure Group and Rensys.

To indicate tariff levels, Rensys is operating an 18.4kW system to provide 24/7 electricity supply to 198 households at three tariffs levels:

- up to 15kWh – charged 8 ETB /kWh,
- 16 – 30 kWh – charged 10 ETB/kWh
- >31kWh - charged 13 ETB/kWh

The cooperative may itself undertake O&M tasks for the successful operation of the mini-grid system. However, it is highly likely that cooperatives would not have the necessary expertise and know-how for the same. It is therefore recommended that cooperatives contract an O&M service provider to provide such services for a specific period of time. This may be done by adopting the O&M model approach for private sector partnership which is discussed in more detail under Section 5.

The steps outlined above are for facilitating a cooperative to supply electricity to its members. Where a cooperative wants to supply electricity to non-members, instead of applying for a certificate under the Self-use Directive (only for systems above 200kW), it must register itself as a business and apply to EEA for a license under the Mini-Grid Directive. Steps for this are given under Section 10.

Pros

- Strong cooperative can leverage its business, and managerial capacity to run the mini-grid business
- Cooperative's on ground presence and local knowledge can support customer management, bill collection, security of mini-grid assets and small maintenance work
- Retain cooperative privileges if not regulated under the Mini-Grid Directive

Cons

- Cooperatives may struggle with procurement of EPC due to lack of experience
- Cooperatives may struggle with business management and financing the mini-grid
- Mini-grid may not be sustainable due to lack of technical expertise for O&M work
- Lose cooperative privileges if choose to be regulated under Mini-Grid Directive

Figure 4. Pros and Cons of No Partnership Cooperative Model

Based on an analysis of the pros and cons of this model, it is recommended that cooperatives opt for a model with greater involvement of the private sector to be able to avail their technical and business expertise for setting up and running a mini-grid business.

5. O&M Model

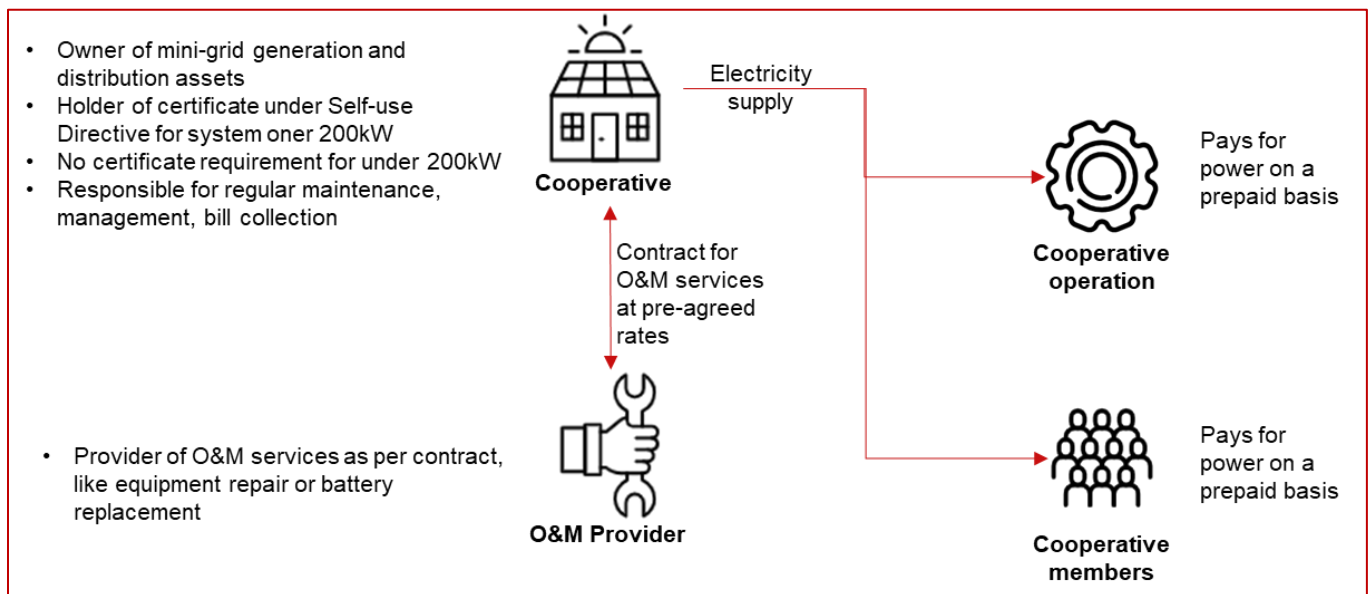


Figure 5. O&M Model

Under this model, the cooperative would be the owner of the mini-grids system. Such a cooperative may be a newly formed electrical cooperative or an existing cooperative involved in agriculture, trade, processing, production or supply of goods and services. The cooperative would own the system, supply electricity to cooperative members and for powering of its own operations, if any, and be responsible for bill collections.

However, instead of undertaking all the O&M tasks by itself, specific O&M tasks that require advanced technical expertise would be outsourced to an O&M provider from the private sector. These may include repair or replacement of system components, replacement or refilling of batteries etc. On the other hand, maintenance work which requires on ground presence but no advanced technical expertise, like cleaning of solar panels, would be carried out by the cooperative itself. The figure below provides an overview of this model.

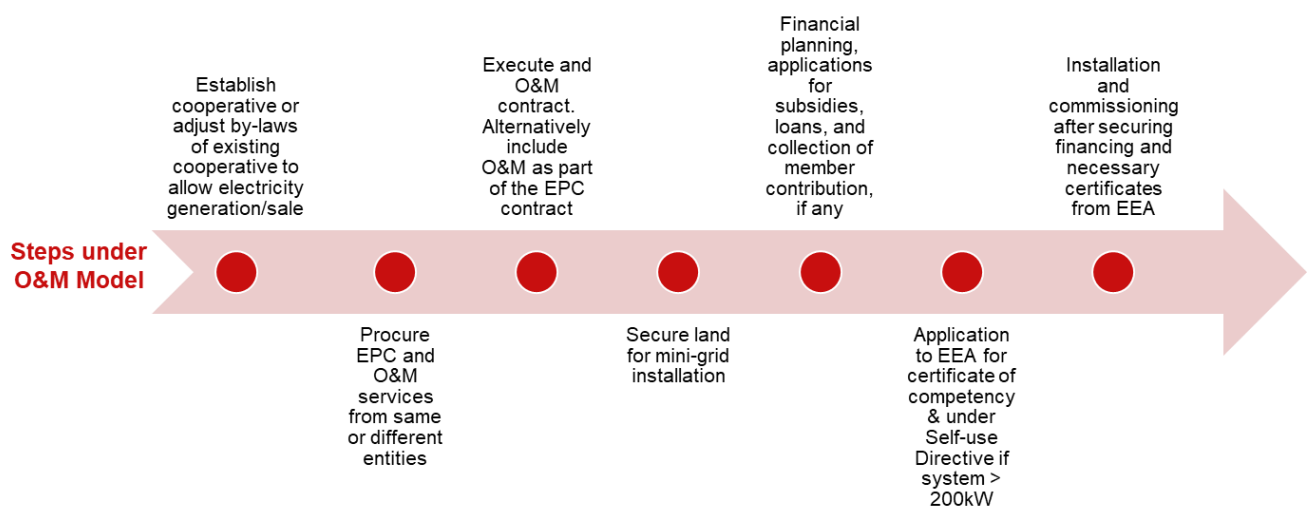


Figure 6. Steps for implementing O&M model

A cooperative may implement the O&M model by following the steps given below:

1. Establishment of a new cooperative or amendment of the by-laws of an existing cooperative to allow for generation and sale of electricity, and registration of members to whom electricity shall be supplied. Please refer to Steps 1 to 3 given under Section 4 for further details.
2. Contract an EPC company to undertake an energy demand assessment of the cooperative and the community to which electricity is to be supplied to allow for appropriate sizing of the mini-grid system, analysis of the required capital and operational costs for setting up such system, and advice on placement of the mini-grid system. This analysis should also provide information on the level of subsidy and loan requirements. The same EPC company may also supply, and install the mini-grid system. Please refer to Section 12 for an EPC contract template that may be used by cooperatives for this purpose.
3. Contact O&M service providers for quotations for their O&M services. A list of potential EPC and O&M providers is provided in Table 1. Once the best priced O&M provider is selected an O&M agreement must be executed.
Alternatively, the EPC contractor which was contracted by the cooperative for designing, supplying, and installing the mini-grid system may also be charged with O&M tasks under the same contract. This approach is recommended over splitting EPC and O&M as it would be more attractive to the private sector and may result in cheaper O&M costs for the cooperative. A format for an EPC contract including O&M services is provided under Section 12.
4. Once the system design is finalised and the EPC and O&M agreements are executed, the cooperative can follow Steps 5 to 10 as outlined under Section 4.

The steps above apply to a cooperative wanting to supply electricity to its own members. Where a cooperative wants to supply electricity to non-members, instead of applying for a certificate under the Self-use Directive (only for systems above 200kW), it must register itself as a business and apply to EEA for a license under the Mini-Grid Directive. Steps for this are given under Section 10.

Below is a list of solar companies in Ethiopia with varying levels of experience and capacities to provide services for demand assessment, EPC, and O&M work.

Table 1. List of EPC and O&M providers

Name of Company	Contact information	Demand assessment & system sizing	EPC work	O&M service	Prior off-grid experience
Ethio Resource Group PLC	Hilawe Lakew Tesema, hilawe.it@gmail.com	Yes	Yes	Yes	Development and operation of solar mini-grids. Experience of SHS, solar off-grid and wind solar micro-grid systems, solar water pumping
Rensys Engineering	Adafre Chane, +251935986635, adafre.c@rensysengineering.com	Yes	Yes	Yes	Development and operation of solar

and Trading PLC					mini-grid systems in various locations
Alphasol Modular Energy PLC	Nebiyu Assefa, Deputy G. Manager +251911623686 nebiyu_assefa@yahoo.de	Yes	Yes	Yes	Installation of SHS, solar institutional systems, micro-hydro, experience with biomass and wind energy
Gorgeous Solar Solution	Gizachew Fekadu, Founder and General Manager +251911250261 gezachew.fekadu@gorgeoussolar.com	Yes	Yes	Yes	Installation of ff-grid and grid tied solar
Green Scene Energy PLC	Rekik Bekele +251913068627 rekik@greensceneethiopia.com	Limited	Yes	Yes	Solar system installation
Suntransfer Tech PLC	Yonas Workie +251930003709 yonas@suntransfer.com	Yes	Yes	Yes	SHS import and distribution
Abramba technologies , PLC	Bahir Dar, Ethiopia +251944065414 info@abramba.com	Limited	Limited	No	SHS import and distribution

Pros

- Longer sustainability of mini-grid due to professional O&M support
- Free up cooperative's resources to run other aspects of business
- Cooperative's on ground presence and local knowledge can support customer management, bill collection, security of mini-grid assets and small maintenance work
- Retain cooperative privileges if not regulated under the Mini-Grid Directive

Cons

- Cooperatives may struggle with procurement of EPC/O&M due to lack of experience
- Cooperatives may struggle with business management and financing the mini-grid
- Cost of O&M may be high
- Lose cooperative privileges if choose to be regulated under Mini-Grid Directive

Figure 7. Pros and Cons of O&M Model

Based on an analysis of the pros and cons of this approach, the O&M Model is recommended for cooperatives which strong financial resources, and cooperatives with well-developed operational, managerial, and finance and accounting processes which can be tapped into for the running of the mini-grid business. If cooperatives lack these resources, the PPA model is recommended.

6. PPA Model

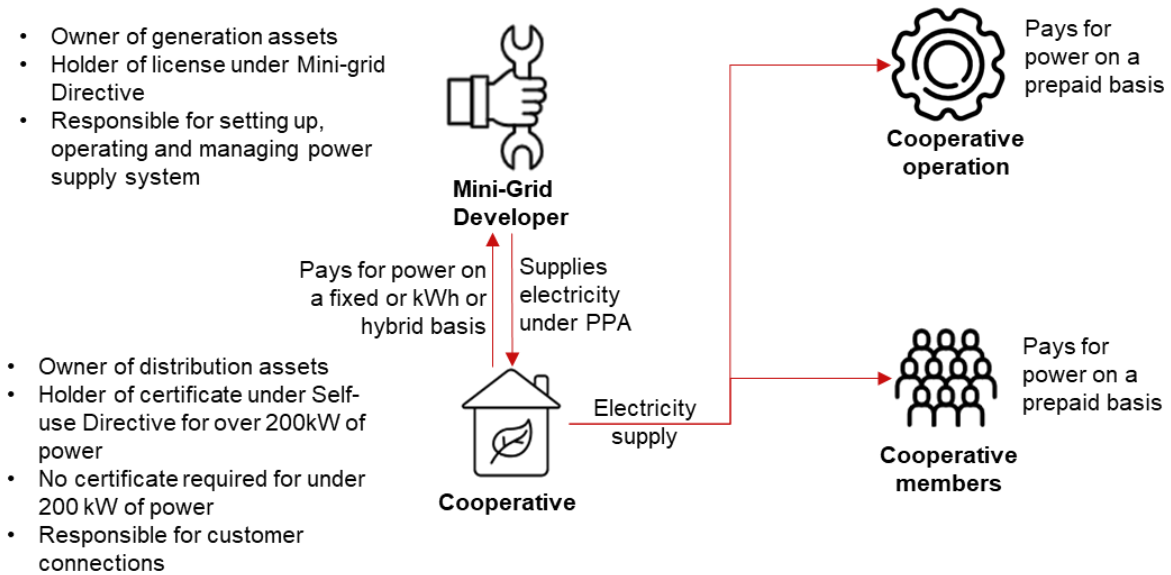


Figure 8. PPA Model

Under this model the mini-grid developer would be the owner and operator of the mini-grid system, for which it would be required to hold a generation license under the Mini-Grid Directive. The distribution network would be owned and operated by the cooperative, and it would purchase electrical power from the mini-grid developer for its own use and use by its members under a PPA. Electricity under the PPA would be supplied by the mini-grid developer into the distribution network of the cooperative.

