



# Terms of Reference

**Technical Assistance to ensure the long-term sustainability  
of the clean energy mini-grid projects in Bambadinca and  
Bissorã in Guinea-Bissau**

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**PROMOTED BY**



## **Background**

The GEF Project (ID 5331) entitled “Promoting investments in small to medium scale renewable energy technologies in the electricity sector of Guinea-Bissau” is executed by the United Nations Industrial Development Organization (UNIDO) in close partnership with the Ministry National Resources and Energy of Guinea Bissau, the ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE) and the Small Island Sustainable Energy and Climate Resilience Organization (SIDS DOCK).

Through combined interventions in the areas of technology demonstration, policy advisory, knowledge management and capacity development, the project aims at the creation of an enabling environment for renewable energy investments. The project foresees the development and installation of a set of renewable energy projects with a total electric capacity of 2.5 MW. Besides other technologies, particular emphasis has been given to innovative medium-scale PV mini-grid hybrid systems for rural electrification and productive uses.

Guinea Bissau is a country with a population of less than 2 million and a high potential of solar mini-grids to improve energy access, given that the electricity access rate is as low as 27% in a national level. There are already various PV/hybrid mini-grids installed and operating, owned and operated by the government, community-based associations or the private sector, including the projects in Bambadinca and Bissorã communities.

The PV hybrid mini-grid in Bambadinca with an installed electric capacity of 312 kWp is operating since 2015. The project was implemented by TESE Sem Fronteiras in partnership with the Associação Comunitária de Desenvolvimento de Bambadinca (ACDB), with financial and technical support of the European Union (EU), UNIDO and Camões – Instituto da Cooperação e da Língua. The mini-grid is operated by ACDB/SCEB. The Bambadinca mini-grid is a significant project in the country and a reference in West Africa, since it was the PV hybrid mini-grid of this size. Furthermore, it has piloted the community-based business model with several lessons learnt from the five years of operation. However, recently the project has faced some challenges due to technical shortcomings and replacement needs, as well as related to its operational model and management. Moreover, due to capacity limitations, parts of the population has been left out.

The PV hybrid mini-grid in Bissorã has an installed electric generation capacity of 500 kWp. The project has received pre-feasibility support by UNIDO and was implemented by SABER-ABREC with funding from UEMOA. The power plant installation works have been finalised by the end of 2019 and the project awaits its commissioning (some customers are already supplied). The installation works regarding the distribution and metering infrastructure are still to be finalised. The recommended management and operational model still need to be implemented. There are existing studies that propose a business model and tariff scheme for the operation of the Bissorã mini-grid. There is still a need for funding to cover equipment costs (e.g. connections, metering).

## **1. Objectives and scope of work**

ECREEE is seeking support from a consultancy team to perform specific activities that will ensure the sustainability of both mini-grid projects.

### **Work Package 1:**

The Bambadinca mini-grid is facing technical issues that are reducing its output from renewable energy and jeopardising the sustainability of its business model due to increased expenditures on diesel to supply the back-up generator. Additionally, there are unserved customers in the community, which are up to now not connected due to various reasons:

WP 1 has the following scope:

- i. Conduct an assessment of the Bambadinca mini-grid through
  - a. Review of existing data and documentation
  - b. Interviews to relevant stakeholders and beneficiaries
  - c. On site visit to assess the status of all equipment, performance ratio and production values
- ii. Characterise unserved potential customers
  - a. Identify their energy needs
  - b. Ability to pay
  - c. Viability of connection to existing grid
- iii. Propose a feasible and cost-effective solution to improve the performance of the Bambadinca mini-grid, including investment needs to correct identified deficiencies and replace faulty equipment.
- iv. Propose a feasible and cost-effective solution to connect so far unserved customers through connection to the mini-grid or if not possible through stand-alone solutions; make suggestions how to integrate the customers into the current tariff scheme of Bambadinca;
- v. Develop the procurement documents and technical specifications for the purchase of equipment regarding the repair/replacement works and the connection of new customers;
- vi. Implement the required competitive procurement in line with the ECOWAS tender code, oversee the installation works of contractors and confirm the proper finalisation of the installation works;