As per the terms of the PPA, the mini-grid generation and distribution assets would be designed and constructed by the private developer. However, upon commissioning the distribution network assets will be transferred to the ownership of the cooperative for a predetermined fee payable by the cooperative to the mini-grid developer.

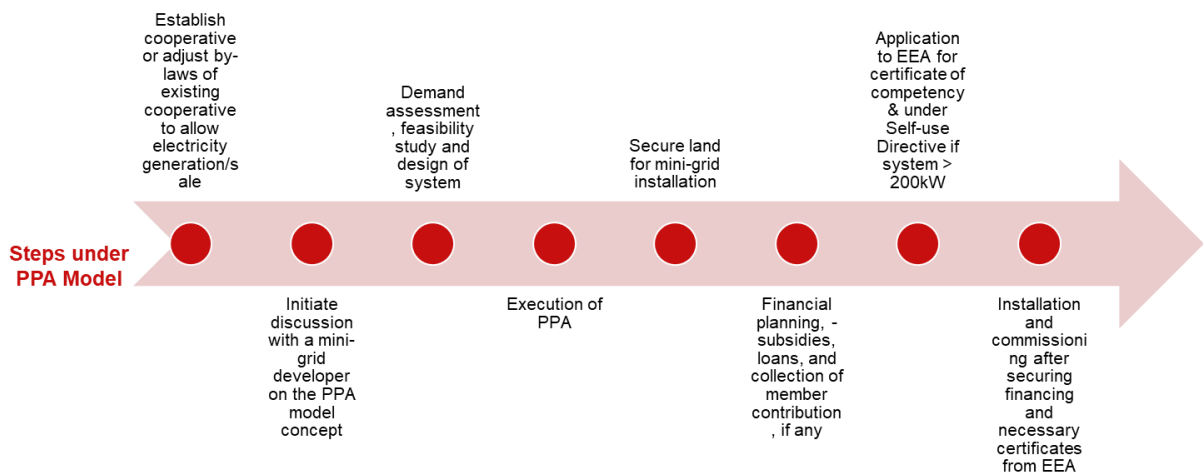


Figure 9. Steps for implementing PPA model

For implementing the PPA model, the following steps must be undertaken:

1. Establishment of a new cooperative or amendment of the by-laws of an existing cooperative to allow for sale of electricity, and registration of members to whom electricity shall be supplied. Please refer to Steps 1 to 3 given under Section 4 for further details.
2. Once the cooperative is eligible to supply electricity as per its by-laws, the cooperative should enter into discussions with mini-grid developers and/or EPC contractors on the PPA approach to gauge their suitability and interest, and shortlist an eligible mini-grid developer based on these discussions. A list of mini-grid and solar EPC companies is provided under Table 1 above which may be referred to for this step.
3. The chosen mini-grid developer should visit the prospective location to conduct a feasibility analysis including demand assessment, system sizing, and an analysis of the required capital and operational costs for setting up such system, and advice on placement of the mini-grid system. This analysis should also provide information on the level of financing required from the cooperative for the distribution network. The cost of this analysis may be borne by the mini-grid developer or jointly by the mini-grid developer and the cooperative.
4. The aforementioned analysis should result in system and network design by the mini-grid developer, which should be explained to the cooperative for its approval.
5. Once the designs are approved the mini-grid developer and cooperative should execute a PPA laying down the rights and obligations of both parties, including the obligation of the mini-grid developer to construct the distribution network at the cost of the cooperative, the minimum and maximum power to be supplied to the cooperative, the tariffs for the same, requirements for meter reading and payment terms. A template for the PPA agreement which may be used by the cooperative is provided under Section 13.
6. Parallel to the execution of the PPA, or soon afterwards, the mini-grid developer and the cooperative may jointly or independently secure the land area where the mini-grid would be placed based on the advice of the mini-grid developer.
7. Next, the cooperative must secure financing for the capital and operational costs of the distribution network, an analysis of which was provided by the mini-grid developer to the cooperative under step 3. The cooperative may apply for a subsidy, loan, or collect community contribution or a mix of any of these sources to finance its distribution network. Please refer to Section 11 for information on some financing sources which may be accessible to the cooperative.
8. Apply to EEA for a certificate of competency. This application may be made by one or

Note on PPA

A Power Purchase Agreement, or a PPA, is a contractual agreement between a power producer (mini-grid developer in this case) and a customer (cooperative in this case) for supply of electricity generated by the power producer.

The following main elements should be included in the PPA:

- Term of the PPA should be long enough to allow for recovery of investment
- Tariffs must be clearly laid out as fixed rates, or charges per kWh or a hybrid
- Ownership of the meter, and responsibility of cost and meter reading
- Invoicing and payment terms
- Conditions under which supply may be interrupted
- Conditions for termination
- Dispute resolution and governing law.

more members of the cooperative. Guidance on how to apply for the certificate of competency is provided under Section 8. If the requirement of the system is under 200kW, the cooperative would not require any further registration or licensing. However, if the size of the system would be over 200kW, the cooperative would need to apply to EEA for a certificate under the Self-use Directive. Guidance on how to apply for a certificate under the Self-use Directive is provided under Section 9.

9. Once the Certificate of Competency and certificate under Self-use Directive, if required, have been secured from EEA by the cooperative, and the mini-grid developer has also procured a license under the Mini-Grid Directive, the installation and commissioning of the mini-grid system can commence as per the terms of the PPA.
10. Once commissioning is achieved, the mini-grid developer and the cooperative can commence with operations, with the mini-grid developer supplying electricity to the cooperative's distribution network, which the cooperative shall supply to its members and for powering its own electricity requirements. Members and the cooperative would purchase electricity units in advance through a pre-paid payment system.

The steps above apply to a cooperative wanting to supply electricity to its own members. Where a cooperative wants to supply electricity to non-members, instead of applying for a certificate under the Self-use Directive (only for systems above 200kW), it must register itself as a business and apply to EEA for a distribution license under the Mini-Grid Directive. Steps for this are given under Section 10.

Pros

- Procurement and EPC by professionals with mini-grid expertise
- Longer sustainability of mini-grid generation assets due to professionals running the operations
- Frees up private sector from being locally present at all times
- Frees up cooperative's resources to run the distribution operations
- Cooperative's on ground presence and local knowledge can support customer management, bill collection, security of mini-grid assets and small maintenance work
- Retain cooperative privileges if not regulated under the Mini-Grid Directive

Cons

- Risk of termination and tariff dampening is high for private sector if cooperative is a single customer
- Cooperatives may struggle with managing and maintaining the distribution network
- Lose cooperative privileges if choose to be regulated under Mini-Grid Directive

Figure 10. Pros and cons of the PPA model

As can be seen from the pros and cons listed above, this model has the most potential to be successful as cooperatives can be freed up from investing resources in the procurement process for installation and construction of the

mini-grid systems. They need to only ensure that they have the financial capacity to pay for the distribution system and for its O&M. It may also be agreed between the cooperative and the

mini-grid developer that technical O&M for the distribution system would be undertaken by the mini-grid developer from time to time at a fixed fee, or in lieu of the cooperative providing security for the mini-grid generation assets and regular maintenance work for it, which would also free up the mini-grid developer from being present at the mini-grid site. The mini-grid developer need only visit the site for tasks requiring advanced technical expertise.

7. JV Model

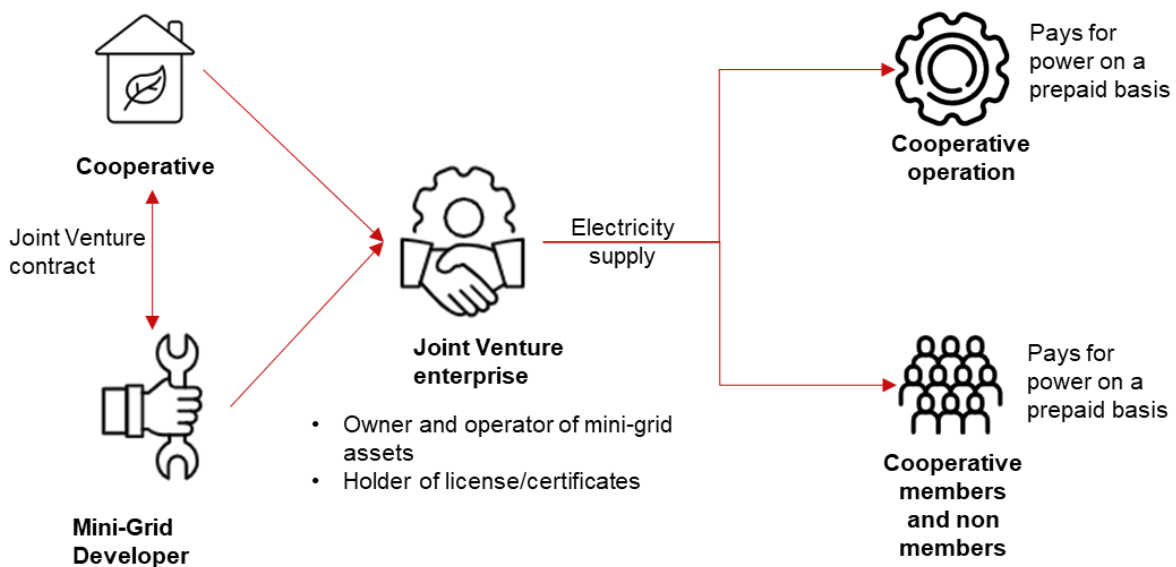


Figure 11. Joint venture model

Under this model, a cooperative would enter into a joint venture agreement with a private sector mini-grid developer to jointly own and run the mini-grid business. The joint venture entity would be the owner and operator of the mini-grid assets, and may be required to hold the necessary licenses or certificates.

Presently, there is no regulatory provision that allows a cooperative to enter into a joint venture with a private sector company. While a definition for “joint venture” has been included in the draft Regulations for Cooperatives which is yet to be adopted, and it is the intention of the Ethiopian Cooperative Commission (ECC) to further define the type and manner of joint venture arrangements that cooperatives may enter into, and the procedures for the same, these modalities currently do not exist.

As such, this model is not viable under the existing regulatory framework but is mentioned here as it may become feasible at a later time.

8. Application for Certificate of Competency

Certificate of Competency is a certificate or document issued by the Ethiopian Energy Authority certifying the competency of an individual or an organisation to engage in electrical works. This must be procured from the EEA by submitting an application for the same by a professional member of the cooperative who would be liable in case personal or material damage arises due to technical dysfunctionalities.

Following information must be provided to EEA with the application by the professional member:

1. Identity and address of the applicant
2. Level of education
3. Work experience as appropriate
4. Examination and registration fee (listed under Table 1 of Energy Regulations)
5. Technical criteria and documents as specified by EEA

EEA may conduct an examination upon receiving the application, and after conducting the examination, if required, and considering the application, may reject or issue the Certificate of Competency.

9. Application under Self-Use Directive

Application must be made in accordance with **Form 1A** provided under Appendix 1 of the Self-Use Directive. This form must be accompanied by:

- a. a cover letter addressed to the Director General of EEA, and must be signed by an authorised officer of the cooperative
- b. a receipt confirming payment of prescribed application fee
- c. 2 copies of the information and documents listed under Appendix 2, Part 2 of the Self-Use Directive. A list of these is given in the box below.

After receiving the certificate and before commencing the electricity generation and supply, the cooperative must submit the following to EEA for its approval:

- a. Safety and Technical Management Plan which must include: safety policy statement; safety codes and practices; policy on demarcation, protection, prevention of unauthorised entry to site; employee health and safety requirements in line with Ethiopian labour standards
- b. Commissioning report
- c. As built drawings

Exhibits to be submitted under Self-use Directive

Two copies of the following exhibits must be submitted along with the application under the Self-use Directive:

1. Scope of operation
2. Particulars of principal officers, directors, partners, shareholders
3. Statement of description for assets and technology
4. Feasibility report
5. Operational experience and expertise, and operation and maintenance agreement if O&M is to be provided by another entity
6. Generation plant technology
7. Confidential information. If any, to be indicated to allow EEA to treat it confidentially
8. Site analysis and geological survey
9. Land conveyance and land use permit
10. Environment and Social Impact Assessment Study/Report, and Environmental Authorization/Approval letter from Environment and Climate Change Directorate of the Ministry
11. Public health and safety plan
12. Special permits for hydroelectric power plants including Water Use Certificate and Development Permit from MOWE
13. Special permits for geothermal power plant including Exploration Certificate and Drilling Permit and/or Geothermal well-field development and use certificate from EEA and a Development Permit from MOWE
14. Site layout and drawing
15. Plant machinery and specifications

10. Application under Mini-Grid Directive

10.1 Steps prior to licensing application

It is important to note that prior to applying for a Generation and/or Distribution and Sale License, under the Mini-Grid Directives, any the cooperative or private sector company must already have or undergo the following steps:

Steps Prior to Licensing

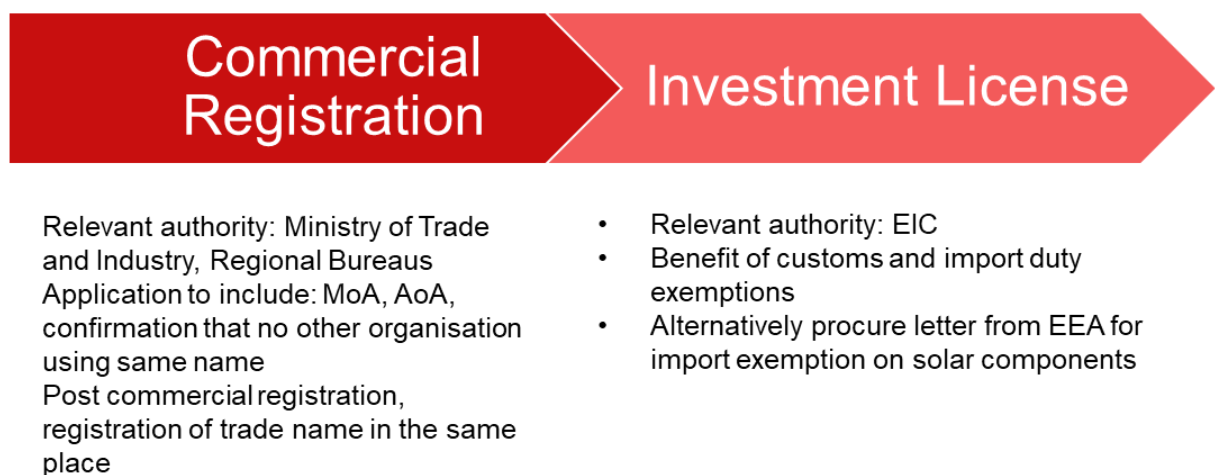


Figure 12. Steps prior to mini-grid license application

1. Undertake Commercial Registration. The relevant authority for this purpose is the Ministry of Trade and Industry and the Regional Trade Bureaus. Following steps/information must be submitted for a commercial registration along with the application form:
 - i. Memorandum of Association, Articles of Association
 - ii. Confirm another organisation is not operating under the same name

After verifying the application and obtaining the tax identification number (TIN) from the tax collecting authority, registering authority will approve it.

After the commercial registration, the organisation can register their trade name in the same place where the commercial registration was undertaken.

2. Obtain Investment License. This must be procured from the EIC. Investment license provides the benefit of customs or import duty exemptions. This can be endorsed by the EEA to ensure duty free import of solar components.

Alternatively, a letter from the EEA would also suffice for duty free import of solar components, confirming the investment for developing a renewable energy system and requirement for import of solar components.

10.2 Steps for license under Mini-Grid Directive

Mini-Grid Directive Regulatory Thresholds

1. **Class I Mini-Grids \leq 50 kW. License Mandatory**
2. **Class II Mini-Grids $>$ 50 kW \leq 200 kW. License mandatory**
3. **Class III Mini-Grids $>$ 200 kW $<$ 10 MW. License Mandatory**

All application for license submitted under the Mini-Grid Directive for any of the aforementioned classes would follow the following process:

1. Fill and submit application form signed by a principal officer to EEA along with fee payment confirmation and cover letter. Form given under Appendix 1, and fee under Appendix 5. Application must be accompanied by exhibits and documents listed in the box below.
2. EEA will register the application
3. Public notice of application
4. Hearing and negotiation of objections
5. Reject of issue license. Timelines for EEA to make a decision on the application after settlement of objection/comments are as follows:
Class I – 10 days
Class II – 10 days
Class III – 60 days

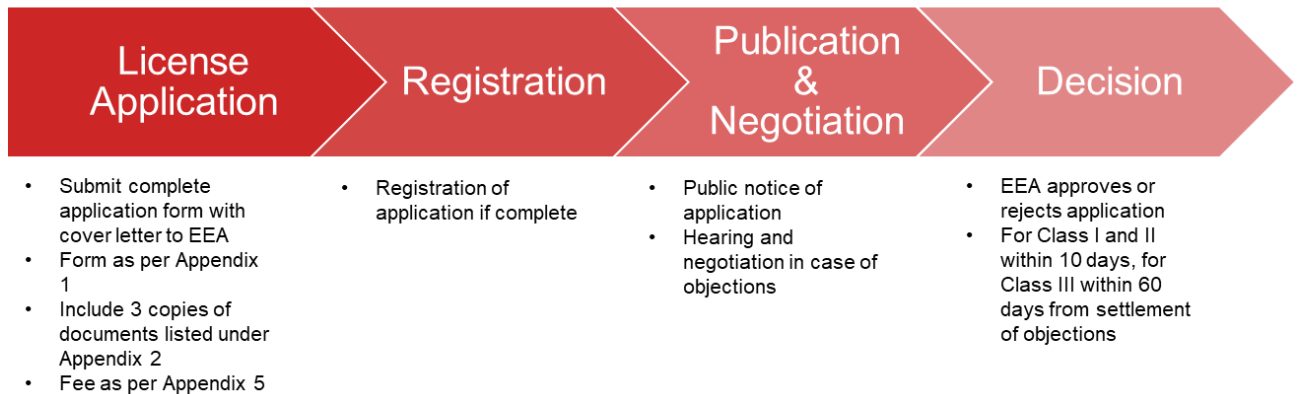


Figure 13. Application process under Mini-Grid Directive, Source: GIZ, 2021

Exhibits to be submitted under Mini-Grid Directive

Three copies of the following exhibits must be submitted as per details under Appendix 2 of the Mini-Grid Directive:

1. Scope of operations
2. Registration of organisation
3. Particulars of principal officers/directors/partners/shareholder
4. Ownership and corporate Structure (Class II and III)
5. Cross-ownership and ringfencing
6. Disclosure of liabilities and investigations
7. Financial capacity, proposed financial plan, financial model
8. Description of assets and technology
9. Feasibility report
10. Business plan
11. Industry participation and other activities (Class III)
12. Operational experience and expertise
13. Plant technology
14. Statement of confidential information
15. Site analysis
16. Land conveyance and land use permit
17. Environmental authorisation and plan
18. Public health and safety plan
19. Special permits for hydroelectric and geothermal power
20. Site layouts and drawings
21. Implementation agreements and permits (if relevant)
22. Detailed implementation schedule
23. Plant machinery specification
24. Supply agreement
25. Safety and technical management plan (Class II and III)
26. Commissioning report and decommission plan (Class II and III)
27. As built drawing
28. Summary of safety compliance on supply system installations

For different Class of licenses, the following additional information must also be submitted:

Applications for Class I must also include:

1. Tariff negotiated with community (not required to follow the tariff methodology)

2. Agreement with customers as per template under Appendix 4 and endorsed by appropriate local authority
3. Environment clearance certification from Environment Forest and Climate Change Commission

Applications for Class II must also include:

1. Tariff calculation and application as per tariff methodology (only for approval not review by EEA)
2. Agreement with customers as per template under Appendix 4 and endorsed by appropriate local authority
3. Environment clearance certification from Environment Forest and Climate Change Commission

Applications for Class III must also include:

1. Tariff calculation and application as per tariff methodology for tariff review by EEA
2. Agreement with customers as per template under Appendix 4 and endorsed by appropriate local authority
3. Environment clearance certification from Environment Forest and Climate Change Commission

11. Possible Financing Facilities

Mini-grids require high upfront capital costs, and additional operational costs for O&M and customer management over the duration of the mini-grid project. To ensure that the right balance is struck between tariffs that are charged to rural households and the return on investments to the investors and developers, mini-grid businesses are generally subsidised by governments and/or donor funds. Such grants usually vary between 50 to 80 percent of the project cost, and the remaining project costs must be met through loans, equity financing, or community contribution. Below we discuss both available and possible avenues for the financing of cooperative led mini-grids.

11.1 Minimum Subsidy Tender for PPA model

World Bank has provided USD 500 million for the Access to Distributed Electricity and Lighting in Ethiopia (ADELE) Project in Ethiopia, which is a component of Ethiopia's National Electrification Program. One of the goals under the ADELE project include deployment of innovative solutions such as decentralized renewable energy technologies, particularly solar photovoltaic (PV) mini-grids and individual solar system for both household and productive use through public and private delivery modalities.

These modalities include the Minimum Subsidy Tender (MST) and the Performance Based Grant. Under MST, the Ethiopian Electric Utility (EEU) with the technical assistance of its development partners will pre-select mini-grid sites in Ethiopia which will then be put to tender. Out of the bids submitted in response, proposals requiring the least amount of subsidy for a minimum number of connections would be awarded the MST to cover part of their capital expenditure. Under PBG, the private sector may select sites on its own and submit a site-specific technical application to EEU for grants under the PBG.

The operational guidelines and application documents would need to be structured in a manner so as to allow for a joint application by a private sector mini-grid developer together with a cooperative under the PPA model. Under this approach, the mini-grid developer and cooperative may form a consortium to allow for a joint application, with the mini-grid developer being the lead member. If the proposal submitted by such a consortium is approved, the mini-grid developer would execute a Grant Agreement with EEU, which would make it a condition for the mini-grid developer to enter into a PPA with the cooperative, and for the mini-grid developer to build and transfer the distribution network to the cooperative. The distribution network may be fully subsidised by the grant, while other costs may be partially subsidised. Overall, it is recommended that MST or PBG subsidise 60 to 70 percent of the project costs.

The figure below further provides an overview of this approach, which will be further defined as part of a financing concept note.

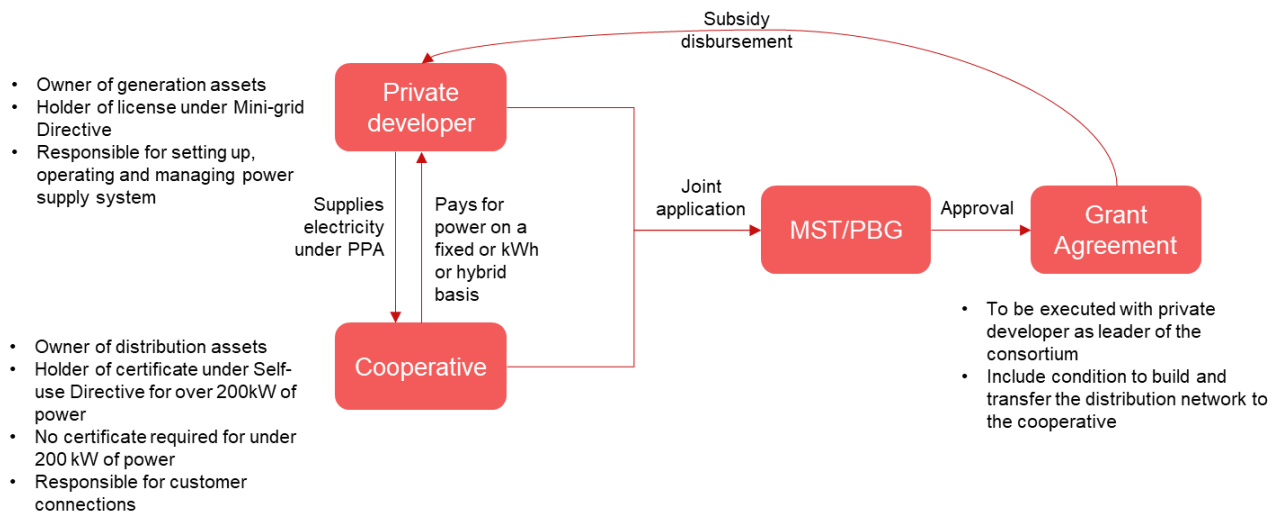


Figure 14. Financing concept for PPA model under MST/PBG

11.2 CBO credit facility

A cooperative may apply to CBO for a loan facility to finance its mini-grid project. Cooperative societies hold more than 60% shares of the bank. The CBO provides access to training and financial services to Ethiopian cooperatives and medium and small enterprises (MSEs). Given CBO's special emphasis on cooperatives, the interest rates applied to loans to Cooperative Societies are generally lower than those available to the Bank's conventional customers.

Credit facilities are available in the form of term loans, which may be provided for a short term of up to 1-year, medium term of up to 5 years, and long term of more than 5 years. Interest rates may vary between 8.5% per annum to 11.5% per annum.

In general, CBO has no collateral requirements for cooperatives. The loan amount and requirement of equity contribution by the cooperatives would depend on CBO's assessment of the project and its feasibility. However, the maximum credit limit for a single borrower must not exceed 25% of the CBO's paid-up capital.

To apply for a CBO credit facility, a cooperative must hold a savings or current account with the CBO and furnish the following documents:

1. Application Letter
2. License (as appropriate):
 - Legal registration certificate of the cooperative
 - Investment license (for new projects and project expansion)
3. Financial Statement:
 - Audited Financial statement for the past three years
 - Provisional financial and or Interim statements for present year
4. Taxpayers Identification Number (TIN)
 - Of the cooperative
 - Of at least one of the management committees
5. Well prepared and justifiable business plan including forecasted cash-flow at least for the loan repayment period for working capital requests and detailed feasibility study for project financing requests
6. Management profile

7. Bank statement of at least one year
8. Registered by-laws of the cooperative, registered lending procedure of the cooperative
9. Minutes of the general assembly for loan request
10. Support letter from respective cooperative promotion agency
11. Proof of ownership of collateral (certificate), if applicable
12. Credit information (from National Bank of Ethiopia)
13. Other relevant documents as may be required and advised by CBO

11.3 DBE credit facility

The Development Bank of Ethiopia (DBE) provides development financing for government's priority areas which includes electrical power generation. It has experience of administering funds for small scale off-grid solar solutions like solar home systems (SHS), solar lanterns, as well as bio gas and improved cookstoves.

Although there is no specific financing facility within the DBE for mini-grids, cooperatives wanting to set up mini-grid projects could apply for the general loan products offered by DBE.

DBE provides both medium term (repayable within 3 to 5 years including grace period) and long-term loans (repayable within maximum 20 years including grace period). The specific period for the project would be based on its financial analysis and fund flows. Interest rates are negotiable and may vary from 9% per annum to 12% per annum. A minimum equity contribution of 25% for domestic borrowers and 50% for foreign borrowers is required. For mini-grid projects, DBE may require collaterals covering the full value of the loan.