### **Work Package 2:**

In Bissorã, despite being installed in 2019, the mini-grid has not yet been commissioned. The following activities are envisaged:

- i. Conduct a review of the process which led to the installation of the mini-grid and its status until today

- a. Interviews to relevant stakeholders and beneficiaries
- b. Review of existing data and documentation
- ii. Verify the current status of the mini-grid, including a technical assessment of all components, incl. distribution grid;
  - a. On site visit(s)
- iii. Identify problems and bottlenecks and propose a feasible and cost-effective solution, which will lead to the commissioning and operation of the plant within 2020;
- iv. Develop the procurement documents and technical specifications for the purchase of equipment related to the PV mini-grid and the distribution grid;
- v. Implement the required competitive procurement in line with the ECOWAS tender code, oversee the installation works of contractors and confirm the proper finalisation of the installation works (provide commissioning certificate to ECREEE);

## **2. Deliverables and time-line**

The assignment shall be implemented within 5 working months after the effectiveness of the contract. The following deliverables are expected for each work package:

### **WP 1:**

- Inception report (maximum 10 days after kick-off meeting) with general information on the project, updated methodology and timeline
- Draft templates for questionnaires to stakeholders/beneficiaries and collection of technical data
- Preliminary report including technical assessment of the Bambadinca mini-grid and characterisation of unserved potential customers
- Report with recommendations to improve the performance of the mini-grid, including draft investment plan and proposed ranking of measures by their potential impact on the overall performance of the plant
- Report with recommendations on how to address the current situation of unserved customers, including different proposals, their attached costs and proposed business plan, proposed plan for operation, maintenance and management
- Procurement plan and draft tender documents for the acquisition of equipment to improve the performance of the mini-grid and expand services to the unserved population
- Evaluation reports on the selection of equipment following the tenders
- Draft Final report and confirmation of the finalisation of work
- Final report incorporating comments by ECREEE and partners

### **WP 2:**

- Inception report (maximum 10 days after kick-off meeting) with general information on the project, updated methodology and timeline

- Draft templates for questionnaires to stakeholders/beneficiaries and collection of technical data
- Preliminary report with an overview of the project and identified gaps and bottlenecks
- Report with recommendations on how to proceed with the commissioning of the Bissorã mini-grid, including possible investment needs, if identified, in order for the plant to work at its full capacity.
- Procurement plan and draft tender documents for the acquisition of equipment;
- Evaluation reports on the selection of equipment following the tenders
- Draft Final report and confirmation of the finalisation of works
- Final report incorporating comments by ECREEE and other partners.

### **3. Reporting and coordination**

The selected consultancy team will directly report and will work closely with ECREEE staff in charge of the project. Constant communication and knowledge sharing is required. Project staff will facilitate to the expert the available contacts of both public and private sector parties. The team will be also supported by a local project coordinator in the Ministry of Natural Resources and Energy in Bissau.

### **4. Location of Technical Services and Missions**

The assignment is home-based with travels to Guinea-Bissau, with constant communication and knowledge exchange with ECREEE projects officers through Zoom and email. The employment of local expert(s) in Guinea-Bissau is a prerequisite.

### **5. Language of Work**

The day to day working language with the project team is English and/or Portuguese. Deliverables, if submitted in English to ECREEE, must have their final versions approved by ECREEE translated to Portuguese by the Consultancy team. The interaction with the national stakeholders will be done in Portuguese or Bissau-Guinean Creole.

### **6. Available Budget**

The available maximum budget for the implementation of the project is USD 160.000 (one hundred and sixty thousand US Dollars). All works must be finalised within this ceiling.