Below is a checklist of general requirements for availing DBE's loan facilities:

1. Necessary permits like investment certificate, principal registration certificate, TIN
2. Contractual lease agreement extending to 5 years after full payoff of loan, title deed certificate or proof of ownership
3. Approved blue prints of any architectural, structural, sanitary, electrical plan
4. Bill of quantity
5. Approved site plans
6. Construction permit
7. Take off-sheet
8. Pro-forma invoices for suppliers including major specifications, quantity, quality and price of the investment items
9. Bid evaluation documents for turnkey projects
10. Business track records
11. Information on management personnel including profiles
12. Source of equity
13. Feasibility study
14. Executive summary of the project including market and technical study, management plan, manpower requirement
15. Memorandum and articles of association (for cooperatives this may be registered by-laws)
16. Any other information of document as may be advised by DBE

11.4 Micro-financing Institutions

MFIs can be another source of financing for cooperatives for setting up a mini-grid system. There are currently 39 MFIs operating in Ethiopia. Concentration in the MFI sector is high, with the five largest MFIs controlling 90 percent of the market share. Eleven of the MFIs are owned by regional governments. Ten commercial banks have equity participations, but these are not significant. MFIs are mainly funded from customer deposits which at the end of 2019 was about 40 Birr billion. The DBE also provides funding to MFIs through government schemes.

Below we give an overview of the credit facilities provided by the **Oromia Credit & Saving S.C. (OCSSCO)**, which is one of the largest & leading MFI in Ethiopia. OCSSCO has 339 branches operating mainly in the regional state of Oromia, Harar, Finfine (Addis Ababa) and Dire Dawa. OCSSCO offers diversified loan products. Solidarity group-based loan, micro and small enterprise (MSE) Loan, business loan, WDEP Loan, general purpose loan, business loan, housing loan and interest free finance are the major loan products of the company. The loan terms by type of product are provided below.

Product Type	Modality	Maximum Loan Size	Maximum Loan Term	Interest Rate	Service Charge	Collateral/ Guarantee
Rural Solidarity Group Based Loan	In group	15,000 ETB	1 yr.	17 %	3%	Group liability
Urban Solidarity Group Based Loan	In group	15,000 ETB	1 yr.	17 % Decline	3%	Group liability
Micro & Small Enterprise	As business entity/cooperative	Depends on business plan & collateral	Up to 5 yrs. depends on cash flow	13 % Decline	3%	House, Salary, land certificate, vehicle, institutional guarantee
Business Loan	As business entity/cooperative	Depends on business plan & collateral	Up to 3 yrs. depends on cash flow	17 % Decline	3%	Legal Urban House
WDEP Loan	As business entity/cooperative	Depends on business plan &	Up to 3 yrs. depends on cash	13 % Decline	3%	Legal Urban House

		collateral	flow			
Murabaha MSE Finance	As business entity/cooperative	Depends on business plan & collateral	Up to 5 yrs. depends on cash flow	Markup	NO	Group liability
Murabaha Individual Finance	As business entity/cooperative	Depends on business plan & collateral	Up to 3 yrs. depends on cash flow	Markup	NO	Legal Urban House
Murabaha Group Based Finance	In group	15,000 ETB	1 yr.	Markup	NO	Group liability

11.5 Rural Saving and Credit Cooperatives

Savings and Credit Cooperatives (SACCOs) are cooperative financial organizations owned and operated by and for its members. They are supervised by the Federal Cooperative Agency (FCA) as well as by their respective regional cooperative bureaus. There are two major types of SACCOs operating in Ethiopia. Institution based SACCOs provide deposit, credit, and micro-insurance services to members of a specific organization while community-based SACCOS provide these services to members of a small geographic area. All SACCOs lend only to their members.

In Ethiopia there are over 11000 Rural Saving and Credit Cooperatives (RuSACCOs) and their secondary structure (the Unions). These are at different stages of institutional maturity with a number of them still too small with insufficient business volumes.² However, given their geographic coverage, the RuSACCOs have the potential to provide loans for cooperative mini-grid projects.

11.6 Collection of funds from members

To finance part of the project costs, which may include ongoing O&M costs, a cooperative wanting to set up a mini-grid may collect funds or contributions from its members who would also benefit from the mini-grid electricity. Usually, such collective contribution is to the tune of 10 to 20% of the project cost and depends on the economic wealth within the community and their willingness and ability to pay for such contributions and the mini-grid electricity.

² IFAD (2019). The Federal Democratic Republic of Ethiopia, Rural Financial Intermediation Programme – Phase III (RUFIP III) Design report. Retrieved from:

<https://www.ifad.org/documents/38711624/40049138/Ethiopia%202000002344%20RUFIP-III%20Project%20Design%20Report%20August%202019/87e33d2e-64ce-3f04-fd29-a6edb1ba7f17>

12. EPC Agreement Template

INTRODUCTION TO THE ENGINEERING PROCUREMENT CONSTRUCTION AGREEMENT TEMPLATE

(adapted from UNIDO Clean Mini-grid Policy Development Guide, Source: [AFDB mini-grid Training and Templates | Green Mini Grids](#))

This Engineering Procurement Construction (“EPC”) Agreement template has been created for the purpose of providing cooperatives with a standardized document to accelerate their participation in the rural electrification effort.

This EPC Agreement template assumes that a single contractor would be responsible for the construction of the mini-grid. If the cooperative desires that the contractor thereafter also provide operations and maintenance services, this can be done through addition of an operations and maintenance article and definition of such service and terms of such service in the Annex.

To adjust the EPC Agreement Template to a specific context:

1. For each article please fill in the blank space according to the associated instruction (*as specified in brackets*).
2. Please fill in the Annexes with more specific content. Annexes are left intentionally blank to provide more flexibility.
3. Please add any additional article relevant to a specific context.

The terms and annexes may be further modified to suit the purposes of the parties.

ENGINEERING PROCUREMENT CONSTRUCTION AGREEMENT

DATED

(dd/mm/yy)

BETWEEN

Name of the Cooperative

Represented by

..... (name and designation)

- AND -

Name of the Company

Represented by

..... (name and designation)

TO SERVE

Name of the locality/localities

This Engineering Procurement Construction (EPC) Agreement dated (“*Agreement*”) is concluded between (“*Cooperative*”), represented by (“*Name and position*”), on the one hand, and the (“*Contractor*”), represented by (“*Name and position*”), on the other hand.

The Cooperative and the Contractor are individually referred to as “Party”, and collectively as “Parties”.

WHEREAS:

1. The Cooperative is desirous of engaging a private sector entity to undertake the design, engineering, construction, and operation (if applicable), of a Mini-Grid Facility (as defined below) to provide Services to underserved and unserved Users,
2. The Contractor is a company with experience in developing, constructing and operating (if applicable) Mini-Grids and is desirous and capable of developing and constructing a Mini-Grid Facility at the Site,
3. The Parties have therefore entered into this Agreement to set up the terms and conditions of their arrangement.

It is hereby agreed as follows:

ARTICLE 1 – DEFINITIONS

<p>“Applicable Laws”</p>	<p>means any and all statutes, legislations, directives, regulations, standards, guidelines, rules, codes, judgements or orders of a court of competent jurisdiction, proclamations, directives, executive orders, other legislative measures, binding actions or enactments by the Ethiopian Electricity Authority, or Ethiopian Cooperative Commission or any other relevant authority, for the time being in force, in Ethiopia;</p>
<p>“Assets”</p>	<p>means the Mini-Grid Facility(s) and installations, including all relevant documents (such as manual, permits, licenses and certifications) required to operate, manage and maintain the Mini-Grid Facility(s), as may be developed, constructed and installed by the Contractor under this Agreement and listed under Annex 2;</p>
<p>“Change Order”</p>	<p>means Change Order as defined under Article 15;</p>

“Effective Date”	means the date on which this Agreement comes into force as specified in and in accordance with Article 3;
“Commissioning”	means the readiness of the Mini-Grid Facility to commence commercial operation after performance testing;
“Commissioning Date”	means the date on which the Mini-Grid Facility achieved commercial operation after performance testing, as specified in Article 4;
“Final Completion”	means completion of all Unfinished Work after Commissioning has been achieved and certified by the Contractor;
“Force Majeure Event”	<p>means any unpredictable, unavoidable event beyond the control of the Parties, making it impossible to execute this Agreement in whole or in part, and which is not attributable to the fault or negligence of the Party claiming such Force Majeure, and which includes without limitation:</p> <ul style="list-style-type: none"> a. Any natural calamity, Act of God, adverse weather conditions, fire, earthquake, or any other unforeseen extreme weather; b. Any epidemic, plague or public health emergency; c. Acts of strikes, riots, rebellion, civil commotion, war or armed conflict in (<i>Specify name of place, state</i>) or any other part (<i>Specify name of state or country</i>); d. Any expropriation, nationalisation, confiscation of the Assets, or any boycott, penalty or restriction imposed upon the Cooperative or the Contractor;
“Good Industry Practice”	means those practices, skills, diligence, prudence, methods, equipment, specifications and standards of safety and performance expected from a skilled and experienced professional engaged in the same or similar undertaking under the same or similar circumstances and conditions, which in the exercise of reasonable judgement in the light of the facts known at the time the judgement was made, are considered good, safe and prudent practice commensurate with standards of safety, performance, dependability, efficiency and economy.

“Mini-grid”	means any system generating electricity connected to a distribution network that supplies electricity to a small, localised group of customers at the Site;
“Services”	means the supply of electrical energy from the Mini-Grid Facility to Users under the conditions set out in this Agreement;
“Site”	means the geographical area of land as defined in Annex 1;
“Specifications”	means the minimum requirements and standards for the design and construction of the Mini-Grid Facility(s) and provision of Services (if applicable), developed by the Contractor and approved by the Cooperative, and included in Annex 3;
“Unfinished Work”	means any remaining Work, for instance paint jobs or cosmetic additions, which do not affect the operation of the Mini-Grid Facility, left unfinished when Commissioning is achieved;
“Users”	means a member of the Cooperative who purchases, receives or uses the Services for its own needs and who does not deliver or resell these Services to any third parties;
“Work”	means all design, engineering, procurement, construction, erection, installation, training, start-up and testing activities and services necessary for a complete and operable Min-Grid Facility as per the terms of this Agreement, and includes all activities and services detailed in Article 4 and Annex 5;

ARTICLE 2 – PURPOSE OF THE AGREEMENT

1. The purpose of this Agreement relates to the design and construction, operation and maintenance (if applicable) of the (*technology*) Mini-Grid(s) with a total capacity of (*installed generation capacity*) kW in (*specify the localities, districts, regions*) (“Mini-Grid Facility”) by the Contractor, and the supply of electricity Services to Users in the aforementioned area (if applicable), over a period as defined in the present Agreement.

- 2. The Contractor shall perform on behalf of the Cooperative the duties to act as general contractor for the design, construction and testing of the Mini-Grid Facility, development of the operations manual(s), and operation (*if applicable*) of the Mini-Grid Facility upon the terms and conditions set forth in this Agreement.
- 3. Following completion of the Mini-Grid Facility, the Cooperative will own the Mini-Grid Facility, and the Contractor will, if applicable, operate and maintain the Mini-Grid Facility pursuant to Article 26 of this Agreement.

ARTICLE 3 – EFFECTIVE DATE AND TERM

- 1. The Agreement shall enter into force on (“Effective Date”), and shall remain in force for a period of months/years (“Term”), and unless extended by the Parties in writing, will automatically terminate on (*specify date of expiry*) (“Expiry Date”).

ARTICLE 4 – SCOPE OF WORK

- 1. The Contractor shall provide or perform the Work or cause the Work to be provided or performed, in accordance with the terms of this Agreement. Without limitations, the Work shall include the following in accordance with the Work specified in Annex 5:
 - a. all design and engineering activities and construction and services necessary to conduct the Work and complete the Mini-Grid Facility in accordance with this Agreement (including system sizing, Site preparation, digging and grading and proper disposal of all dug materials if and as required in connection with performance of the Work);
 - b. all design and engineering activities and services necessary to obtain all required permits for the construction of the Mini-Grid Facility;
 - c. all materials necessary to conduct the Work (including all necessary transport thereof);
 - d. all work forces necessary to conduct the Work (including all skilled and unskilled labour, supervisory, quality assurance and support service personnel), although unskilled labour may also be provided by members of the Cooperative;
 - e. all documents required to direct the Cooperative’s personnel in the proper start-up, operation and maintenance of the Min-Grid Facility, including, without limitation, the operations manual and all as-built drawings and as-built wiring diagrams in the (*specify the format*), or in the form and format agreed between the Parties;
 - f. all training adequate to allow the Cooperative to assume responsibility for operation and maintenance of the Mini-Grid Facility, if applicable;
 - g. all other activities, services and items, whether or not specifically described above, included in Annex 6 or elsewhere in this Agreement, if such performance, provision or procurement is necessary for a complete and operable Mini-Grid Facility, provided that the Contractor shall not be responsible for performing, providing or procuring those activities, services and items for which the Cooperative bears express responsibility pursuant to Article 11 and this Agreement;
 - h. all design, engineering, materials, work forces needed to perform the performance tests;
 - i. all activities necessary to enable the Contractor to achieve the agreed Commissioning Date of (*specify the date of for achieving commissioning*).

ARTICLE 5 – CONTRACTOR’S GENERAL RIGHTS

- 1. The Contractor shall have the right to:
 - a. receive payments upon successful completion of the Work specified in Annex 5;
 - b. terminate the Agreement in accordance with Article 23;
 - *(Add additional Contractor’s General Rights if necessary);*
- 2. Except as otherwise provided, the Contractor shall have the exclusive right to design and construct the Mini-Grid Facility throughout the term of this Agreement, starting from the Effective Date.

ARTICLE 6 – CONTRACTORS GENERAL OBLIGATIONS

1. General Obligations

The Contractor shall have the obligation to:

- a. act as general contractor for the Mini-Grid Facility and be solely responsible for sizing, designing, engineering, procurement and construction of the Work, including the general oversight and coordination of construction of the Mini-Grid Facility in accordance with the Specifications given in Annex 3, and environmental, health and safety guidelines as specified in the same Annex;
- b. undertake the Work, and design, procure and build the Mini-Grid Facility in compliance with the Specifications as specified in Annex 3;
- c. select any major equipment suppliers in consultation with the Cooperative based on cost, performance specifications, environmental impact, performance history, and demonstrated performance of their installed equipment, and facilitate negotiations of the Cooperative with the aforementioned major equipment suppliers, if any;
- d. ensure development of procedures for testing materials, the oversight of materials testing, inspecting field assembled equipment (such as quality control of welding procedures and welding testing), verifying quality of materials used in the manufacture of major equipment and verifying that all equipment and materials delivered to the Site meet the Specifications set out in Annex 3;
- e. send a quality assurance report to the Cooperative on a *(specify frequency for reporting)* basis;
- f. not create any lien on any equipment or materials used for the Work and forming part of the Assets;
- g. keep updated inventory and records of Assets;
- h. keep a safe and secure environment and comply with environmental standards and Applicable Laws, and adopt necessary measures and actions to prevent or eliminate environmental damages caused by the Contractor, as set out in Annex 3;
- i. maintain, at its own expense, such insurance as provided for in this Agreement;
- j. prepare reports and provide relevant information to the Cooperative as per the terms of this Agreement or at such intervals as may be specified by the Cooperative;
- k. dispose of any hazardous or waste materials in accordance with Applicable Law and Good Industry Practice;
- l. coordinate all tasks and responsibilities associated with performance testing and Commissioning of the Mini-Grid Facility;

- m. The Contractor shall not be responsible for any subsurface conditions of the Site which could not have been discovered upon a reasonable inspection of the Site, or for any conditions or matters not disclosed in any drawings or other information discussed with or provided by the Cooperative, which the Contractor reasonably relied upon.

ARTICLE 7 – DESIGN AND CONSTRUCTION

- 1. The Contractor shall present the Mini-Grid Facility design and construction plans to the Cooperative, and shall not undertake any proposed procurement or construction unless the Cooperative presents approves such design and construction plans.
- 2. The construction works shall be completed as per the timelines presented in the aforementioned plan and in accordance with the milestones specified in Annex 5.

ARTICLE 8 – RESPONSIBILITY AND INSURANCE

- 1. Starting from the Effective Date, the Contractor shall undertake the performance of the Work and this Agreement at its own risk.
- 2. The Contractor shall keep insured the Mini-Grid Facilities, Assets, Site, equipment and materials, for comprehensive general liability, property damage and hazards, at all times from the Effective Date up to the Final Completion from a reputed insurance provider up till the transfer of ownership of Mini-Grid Facility to the Cooperative.
- 3. In the event of Article 26 being applicable, the Contractor shall after the Final Completion maintain such insurances as specified in Annex 6 for the remaining duration of this Agreement.

ARTICLE 9 –REPORTING AND PERFORMANCE

- 1. Activity reports, including construction, commissioning and if applicable operations and management shall be prepared and submitted
(*frequency of the reports*) by the Contractor at its own expense to the Cooperative.
- 2. The Contractor shall maintain its books and records regarding all activities associated with the Agreement in accordance with Good Industry Practice and Applicable Laws, and shall permit the Cooperative or its representative for monitoring purposes to have access thereto at any reasonable time, except where information is deemed Confidential Information.
- 3. The Contractor shall keep a record of incidents under the conditions set forth in the Specifications set out in Annex 3, including any defective work.

ARTICLE 10 – COOPERATIVE GENERAL RIGHTS

- 1. The Cooperative shall have the right to:
 - a. collect reports and data related to the Work for the purposes of monitoring the activities under this Agreement;
 - b. monitor activities related to the Work, including safety and environmental practices;

- c. ensure Work carried out by the Contractor complies with the Specifications specified in Annex 3;
- d. upon reasonable prior notice to the Contractor, access the Contractor's books and records with respect to the costs and expenses of the Work, provided such inspection is carried out during normal business hours;
- e. upon reasonable prior notice and subject to adherence to safety procedures at the Site, access the Site to inspect the Work, provided such inspection is carried out during normal business hours;
- f. terminate this Agreement as per the terms herein specified;

ARTICLE 11 – COOPERATIVE GENERAL OBLIGATIONS

1. The Cooperative agrees to make every effort to help obtain the administrative documents necessary for the execution of this Agreement and perform the Work by the Contractor.
2. The Cooperative shall be obliged to:
 - a. hold, at its own expense, all permits and authorisations necessary to design and construct, and operate and maintain (if applicable) the Mini-Grid Facility, and provide the Contractor with the rights to undertake Work and provide operations and maintenance services, if applicable;
 - b. make payment for the Work as per the terms of this Agreement and additional payment terms specified in Annex 4;
 - c. provide necessary temporary construction easements and permanent easements for the Mini-Grid Facility and any necessary support facilities thereof;
 - d. promptly respond at all times, and make available appropriate representatives with decision-making authority, to any and all reasonable requests by the Contractor for meetings, review, comments regarding any relevant documents or material;
 - e. use such commercially reasonable efforts as required to support the Work and milestones;
 - f. ensure exclusivity rights of the Contractor at the Site for engineering and construction Work as per this Agreement for the Term of this Agreement;

ARTICLE 12 – SITE INSPECTION BY CONTRACTOR

The Contractor represents that the Contractor and Contractor's agents and representatives have visited, inspected and are familiar with the Site, its physical condition, roads, access rights, utilities, topographical conditions, except for unusual or unknown surface or subsurface conditions, or unusual or unknown soil conditions, and have performed all reasonable investigations necessary to determine that the Site is suitable for the construction and installation of the Mini-Grid Facility, and are familiar with the local and other conditions which may be material to the Contractor's performance of its obligations under this Agreement (including, but not limited to transportation, seasons and climate, access, the handling and storage of materials and fuel and availability and quality of labour and materials).

ARTICLE 13- PARTIES’ GENERAL WARRANTIES

- 1. Without prejudice to any warranties or conditions implied by Applicable Law, the Parties represent and warrant as of the date of this Agreement and throughout its Term that:
 - a. The Parties are duly organised and existing under the laws of Ethiopia and have full power and authority to perform their obligations and rights under this Agreement;
 - b. The Parties have the financial capacity to perform their obligations and execute their rights under this Agreement;
 - c. The Parties comply with Applicable Laws in all respect;
 - d. This Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
 - e. There are no actions, suits or legal proceedings pending or, to its knowledge, threatened against it at law or in equity before any court any authority, the outcome of which may result in the default or breach of this Agreement or may result in any impairment of its ability to perform its obligations under this Agreement;
 - f. That no sums, in cash or kind have been paid or will be paid by or on behalf of the Contractor to any person by way of fees, commission or otherwise for securing this Agreement or for influencing or attempting to influence any officer or employee of the Cooperative;
 - g. That the Parties shall comply with all their obligations set forth in this Agreement;
 - h. That the Parties shall not, except as permitted by this Agreement, assign or subcontract any interest, benefit, right or obligation under this Agreement to third party without the prior written consent of the other Party;
 - i. That the Parties shall at all times act in good faith in their dealings with each other under this Agreement and do all things reasonably within their power, which are necessary to give effect to this Agreement;

..... (Add any additional warranty that may apply);

..... (Add any additional warranty that may apply);

..... (Add any additional warranty that may apply);

ARTICLE 14 – MAXIMUM PRICE AND TERMS OF PAYMENT

- 1. The maximum amount the Cooperative is obligated to pay the Contractor for completion of the Work shall be (specify the fixed price) (“Maximum Price”). The breakdown of the components of the Maximum Price are detailed in Annex 5, along with the Work.
- 2. Notwithstanding Article 14 (1), unless expressly provided otherwise, the Cooperative shall be obligated to pay any costs in excess of the Maximum Price, upon the occurrence of the following:
 - a. Any increase in cost of the Work resulting from a Change Order requested by the Cooperative as set out in Article 15;

- b. Any increase in cost of the Work resulting from the Cooperative's failure to cooperate with the Contractor and carry out its responsibilities under this Agreement.
3. The Maximum Price shall be paid upon Final Completion.
4. Upon Final Completion the Contractor shall prepare an invoice, along with a final report of the Work, and submit the same to the Cooperative.
5. The Cooperative shall review the report and invoice and settle the invoice within a period of (*specify the number of the days*) from the receipt of the same.
6. Further payment terms as detailed in Annex 4 apply.

ARTICLE 15 – CHANGE ORDER

1. Either Party may request a change in the scope of Work before or after the construction has commenced ("Change Order"), which may result in a decrease or increase in the cost of Work, and which shall be reviewed by the other Party and be effective only once approved by the other Party.
2. Approved Change Orders shall be attached along with the Work under Annex 5, and shall form part of Annex 5.
3. Changes in cost arising from a Change Order arising from a request of the Cooperative, shall be borne by the Cooperative.
4. Changes in the cost arising from a Change Order requested by the Contractor and approved by the Cooperative shall be shared equally by the Parties.
5. Changes in the cost arising from a Change Order arising from any error or omission of the Party shall be borne by such Party.
6. No Change Order and change in cost of Work shall be effective unless approved in writing by both Parties.

ARTICLE 16 – OWNERSHIP OF MINI-GRID FACILITY AND RISK OF LOSS

1. Upon effecting final payment as per Article 14, ownership of the Mini-Grid Facility and associated risk shall transfer to the Cooperative.
2. Except where Article 26 applies, upon successful completion of the Work and this Agreement, and final payment in accordance with Article 14, the Contractor shall hand over the Mini-Grid Facility, the Assets, and all associated installations, equipment, materials, tools, software, designs, operations and maintenance manuals and guides, training material, to the Cooperative or to any such other entity as may be specified by the Cooperative.

ARTICLE 17 – INTELLECTUAL PROPERTY

1. The Contractor owns or has the legal right to use all the patents, rights to patents, trademarks, copyrights, and any other intellectual property necessary for the execution of the Work and this Agreement, and shall provide the usage rights to such intellectual

property to the Cooperative upon handover of Mini-Grid Facility and Assets as per Article 16.

2. Any intellectual property arising out of this Agreement shall vest in the Cooperative.

ARTICLE 18 – PERFORMANCE TESTING

1. Upon completion of the Work, except for minor items of the Work that would not affect the performance or operation of the Mini-Grid Facility such as painting, landscaping and so forth, such that the Mini-Grid Facility is ready to commence Commissioning, the Contractor shall send a status report along with a list of Unfinished Work to the Cooperative.
2. The Cooperative shall review and approve the status report and the Unfinished Work list, following which performance testing shall be initiated by the Contractor in the presence of a representative of the Cooperative.
3. The Contractor will provide the Cooperative with a Performance Testing Report, and certify that the Mini-Grid Facility is ready for Commissioning.

ARTICLE 19 – COMMISSIONING AND FINAL COMPLETION

1. Upon receipt of the certification that the Mini-Grid Facility is ready for Commissioning, it would be deemed that the Commissioning has been achieved.
2. The Contractor shall then undertake to complete any Unfinished Work, and after timely completion shall hand over the Mini-Grid Facility to the Cooperative.
3. The Cooperative shall after a physical inspection satisfy itself that Final Completion of the Work is achieved, and if satisfied the Cooperative shall be liable to render final payments as per Article 14 and Annex 4.

ARTICLE 20 – CONTRACTOR’S WARRANTY

1. The Contractor shall perform the Work, including its design and engineering services hereunder, and will procure all materials hereunder using its best skill and attention, in accordance with Good Industry Practice associated with engineering and procurement of facilities such as the Mini-Grid Facility, and further warrants that all materials and equipment procured and installed shall be new, unless otherwise agreed between the Parties, of good quality and in accordance with the Specifications in Annex 3.
2. Notwithstanding the aforementioned, the Contractor shall not be liable for deficiencies or defects arising as a result of Force Majeure, normal wear and tear, misuse or negligence by the Cooperative or any third party acting on the Cooperative’s behalf.
3. Any defect or deficiency in the design, engineering, materials, workmanship or operability in the Min-Grid Facility discovered during the applicable warranty period, and which does not meet the Specifications under Annex 3, shall be promptly corrected, replaced or repaired by the Contractor at its sole cost and expense.

4. Apart from the Guarantees and other remedies provided in this Agreement, the Contractor hereby disclaims any other warranties, or performance guarantees, including without limitation, warranties or merchantability, or fitness for a particular purpose.

ARTICLE 21 – CONTRACTOR’S DEFAULT

Any of the following events shall be considered “Contractor’s Default” under this Agreement:

- a. Breach by the Contractor of any of material provision of this Agreement, and failure to remedy such breach within a period of 30 days, or such other period as allowed by the Cooperative, from the date of receipt of notice of such breach by the Contractor from the Cooperative.
- b. Contractor becomes insolvent, or becomes the subject of any bankruptcy, insolvency or similar proceedings, which proceedings have not been dismissed within a period of 30 days or such other period allowed by the Cooperative, thus affecting the Contractor’s ability to perform this Agreement.
- c. Any material representation by the Contractor is found to have been false or misleading in any material respect.
- d. Failure to achieve Commissioning by Commissioning Date.

ARTICLE 22 – COOPERATIVE’S DEFAULT

Any of the following events shall be considered “Cooperative’s Default” under this Agreement:

- a. Breach by the Cooperative of any material provision of this Agreement, and failure to remedy such breach within a period of 30 days from the date of receipt of notice of such breach by the Cooperative from the Contractor.
- b. Failure to make payment as per the payment terms under Article 14 and Annex 4, beyond a period of 30 days from the date on which such payment falls due.
- c. Failure to obtain any necessary permits, licenses, approvals, under Applicable Law from relevant authorities, which affects the Contractor’s ability to perform this Agreement.
- d. Any material representation by the Cooperative is found to have been false or misleading in any material respect.
- e. Failure of the Cooperative to provide access to the Site to the Contractor, or any of its subcontractors or personnel, to carry out the Work.