### **7. Qualification requirements and evaluation criteria**

MINIMUM ELIGIBILITY REQUIREMENTS		VALUE	SCORE
1	Immediate availability of the contractor; ability to implement the assignment despite the COVID-19 travel restrictions; the employment of local experts in Guinea-Bissau is a requirement;	Yes	qualify
		No	does not qualify
2	Registered consulting company or institution with at least seven (7) years of public and private consulting experience in the area of energy, including renewables and experience developing countries, preferably in West Africa;	Yes	qualify
		No	does not qualify
3	Completeness of the technical and separate financial offer (e.g. CVs, track-record, legal and financial documents, all-in price); Offers which do not include all taxes or fees will be excluded from the evaluation. Financial offer shall distinguish between fee rates for international and local experts (in line with the market in West Africa).	Yes	qualify
		No	does not qualify
4	Full proficiency in Portuguese; at least one team member (preferable the team leader is proficient in English);	Yes	qualify
		No	does not qualify
5	The team leader has an advanced degree on engineering and demonstrates at least 10 years of consulting experience in the area of renewable energy, incl. in West Africa; the project team demonstrates diverse academic expertise and work experience in the area of clean energy mini-grids;	convincing	qualify
		poor	does not qualify

Bidders compete for best and most cost-effective technical solutions for the mini-grids in Bambadinca and Bissorã with the highest impact. Generally, the costs for the consulting part shall be kept as low as possible. The best offer will be determined based on the following criteria:

- 20% - Qualifications and relevant academic background of the project team in renewable energy, incl. clean energy mini-grids.
- 30% - Quality of the technical offer, effectiveness of the proposed execution methodology and team set-up;
- 30% - Quantity and quality of the provided track-record and work experience of the project team regarding the development, installation, operation, maintenance and management of clean energy mini-grids (please provide examples of documents co-authored by team members).
- 20% - Relevant mini-grid work experience in Sub Sahara Africa. Work experience in Guinea Bissau is an asset.

## 8. Submission of proposals

Interested bidders shall submit the following documents:

- Technical proposal (including proposed approach and methodology, work and activity plan, detailed CVs of experts, copies of university degrees, certifications, licenses as well as proven track record of implemented assignments);
- Separate financial proposal in USD including all costs and taxes (includes a detailed work-time-expert-diagram indicating daily rates for individual team members); offers without all-in price will be rejected; Financial offers shall distinguish between consulting costs and costs for the hardware component (equipment);
- Certificate of incorporation of the company
- Last audited statement of the company

Proposals must be submitted online to the email [tender@ecreee.org](mailto:tender@ecreee.org), carrying the subject “Technical Assistance to ensure the long-term sustainability of the clean energy mini-grid projects in Bambadinca and Bissorã in Guinea-Bissau”.

For any questions and clarifications, interested bidders may submit their emails to Mr. Eder Semedo, through [esemedo@ecreee.org](mailto:esemedo@ecreee.org). For further information on the project sites, interested bidders may get in touch with the national project coordinator at the Ministry of Natural Resources and Energy, Mr. Julio António Raúl, [antoniobolo2005@gmail.com](mailto:antoniobolo2005@gmail.com). Bidders are invited to visit the project sites.

Documentation should be submitted in Word, Excel or PDF and should not be compressed in formats such as .zip or send through cloud platforms. If submitting email attachments with a total size larger than 5 MB, bidders are advised to split the attachments in different emails, making sure that the emails are rightfully marked as “Email 1”, “Email 2”, and so on.

All submitted documents must be clear and concise, which will facilitate the evaluation process.

## **9. Date for submission**

Interested bidders shall submit their offers by email until 17 July 2020.

## **10. Annexes**

1. Activities schedule & estimated person-days
2. Project Bambadinca:  
[https://www.unido.org/sites/default/files/2017-03/Minigrid\\_report\\_Jan2017.v19\\_FINAL29906\\_0.pdf](https://www.unido.org/sites/default/files/2017-03/Minigrid_report_Jan2017.v19_FINAL29906_0.pdf)
3. Baseline, tariff and operational management studies related to the project in Bissora