ARTICLE 23 – TERMINATION

1. Termination on Expiry

- a. This Agreement shall terminate on the Expiry Date.

2. Mutual Termination

- a. This Agreement may be terminated by the Parties at any time by mutual agreement.

3. Termination for Default

- a. This Agreement may be terminated by the Cooperative upon Contractor's Default by serving 30 days written notice upon the Contractor, and the termination shall be effective from the end of the notice period.
- b. This Agreement may be terminated by the Contractor upon Cooperative's Default by serving 30 days written notice upon the Cooperative, and the termination shall be effective from the end of the notice period.

4. Termination for Force Majeure

- a. Either Party may terminate this Agreement in accordance with Article 24.

5. Effect of Termination

- a. In the event this Agreement is terminated pursuant to Articles 23(2), 23(3) and 23(4), the Contractor shall promptly submit to the Cooperative a statement of the Contractor's actual costs incurred for the Work performed prior to the date of termination along with an invoice, provided where the Agreement is terminated pursuant to Article 23(3)(a), the Contractor shall be liable to pay a liquidated damage of (*specify amount here*). The Cooperative shall pay any and all undisputed amounts for such invoice, subject to the Maximum Price, within a period of 30 days from receipt of invoice, minus any liquidated damages payable to the Cooperative. In the event the amount of liquidated damages exceeds the invoice amount, the Contractor shall be liable to pay the balance of liquidated damages to the Cooperative within a period of 30 days.
- b. In the event this Agreement is terminated pursuant to Article 23(3)(a), the Cooperative shall be entitled to contract or substitute a third party to this Agreement, to complete the Work and achieve Final Completion, and the Contractor shall be responsible to pay to the Cooperative any costs incurred by the Cooperative to achieve such Final Completion, which are in excess of the Maximum Price.
- c. In the event of termination pursuant to Articles 23(2), 23(3) and 23(4), the Contractor shall deliver any designs, drawings, documents, related to the Mini-Grid Facility, and all equipment, material, data, the ownership of which has passed to the Cooperative in accordance with the terms of this Agreement.

ARTICLE 24 – FORCE MAJEURE

- 1. Upon occurrence of a Force Majeure Event, the affected Party shall immediately give notice to the other Party of the circumstance, event or conditions, within a period of 5 days from the occurrence of such Force Majeure Event.
- 2. The affected Party shall make all reasonable efforts to reduce and mitigate the effects of the Force Majeure event on the provided Services and the performance of this Agreement, and the Parties shall together take all necessary measures to carry on their obligations under this Agreement, and limit the consequences of the Force Majeure Event.
- 3. Notwithstanding the aforementioned, in the event of inability to fulfil its obligations due to the Force Majeure Event, the affected Party shall not be liable for any delay or failure in performing its obligations due to a Force Majeure Event for the duration of such Force Majeure Event.

- 4. If the Force Majeure Event persists for a period of 90 days from the occurrence of such Force Majeure Event, either Party shall be entitled to terminate this Agreement by serving a written notice to the other Party, and such termination shall become effective 15 days from the receipt of the written notice by the other Party, provided, however, that the Force Majeure Event or its consequences persist.

ARTICLE 25 – DISPUTE RESOLUTION AND ARBITRATION

1. Amicable procedure

- a. In case of any dispute arising from the terms of this Agreement or its construction or interpretation, or disagreement on the fulfilment of any obligations, the Parties shall first undertake amicable discussions with the aim of amicable agreement to resolve any such disputes.
- b. All disputes arising between the Parties concerning the application or interpretation of this Agreement which are not settled by amicable agreement within 30 days from receipt by either Party of the request for amicable settlement by the other Party, shall entitle either Party to refer the dispute to an arbitration procedure.

2. Arbitration

- a. Any disputes which cannot be amicably resolved as per Article 25 (1), shall be finally settled by arbitration in accordance with the UNCITRAL rules of arbitration.
- b. The Parties shall nominate one arbitrator by mutual agreement. The place of arbitration shall be (*specify the city*), and the language of arbitration shall be (*specify the language*). Parties shall bear their own costs for the arbitration.
- c. The award under such arbitration shall be final and binding upon the Parties, save in the event of fraud or manifest error, and judgement thereon may be entered in any court having jurisdiction for its enforcement; and the Parties renounce any right or appeal from the decision of the arbitral tribunal insofar as such renunciation can validly be made.

ARTICLE 26 – OPERATIONS AND MAINTENANCE (OPTIONAL ARTICLE)

- 1. Upon achievement of Final Completion, the Contractor shall continue to provide operations and maintenance services for the Mini-Grid Facility or a period of (*specify the number of years*), in accordance with the parameters set out in Annex 6.
- 2. In the event this Article 26 applies, the Cooperative shall withhold % (*specify the percentage*) of the Maximum Payment, to be paid to the Contractor in (*include number of instalments*) instalments on a quarterly/annual basis (*select one*) for operation and maintenance services as per Annex 6.
- 3. Notwithstanding the aforementioned, the ownership of the Mini-Grid Facility and Assets would vest in the Cooperative from the time of acceptance and payment upon Final Completion, and upon termination of the operation and maintenance services and this Agreement, the Contractor shall hand any training, operations and maintenance guidelines

or manuals, to the Cooperative in accordance with the handover guidelines set out in Annex 6.

4. The terms of this Agreement shall apply mutatis mutandi to the provision of operation and maintenance services.

ARTICLE 27 – RELATIONSHIP OF PARTIES

1. Nothing in this Agreement shall be construed to create an association, trust, partnership, or other fiduciary relationship between the Parties or to impose any trust or partnership duty, obligation or liability between the Parties unless it is expressly agreed in writing by the Parties.
2. Neither Party shall by virtue of this Agreement be deemed to be the representative of the other Party for any purpose whatsoever, and neither Party shall have the power or authority as agent or in any other capacity to represent, act for, bind, or otherwise create or assume any obligation on behalf of the other Party for any purpose whatsoever unless it is expressly agreed in writing by the Parties.
3. Except as permitted under this Agreement nothing shall confer any benefit on any person or entity that is not a party to this Agreement.

ARTICLE 28 – INDEMNITIES

1. From and after the Effective Date and throughout the Term of this Agreement, both Parties shall indemnify and hold harmless the other Party against all obligations, losses, damages, costs, penalties, demands and expenses incurred by the other Party, including those in connection with the Mini-Grid Facility and Assets, or resulting from the death or personal injury to a third party or damage to property, arising as a result of a Party's breach, negligent act or omission.
2. The indemnity shall not apply to the extent that such claim, loss, damage, injury or death is attributable to the following:
 - a. A negligent act or omission or wilful misconduct by the other Party; or
 - b. Any breach of warranty, any misrepresentation by the other Party, or any failure to perform any of the terms, agreements, obligations to be performed by the other Party under this Agreement which adversely affects the activities referred to in Article 2;
 - c. Violation of any Applicable Laws by the other Party.
3. Notwithstanding anything contained in this Agreement, the liability of Parties shall not exceed % of the Maximum Price.

ARTICLE 29 – GOVERNING LAW

The Agreement shall be governed by, construed and enforced in accordance with the laws of Ethiopia.

ARTICLE 30 – WAIVER

1. In the event that one Party has not fulfilled its obligations as set out under this Agreement, the other Party may waive the performance of such obligations to the extent permitted under Applicable Laws.
2. No waiver shall be effective unless expressly provided for in writing and duly signed by each of the Parties hereto or authorized representatives, and no waiver shall be construed as a waiver of any other or subsequent default of obligations by either Party under this Agreement.

ARTICLE 31 – ENTIRE AGREEMENT

This Agreement, along with the attached Annexes, constitutes the entire agreement and understanding between the Parties. This Agreement cancels and replaces any previous understandings, agreements or arrangements, whether in writing or oral, between the Parties. No amendment or modification of this Agreement shall be valid and effective unless mutually agreed upon by both Parties in writing.

ARTICLE 32 – SURVIVAL AND SEVERABILITY

1. In the event of any contradiction between the articles of the present Agreement and its Annexes, the articles of the present Agreement shall prevail.
2. In the event that any provision of this Agreement is, or becomes, or is declared to be invalid, illegal or unenforceable by any Applicable Laws or court of competent jurisdiction, the Parties shall negotiate an adjustment of such provision reflecting the original intent, and the remaining provisions shall remain unaffected.

ARTICLE 33 – COUNTERPARTS

This Agreement shall be executed in two counterparts and each counterpart shall be considered one and the same Agreement, and each will be deemed an original.

(Add additional Article if necessary)

IN WITNESS WHEREOF, this Agreement has been executed in two counterparts by duly authorized representatives of the Parties hereto on the day, month and year first above written.

Signed for and on behalf of Cooperative

Date:
By:
Name:
Authorized signatory
Seal

Signed for and on behalf of the Contractor

Date:
By:
Name:
Authorized signatory
Seal

ANNEX 1 – SITE

(please add description and map of the Site)

ANNEX 2 – ASSETS

(please specify the list of Assets)

ANNEX 3 – SPECIFICATIONS

Technical Specifications

(please specify)

Construction Specifications

(please specify)

Equipment and Material Specification

(please specify)

Environment Health and Safety Standards

(please specify)

(Please add any additional specifications as required)

ANNEX 4 – ADDITIONAL PAYMENT TERMS

Additional Payment Terms

(please specify)

ANNEX 5 – WORK

(Please add detailed description of Work, and related milestones and respective payments, and specifics for performance testing)

ANNEX 6 – OPERATIONS AND MAINTENANCE

Scope of Service

(please specify the scope of service)

Service Level

(please specify the service level)

Standards for Performance of Service

(please specify performance standards and indicators)

Personnel Standards

(please specify personnel standards)

Environment and Safety Standards

(please specify environment and safety standards to be complied with)

Insurance

(please specify the insurance coverage to be maintained by the Contractor)

Permits and Compliance

(please specify the permits and licenses that Contractor should procure)

Records and Reports

(please specify reporting standards to ensure due monitoring of the facility)

Monitoring

(please specify how Cooperative would monitor the activities of the Contractor)

Payment and Terms of Payment for Service

(please specify the payment terms)

13. PPA Template

INTRODUCTION TO POWER PURCHASE AGREEMENT TEMPLATE

This Power Purchase Agreement (PPA) template has been created for the purpose of providing cooperatives with a standardized document to accelerate their participation in the rural electrification effort. The PPA allows for the supply, delivery and payment of power and associated energy from a mini-grid to a cooperative.

This PPA template assumes that a contractor would be responsible for the construction, operation and management of the mini-grid generation assets only, while the distribution assets will be owned and operated by the cooperative.

To adjust the PPA template to a specific context:

- For each article please fill in the blank space according to the associated instruction (*as specified in brackets*).
- Please fill in the Annexes with more specific content.
- Annexes are left intentionally blank to provide more flexibility.
- Please add any additional article relevant to a specific context.

POWER PURCHASE AGREEMENT

DATED

(dd/mm/yy)

BETWEEN

Name of the Cooperative

Represented by

..... (name and designation)

- AND -

Name of the Company

Represented by

..... (name and designation)

TO SERVE

Name of the locality/localities

This Power Purchase Agreement (PPA) dated (“*Agreement*”) is concluded between(*insert name of cooperative*) (“*Buyer*”), represented by (*Name and position*), on the one hand, and the (*insert name of mini-grid company*) (“*Seller*”), represented by (“*Name and position*”), on the other hand.

The Buyer and Seller are individually referred to as “*Party*”, and collectively as “*Parties*”.

WHEREAS:

1. The Seller has been licensed, or intends to apply for a licence, to construct, operate and maintain a mini-grid and associated interconnection facility as described in Annex B, and desires to sell power and energy generated by such energy to the Buyer;
2. The Buyer is desirous of purchasing the power generated by the Seller for its own use and for supply of electricity to Users using a distribution network which shall be constructed by the Seller and owned and operated by the Buyer.
3. The Seller and the Buyer desire to enter into an agreement for the supply and purchase of electricity capacity as per the terms and conditions of this Agreement.

DEFINITIONS

ARTICLE 1 – DEFINITIONS

“Applicable Law”	means any and all statutes, legislations, directives, regulations, standards, guidelines, rules, codes, judgements or orders of a court of competent jurisdiction, proclamations, directives, executive orders, other legislative measures, binding actions or enactments by the Ethiopian Electricity Authority, or Ethiopian Cooperative Commission or any other relevant authority, for the time being in force, in Ethiopia;
“Appendix A”	means standardized tariffs and escalators for purchase and sale of capacity and/or associated electrical energy applicable to this Agreement.
“Appendix B”	means description of the Seller's mini-grid Facility including interconnection facility.
“Appendix C”	means description of the Buyer's distribution network facility.
“Appendix D”	means interconnection requirements at Delivery Point.
“Buyer’s Entitlement”	means the Facility's electrical energy, not to exceed the maximum dependable load-carrying capacity of the Buyer’s distribution network, exclusive of energy required for Facility use, expressed in

	kilowatts, agreed herein to be committed herein by Seller for sale and delivery to the Buyer, as set forth in Appendix B.
“Commencement Date of Operation”	means the day on which the Seller commences deliveries of electrical energy to the Buyer, which should not be later than <i>(please specify the number of months within which supply of electricity must commence)</i> months from the date of this Agreement.
“Delivery Point”	means the point where the Buyer's distribution system connects with the power output of the Facility, and where the metering of power delivery takes place.
“Due Date”	means thirty (30) days after the last day of each month during the term of this Agreement
“Emergency”	means a condition or situation which is likely to result in disruption of service to the Buyer's customers, is likely to cause a major fault in the Buyer's distribution system, or is likely to endanger life or property.
“Event of Default”	means an event as defined in Article 5(2).
“Facility”	means Seller's generation system and interconnection facility, together with all protective and other associated or auxiliary equipment of the Seller, and rights to own or use land associated with the generation system, necessary to produce capacity and/or associated electrical energy pursuant to this Agreement.
“Force Majeure Event”	means any unpredictable, unavoidable event beyond the control of the Parties, making it impossible to execute this Agreement in whole or in part, and which is not attributable to the fault or negligence of the Party claiming such Force Majeure, and which includes without limitation: <ul style="list-style-type: none"> e. Any natural calamity, Act of God, adverse weather conditions, fire, earthquake, or any other unforeseen extreme weather; f. Any epidemic, plague or public health emergency; g. Acts of strikes, riots, rebellion, civil commotion, war or armed conflict in <i>(Specify name of place, state)</i> or any other part <i>(Specify name of state or country)</i>; h. Any expropriation, nationalisation, confiscation of the Assets, or any boycott, penalty or restriction imposed upon the Buyer or the Seller;
“Good Industry Practice”	means those practices, skills, diligence, prudence, methods, equipment, specifications and standards of safety and performance expected from a skilled and experienced professional engaged in the same or similar undertaking under the same or similar

	circumstances and conditions, which in the exercise of reasonable judgement in the light of the facts known at the time the judgement was made, are considered good, safe and prudent practice commensurate with standards of safety, performance, dependability, efficiency and economy.
“Good Practice”	Utility means those practices, methods and acts with regard to adequate materials, resources, supplies, fuel, personnel, maintenance, repairs, monitoring, testing, and operation in the utility industry at a particular time, in the exercise of reasonable judgment based on the facts known or that should have been known at the time of a decision, that would have been expected to accomplish the desired result in a manner consistent with the law, regulations, codes, equipment manufacturers’ recommendations, safety, law, environmental protection and economy.
“Scheduled Outage”	means an outage at the Facility which is scheduled in advance for the purpose of performing maintenance on the Facility.
“Unscheduled Outage”	means an outage at the Facility which is not a Scheduled Outage.
“User”	means any person who is a member of the Cooperative and who purchases, receives or uses the electricity supply services for its own needs and who does not deliver or resell electricity to any third parties.

ARTICLE 2 – PURPOSE OF THE AGREEMENT

4. The purpose of this Agreement relates to development of the mini-grid Facility and distribution network as described in Appendix B and C respectively, and sale of electricity generated by Seller’s Facility to the Buyer in (*specify the localities, districts, regions*) over a period as defined in the present Agreement.
5. The Buyer shall purchase the same as per tariffs defined under Appendix A and in accordance with the terms defined under Article 7.

ARTICLE 3 – CONSTRUCTION AND OWNERSHIP

1. Construction and Ownership
 - a. The Seller shall be responsible for the design, procurement, construction and installation of the Facility and the distribution network as described under Appendix B and C respectively within a period of (*please specify the number of months*) months from the execution of this Agreement.
 - b. The cost of development of the distribution network shall be borne by the cooperative.

- c. Upon successful commissioning of the Facility and the distribution network, the ownership of the distribution network shall be transferred by the Seller to the Buyer, and the Buyer shall pay the Seller an amount of Birr.....*(please specify the cost of the distribution network here)* for the development and construction of the distribution network.
 - d. For clarification, the Facility shall remain under the ownership and operation of the Seller, and the distribution system shall be owned and operated by the Buyer.
 - e. The Seller shall provide the Buyer with all documents required to direct the Buyer in operation and maintenance of the distribution network, including, without limitation, the operations manuals and training adequate to allow the Cooperative to assume responsibility for operation and maintenance of the distribution network, if applicable.
2. Seller's warranty for the distribution network
- a. The Buyer shall design, engineer and construct the distribution network, and will procure all materials for the same using its best skill and attention, in accordance with Good Industry Practice associated with engineering and procurement of facilities such as the mini-grid distribution network, and further warrants that all materials and equipment procured and installed shall be new, unless otherwise agreed between the Parties, of good quality and in accordance with the description of the Buyer's facility in Appendix C.
 - b. Notwithstanding the aforementioned, the Seller shall not be liable for deficiencies or defects arising as a result of Force Majeure, normal wear and tear, misuse or negligence by the Buyer or any third party acting on the Buyer's behalf.
 - c. Any defect or deficiency in the design, engineering, materials, workmanship or operability in the distribution network discovered during the applicable warranty period, and which does not meet the description in Appendix C, shall be promptly corrected, replaced or repaired by the Seller at its sole cost and expense.

ARTICLE 4 – DELIVERY, SALE, PURCHASE OF BUYER'S ENTITLEMENT

1. Sale and Purchase of Entitlement.

Upon the Commencement Date of Operation and thereafter the Seller agrees to deliver and sell the Buyer's Entitlement to the Buyer, and the Buyer agrees and covenants to accept the same into its distribution system, for the term of this Agreement as specified in Article 5 and at the price as specified in Article 7.

2. Operation of Facility.

The Seller agrees to operate the Facility to the maximum extent feasible consistent with the recommendations of equipment manufacturers, Good Utility Practice, and availability of solar radiation, wind or water flow or any other atmospheric condition necessary for renewable power generation.

3. Failure to Deliver

The Buyer shall not assert the Seller's liability for, and the Seller shall not be liable to the Buyer for, any

direct damages resulting from the Seller's inadvertent or accidental failure to deliver the Buyer's Entitlement, unless the Seller is grossly negligent or where without the Buyer's prior written approval the Seller deliberately reduces the Buyer's Entitlement for the purpose of selling or attempting to sell capacity and associated electrical energy to any third party.

4. Forecasts.

Prior to the Commencement Date of Operation and thereafter before each subsequent year for the duration of this Agreement, the Seller shall furnish to the Buyer a one (1) year forecast of its anticipated operations that includes the following: (1) anticipated monthly generation availability, and (2) Scheduled Outages for each year; provided, however, the Seller shall have no liability to the Buyer and shall be subject to no liability, reduced payment, or penalty in the event that the actual amount of capacity and associated electrical energy delivered to the Buyer, or the times of said delivery, differ from the amounts or times shown in said forecasts. Notwithstanding this provision, the Seller may not divert the Buyer's Entitlement without the prior written consent of the Buyer. The Seller shall revise its Scheduled Outages and notify the Buyer if such plans change.

5. Scheduled Outages.

The Seller shall attempt to coordinate any Scheduled Outage, subject to Good Utility Practice, with the Buyer's reasonable written request. The Seller shall notify the Buyer one month in advance of Scheduled Outages, including a non-binding estimate of expected length of each outage, and as soon as possible, of any Unscheduled Outages, including a non-binding estimate of expected length of each outage.

6. Distribution System Operation.

The Buyer shall operate and maintain its distribution system in accordance with Good Utility Practice so as to permit the delivery to the Buyer's system of the Buyer's Entitlement. The Buyer shall work with the Seller to balance load and support voltage on its distribution system so as to maximize the ability of the Buyer's distribution system to accept and purchase the Buyer's Entitlement.

7. Interruption of Acceptance and Purchase.

The Buyer shall not be obligated to purchase or take delivery of the Buyer's Entitlement if the Facility is not operated and maintained in a manner consistent with Good Utility Practice in accordance with Article 5 and Ethiopian Energy Authority's Mini-Grid Directive, or when Buyer's system experiences an Emergency, or whenever it is necessary to aid in the restoration of service on the Buyer's system.

8. Interruption of Delivery.

The Seller may interrupt, reduce or cease to deliver the Buyer's Entitlement only to the extent that the Seller reasonably determines that such interruption, reduction, or cessation is necessary in order to install equipment in, make repairs, replacements, investigations and inspections of, or perform maintenance on the Facility which directly affect the delivery of the Buyer's Entitlement or are a result of reduced solar radiation, wind, water flow or any other atmospheric condition necessary for renewable

power generation. The Seller shall, prior to initiating any interruption, reduction or refusal to deliver the Buyer's Entitlement, use its best efforts to provide the Buyer a minimum of twenty-four (24) hours advance notice, such notice to include an explanation of the cause of the interruption, and an estimate of the start and duration of the interruption.

9. Power Factor.

The Seller agrees to operate the Facility and to deliver the Buyer's Entitlement at the Delivery Point and at the voltage level and power factor specified in Appendix D. Unless otherwise requested by the Buyer, the Seller's Facility must be capable of operating at a power factor of 0.8 lagging, and the Seller shall operate the Facility at a power factor between 0.8 and 1.0 (*power factors may be adjusted based on technology being used*) at the point of delivery to the Buyer, subject to the response time of control equipment to transient conditions on the Buyer's system. If PV inverter technology allows, Parties may agree to operate the Facility at a leading Power Factor.

10. Synchronization.

The Seller shall notify the Buyer in writing at least 30 days prior to synchronisation or operating the Seller's generation system at the Facility, and coordinate such commencement of operation with the Buyer at this first time and at future times that it resynchronizes or begins again to operate after a cessation of operation.

11. Directives and Standards.

The Seller shall comply with all applicable directives and standards as approved by the Ethiopian Energy Authority in the construction of the Facility and the distribution network and in the operation of the Facility.

ARTICLE 5 – TERM AND TERMINATION

1. Term.

As of the date of signature, the Parties agree that this Agreement shall commence on the execution date and continue for the term of (please specify number of years) years measured from the Commencement Date of Operation, unless terminated earlier as per the terms herein contained. Notwithstanding the foregoing, the applicable provisions of this Agreement shall remain in effect after termination or expiry hereof to the extent necessary to provide for final billings, billing adjustments, payments, and effectuation of all rights hereunder.

2. Default.

A Party shall be deemed to be in default under this Agreement in case of any of the Events of Default, including:

- a. The Seller abandons the Facility for a continuous period of sixty (60) days, or does not achieve the Commencement Date of Operation, in which case the Seller shall be deemed to be the Party in default hereunder, unless such failure is attributable a Force Majeure event.
- b. Failure by either Party to perform its obligation under this Agreement and the appendices hereto, where such failure has not been rectified or cured within sixty (60) days from a written notice thereof to the non-performing Party, or such extended period as is reasonably required to effect such cure, provided such failure to perform is not caused by an action or inaction of the other Party.
- c. The failure of any Party to make an undisputed payment when due and where such non-payment continues for more than sixty (60) days.

3. Termination:

- a. Either Party may forthwith terminate this Agreement upon the occurrence of any of the following events by serving a written notice upon the other Party:
 - i. The adjudged bankruptcy, dissolution, or liquidation of either Party
 - ii. The compulsory expropriation, acquisition or nationalization of the material assets or equity of the Seller or Buyer or the Facility by the Government of Ethiopia.
- b. Upon the occurrence of an Event of Default, the non-defaulting Party may terminate this Agreement by giving a written notice to the other Party. Notwithstanding the aforementioned, the non-defaulting Party shall not be precluded from pursuing any other remedies provided for in this Agreement or under law.
- c. Either Party may also terminate this Agreement due to a Force Majeure event as per Article 8(4).

ARTICLE 6 – INTERCONNECTION, METERING AND OPERATION

1. Delivery Point Responsibility

The Seller shall make all arrangements at its own expense necessary to transmit and deliver the Buyer's Entitlement to the Buyer at the Delivery Point. The Buyer shall cooperate with the Seller in these arrangements.

2. Interconnection

The Seller at its sole expense shall design, purchase, construct, operate and maintain the interconnection facilities between the Facility and the Buyer's distribution system in accordance with applicable grid code and standards prescribed by Ethiopian Energy Authority and Applicable Law.

3. Interconnection Standards

The Mini-Grid Directive's equipment, transmission, and distribution requirements and standards as may be relevant, shall apply to the installation and to the operation of all of the Seller's Facility and to the interconnection.

4. Induction Generators

If the Seller's Facility includes an induction-type generator(s), the Seller shall provide individual power factor correction capacitors for each such generator. Such capacitors shall be switched on and off simultaneously with each of the associated induction-type generator(s) of the Facility. The kVAr rating of such capacitors shall be the highest standard value which will not exceed such generators' no-load kVAr requirement.

5. Metering

The Seller shall install at the Buyer's cost and the Buyer shall own and maintain the primary metering equipment employed for purposes of measurement and billing under this Agreement. Metering and telemetering equipment shall comply with relevant meter standards and guidelines, be capable of registering and recording the transfer of active and reactive power, kWh and kVArh, and capable of transmitting such data to such location(s) as may be specified by the Buyer. The metering equipment shall be sealable and have mass storage and recording capability. The Seller shall provide a suitable location for the metering and telemetering equipment if the Delivery Point is at the Facility.

6. Meter Reading

The Buyer shall read the meters at the end of each month. The Seller shall provide the Buyer access to the Facility at all reasonable times upon reasonable prior notice for the purpose of reading or inspecting meters, examining the operation of the Facility or other purposes reasonably related to performance under the terms of this Agreement. Such access shall not interfere with the Seller's normal business operations. All the Buyer's personnel shall follow all Facility safety and procedural rules while on the Facility premises.

7. Meter Accuracy

All metering equipment measuring the output of the Facility shall be tested at least annually, at the Buyer's expense, in accordance with Good Utility Practice. If, at any time, any metering equipment is found to be inaccurate by more than one-half of one percent (0.5%), the Seller shall cause such metering equipment to be made accurate or replaced as soon as possible at the Buyer's expense. Each Party shall be given reasonable advance notice of and have the right to be present at the breaking of the seals, testing, calibration and sealing of meters.

8. Meter Calibration

Testing and calibration of meters, and any verification of meter accuracy, shall be performed pursuant to relevant metering standards set out by the Ethiopian Energy Authority. Calibration shall occur before

use of the meters to first record the output of the Facility. All meters shall be caused to be sealed and locked after calibration.

9. Transfer of Title to Power

At the Delivery Point, capacity and associated electrical energy, and legal title to the same, shall be deemed to be transferred from the Seller and delivered to the possession of the Buyer. At such point, the Buyer shall be in exclusive control and possession of such capacity and associated electrical energy and shall be solely responsible for same. Such electrical energy transferred shall be by alternating current 3 phase, 50 Hz nominal frequency, at the voltage specified in Appendix B and D.

10. Operation

The Facility shall be operated by the Seller in a manner consistent with Good Utility Practice and proper safety.

ARTICLE 7 – BILLING AND PAYMENT

1. Billing

The Seller and Buyer shall together read the Facility meters remotely or on site on the final day of each month for determination of the capacity delivered to and accepted by the Buyer. The Seller shall record and supply the results of such meter readings (including time and date of the reading) in written form to the Buyer within fifteen (15) days following each such reading along with an invoice for electricity charges calculated based on the meter reading in accordance with Appendix A, and the Buyer shall confirm the reading and invoiced amount.

2. Payment

The Buyer shall pay the Seller any and all amounts due for the delivered Buyer's Entitlement that are not in good faith disputed by the Buyer, on or before the Due Date, pursuant to the rates and subject to the terms set forth in Appendix A, which governs the applicable rate, determined on a per kWh delivered quantity, for payment for all power delivered under this Agreement minus any fixed charges paid by the Buyer as per the optional clause below.

(Optional clause): Where the Buyer charges any of the Users a fixed charge for supply of electricity, *(enter percentage, recommended 50%)* % of such fixed charge shall be paid by the Buyer to the Seller on the Due Date *(this clause is subject to the agreement between parties and may be deleted or amended as per the requirements of the parties).*

3. Alternative Meter Data

To determine the amount of the Buyer's Entitlement delivered and accepted in any billing period, recordation of amounts, billing, and payment will be based on the first available of the following metering or estimation options, in descending order of applicability:

- a. The Facility meter measurement(s) when that meter for the period at issue satisfies the accuracy standards in Article 6(7) and (8); or
 - b. In case of a meter failure, the average monthly Facility capacity and associated electrical energy delivered and accepted during the previous six (6) billing periods prior to meter failure (or fewer months if the Facility is less than six months from the Commencement Date of Operation), as adjusted or normalized for outages or operating variations, shall be used to estimate energy delivered by the Facility for the billing period.
4. Set Off of Amounts Owed

Either Party may set off undisputed amounts owed by it to the other Party under this Agreement against undisputed amounts owed by the other Party to it under this Agreement.

ARTICLE 8 – FORCE MAJEURE

5. Upon occurrence of a Force Majeure Event, the affected Party shall immediately give notice to the other Party of the circumstance, event or conditions, within a period of 5 days from the occurrence of such Force Majeure Event.
6. The affected Party shall make all reasonable efforts to reduce and mitigate the effects of the Force Majeure event on the provided Services and the performance of this Agreement, and the Parties shall together take all necessary measures to carry on their obligations under this Agreement, and limit the consequences of the Force Majeure Event.
7. Notwithstanding the aforementioned, in the event of inability to fulfil its obligations due to the Force Majeure Event, the affected Party shall not be liable for any delay or failure in performing its obligations due to a Force Majeure Event for the duration of such Force Majeure Event.
8. If the Force Majeure Event persists for a period of 90 days from the occurrence of such Force Majeure Event, either Party shall be entitled to terminate this Agreement by serving a written notice to the other Party, and such termination shall become effective 15 days from the receipt of the written notice by the other Party, provided, however, that the Force Majeure Event or its consequences persist.

ARTICLE 9 – RELATIONSHIP

Nothing in this Agreement shall be construed as creating any relationship between the Parties other than that of independent contractors for the sale and purchase of capacity and/or associated electrical

energy generated at the Facility. There does not exist between the Parties any relationship of employment, agency, joint venture, partnership of any kind under this Agreement.

ARTICLE 10 – INDEMNIFICATION AND LIMITATION OF LIABILITY

3. From and after the Effective Date and throughout the Term of this Agreement, both Parties shall indemnify and hold harmless the other Party against all obligations, losses, damages, costs, penalties, demands and expenses incurred by the other Party, or resulting from the death or personal injury to a third party or damage to property, arising as a result of a Party's breach, negligent act or omission.
4. The indemnity shall not apply to the extent that such claim, loss, damage, injury or death is attributable to the following:
 - d. A negligent act or omission or wilful misconduct by the other Party; or
 - e. Any breach of warranty, any misrepresentation by the other Party, or any failure to perform any of the terms, agreements, obligations to be performed by the other Party under this Agreement which adversely affects the activities under this Agreement;
 - f. Violation of any Applicable Laws by the other Party.
5. Insurance. The Seller shall insure the Facility for comprehensive general liability and property damage, and "all-risk" peril, from a recognized insurance provider lawfully permitted to provide insurance in Ethiopia, with primary limits of liability at all times during the duration of the Agreement equal to not less than the depreciated value of the Facility.

ARTICLE 10 – DISPUTE RESOLUTION AND ARBITRATION

3. Amicable procedure
 - g. In case of any dispute arising from the terms of this Agreement or its construction or interpretation, or disagreement on the fulfilment of any obligations, the Parties shall first undertake amicable discussions with the aim of amicable agreement to resolve any such disputes.
 - h. All disputes arising between the Parties concerning the application or interpretation of this Agreement which are not settled by amicable agreement within 30 days from receipt by either Party of the request for amicable settlement by the other Party, shall entitle either Party to refer the dispute to an arbitration procedure.
4. Arbitration
 - d. Any disputes which cannot be amicably resolved as per Article 10 (1), shall be finally settled by arbitration in accordance with the UNCITRAL rules of arbitration.

- e. The Parties shall nominate one arbitrator by mutual agreement. The place of arbitration shall be (specify the city), and the language of arbitration shall be (specify the language). Parties shall bear their own costs for the arbitration.
- f. The award under such arbitration shall be final and binding upon the Parties, save in the event of fraud or manifest error, and judgement thereon may be entered in any court having jurisdiction for its enforcement; and the Parties renounce any right or appeal from the decision of the arbitral tribunal insofar as such renunciation can validly be made.

ARTICLE 11 – ASSIGNMENT

- 1. This Agreement shall inure to the benefit of and bind the respective successors, assigns, and delegates of the Parties. No assignment or delegation by the Seller of any of its rights, duties, or obligations hereunder shall be made or become effective without the prior written consent of the Buyer, which consent shall not be unreasonably withheld by the Buyer or its successors in interest. Notwithstanding the aforementioned, the Seller may without the consent of the Buyer:
 - a. assign and/or delegate some or all of its rights and duties to an affiliate whose principal functions are to hold the ownership interest in or to operate the Facility, or
 - b. assign and/or delegate some or all of its rights and duties to its Lenders for purposes of financing, obtaining equipment, for the Facility.
- 2. A Party shall notify promptly the other Party in writing of any assignment or delegation that it makes.

ARTICLE 12- PARTIES’ GENERAL WARRANTIES

- 1. Without prejudice to any warranties or conditions implied by Applicable Law, the Parties represent and warrant as of the date of this Agreement and throughout its Term that:
 - i. The Parties are duly organised and existing under the laws of Ethiopia and have full power and authority to perform their obligations and rights under this Agreement;
 - j. The Parties have the financial capacity to perform their obligations and execute their rights under this Agreement;
 - k. The Parties comply with Applicable Laws in all respect;
 - l. This Agreement constitutes a legal, valid and binding obligation enforceable against it in accordance with the terms hereof;
 - m. There are no actions, suits or legal proceedings pending or, to its knowledge, threatened against it at law or in equity before any court any authority, the outcome of which may result in the default or breach of this Agreement or may result in any impairment of its ability to perform its obligations under this Agreement;
 - n. That no sums, in cash or kind have been paid or will be paid by or on behalf of the Seller to any person by way of fees, commission or otherwise for securing this Agreement or for influencing or attempting to influence any officer or employee of the Buyer;

- o. That the Parties shall comply with all their obligations set forth in this Agreement;
- p. That the Parties shall not, except as permitted by this Agreement, assign or subcontract any interest, benefit, right or obligation under this Agreement to third party without the prior written consent of the other Party;
- q. That the Parties shall at all times act in good faith in their dealings with each other under this Agreement and do all things reasonably within their power, which are necessary to give effect to this Agreement;

ARTICLE 13 – MISCELLANEOUS

1. Modification

This Agreement may not be modified or amended except in writing signed on behalf of both Parties by their duly authorized officers.

2. Entire and Complete Agreement

This Agreement constitutes the entire and complete final Agreement between the Parties relating to the subject matter hereof, and all previous Agreements, discussions, communications and correspondences with respect to the subject matter hereof are superseded by the execution of this Agreement.

3. Choice of Law

The interpretation and performance of this Agreement shall be in accordance with the laws of Ethiopia.

4. Waivers

In the event that one Party has not fulfilled its obligations as set out under this Agreement, the other Party may waive the performance of such obligations to the extent permitted by Applicable Law. No waiver shall be effective unless expressly provided for in writing and duly signed by each of the Parties hereto or authorized representatives, and no waiver shall be construed as a waiver of any other or subsequent default of obligations by either Party under this Agreement.

5. Severability

If any clause of this Agreement is ruled invalid or unenforceable by a court of competent jurisdiction, it shall not affect the remainder of the Agreement if it can be construed to affect its essential purpose without the invalid clause.

6. Confidentiality

Each Party shall keep confidential and shall not disclose to any third party any information provided by the other Party in connection with the negotiation or performance of this Agreement, without the prior consent of the other Party, which may not be unreasonably withheld or delayed; provided that this restriction shall not apply:

- a. To any information which at the time of disclosure is in the public domain or thereafter become part of the public domain other than as a consequence of a breach by either Party of its obligations; or
- b. To disclosure of information as required by law or to any instrumentality of Government having

jurisdiction, or by lawful subpoena or other process; or

- c. Where reasonably necessary to affect the purpose of this Agreement or any other project agreement or financing agreements, including disclosure to a Party's professional advisors, prospective lenders or actual lenders; or

provided that in each case, the Party disclosing information should enter into binding confidentiality agreements with the recipients of information agreeing to be bound by the provisions of the confidentiality undertaking.

7. No Interpretation of Headings

The headings in this Agreement are descriptive only, and are not intended to affect the interpretation or meaning of the Agreement, and accordingly are not meant to be construed as part of obligations of any Party hereunder.

8. Notice

Any notice, invoice, or other communication which is required or permitted by this Agreement, except as otherwise provided herein, shall clearly specify that it relates to this Agreement, bearing the date of its creation, be in writing and delivered by personal service, electronic transmission with proof of receipt and reading, or telecopy, with a subsequent copy mailed postage prepaid, properly addressed, as follows:

- a. In the case of the Seller to:
 - Name:
 - Designation:
 - Address:
 - Email address:
- b. In the case of the Buyer to:
 - Name:
 - Designation:
 - Address:
 - Email address:
- c. Each notice, invoice or other communication which shall be mailed, delivered or transmitted in the manner described above shall be deemed sufficiently given and received for all purposes at such time as it is delivered to the addressee or at such time as delivery is refused by the addressee upon presentation.

9. Counterparts

This Agreement shall be executed in counterparts and each counterpart shall be considered one and the same Agreement, and each will be deemed an original.

IN WITNESS WHEREOF, this Agreement has been executed in two counterparts by duly authorized representatives of the Parties hereto on the day, month and year first above written.

Signed for and on behalf of Buyer

Date:

By:

Name:

Authorized signatory

Seal

Signed for and on behalf of Seller

Date:

By:

Name:

Authorized signatory

Seal

APPENDIX A: TARIFFS FOR DELIVERY OF THE BUYER'S ENTITLEMENT

APPENDIX B: DESCRIPTION OF SELLER'S FACILITY

Name and location of Facility:

Exact Delivery Point (feeder, pole or switch number):

Location of metering (meter number):

Nominal connection voltage:

Range of voltage regulation: Online; Offline

Type of fuel:

Type of power generation technology:

Nameplate capacity rating: kW

Dependable capacity to sell: MIN [_____] kW; MAX [_____] kW

Capacity consumed by Seller: MIN [_____] kW; MAX [_____] kW

Capacity factor: [_____].

Expected annual production: [_____] kWh

Buyer's Entitlement (kWh or % of output): [_____]

Minimum run time: [_____] Hours; Minimum shut-down time [_____] Hours

Start-up time: [_____] Hours

Date of planned completed construction of Facility: [____]

Voltage delivered to the Buyer: [_____]: Volts

APPENDIX C: DESCRIPTION OF BUYER'S DISTRIBUTION NETWORK

1. The total length of the distribution network: [] km
2. Specification of cable cross-sections: [] mm, [] mm
3. Number of poles:
4. Number and type of connections to be established (to include information on single phase and three phase connections):
5. Number of ready boards (if applicable):
6. Number of pre-paid meters and meter specification:
7. Date of planned completed construction of distribution network:
8. Drawing of distribution network layout:

[This will be a single-line diagram of the distribution network]

APPENDIX D: INTERCONNECTION REQUIREMENTS

1. The relevant requirements stated in XXXX (*please specify applicable code or standards*) shall be applicable.
2. The delivery voltage at the Delivery Point shall be [_____kV \pm ____%]
3. Special Requirements and Conditions: [TO BE PROVIDED INDIVIDUALLY FOR EACH FACILITY DEPENDING ON PROJECT CHARACTERISTICS AND TECHNOLOGIES]
4. The operating Power Factor of the Facility at the Delivery Point (Point of Supply) shall be[_____].
5. Interconnection Arrangement
[This will be a single-line diagram of the Interconnection.]