Ministério das Finanças
Unidade de Gestão de Projectos Especiais

UNIDADE DE GESTÃO DE PROJECTOS ESPECIAIS

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RENEWABLE ENERGY AND IMPROVED UTILITY PERFORMANCE PROJECT (REIUPP)

(P170236)

TERMS OF REFERENCE

CONSULTING SERVICES

Recruitment of a Technical Expert for the control and supervision of the works and supplies in the scope of the sub-component 1b: *Resilient and Efficient Electricity Services to Public Health Facilities* of the project

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1. Introduction

The Government of Cabo Verde (GoCV) has an ambitious plan to diversify its energy mix to provide clean, reliable and affordable electricity supply to its population, while mobilizing private sector investments as much as possible. There are, however, a number of challenges, including: the lack of scale of power generation facilities due to the small nature of the islands composing the archipelago; the need for grid extensions and reinforcement as well as storage capacity to integrate into the system the power generated from variable renewable energy facilities; the institutional barriers to scaling up distributed generation; the limited capacity of the GoCV to procure new renewable energy IPPs; and the poor financial standing and performance of the utility company ELECTRA, as off-taker of the future IPPs.

Concerning the energy sector as a whole, a National Program for Sustainable Energy (PNSE) was launched within the framework of the country's Strategic Plan for Sustainable Development (PEDS 2017-2021). The PNSE aims to support a secure, efficient, and sustainable energy sector, reducing the country's dependence on imported refined fossil fuels while ensuring universal access and energy security.

Cabo Verde is committed to the global agenda of combating climate change by ratifying the Paris Agreement and submitting its National Determined Contribution –NDC, with a long-term strategy towards an energy transition. The commitments in the NDC are echoed in their recently approved Power Sector Master Plan (2018-2040).

The Electricity Sector Master Plan 2018-2040, elects the following least-cost targets:

- Achieve 30% of electricity production from RE sources by 2025, per the mandatory commitment made by Cabo Verde at the Conference of the Parties of Paris (COP21);
- To exceed 50% of electricity production from renewable energy sources by 2030, up to the percentage of integration that minimizes the costs of electricity production;
- Maintain the focus on wind energy and start an ambitious program of solar energy development;
- Promote the development of a storage solutions (BESS and others);
- Maintain the focus on promoting energy efficiency (EE) and combating energy losses, as key vectors for reducing energy costs.

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To achieve its goals, the GoCV is negotiating with the World Bank a financing to implement the "**Renewable Energy and Improved Utility Performance Project (REIUPP)**".

The proposed project will support the GoCV's ambition to provide sustainable electricity services to its population by providing support for (i) variable renewable energy integration investments; (ii) distributed generation investments; (iii) transaction advisory services for the electricity sector reform; and (iv) project preparation and implementation support as well as technical assistance and capacity building for the development of the electricity sector. Four islands are being targeted for the power infrastructure investments: Santo Antão, São Nicolau, Maio, and Fogo.

The main development objectives of the Renewable Energy and Improved Utility Performance Project (REIUPP)financed by the World Bank are to increase renewable energy generation and improve the performance of the electricity utility in Cabo Verde by leveraging private finance. This project, whose cost is estimated at about US$ 16.5 million, is composed of three components: (i) Component 1: Renewable and Efficient Electricity Service; (ii) Component 2: Advisory Services for Electricity Sector Reform Implementation; and (iii) Component 3: Project Implementation Support and Technical Assistance.

The Government intends to apply part of the amount of said financing for the consulting service (Individual Technical Expert) for the control and supervision of the works and supplies in the scope of the Component 1 (sub- component 1b) of the project.

The project owner is the Ministry of Industry, Trade and Energy through the National Directorate of Industry, Trade and Energy (Energy Services) of (hereinafter DNICE). The DNICE will be responsible for all the technical aspects related to the Project.

Project management and activities will be coordinated and implemented by UGPE (Unidade de Gestão de Projetos Especiais) with full fiduciary responsibility. The UGPE, will be supported by a dedicated team, which itself will be supported by the services of a consulting service (Technical Expert) for the control and supervision of the works to be implemented during the project (Components 1- sub Component 1b).

The Project Implementation Unit (UGPE) will be equipped with the following staffs:

- ✓ Project coordinator
- ✓ Project manager

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- ✓ Engineer specialized in the field of Power, Substation/Transmission and Distribution
- ✓ Social and Environmental specialist
- ✓ Procurement specialist
- ✓ Administrative officer
- ✓ Financial officer
- ✓ Driver

2. Objective of the Assignment

The objective of this assignment is to recruit an individual Technical Expert to support DNICE and UGPE in the implementation, control and supervision of the works and supplies in the scope of the ***Component 1: Renewable and Efficient Electricity Service (Sub-component 1.b: Resilient and Efficient Electricity Services to Public Health Facilities)*** of the Renewable Energy and Improved Utility Performance Project, as described below:

Component 1: Renewable and Efficient Electricity Service

This component will support: (i) the construction of small-scale solar power plants, their connection to the grid as well as the installation of pilot energy storage facilities for variable renewable energy (VRE) integration; and (ii) the installation of rooftop solar PV systems and energy efficiency facilities on public health buildings. Based on the priority needs of the GoCV, the proposed project will support the following small-scale projects included in the first phase of the power sector Master Plan: 1.3 MW on Fogo; 1.2 MW on Santo Antão; 0.4 MW on Maio; and 0.4 MW on São Nicolau islands. Pilot battery storage facilities will also be installed to reduce demand and supply fluctuations, thereby supporting voltage and frequency regulation and VRE integration to the grid.

This component includes the following sub-component, which is the focus of that assignment:

Sub-component1.b: Resilient and Efficient Electricity Services to Public Health Facilities.

In response to the COVID-19 pandemic, the GoCV has developed a comprehensive national plan[1] to deploy vaccines that are being procured by the Ministry of Health

[1] Resolution No. 18/2021 of the council of ministers approving the National Plan for vaccination against COVID-19

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(MoH) through the COVID-19 Vaccine Global Access (COVAX), an initiative launched by the World Health Organization (WHO) to ensure vaccine access to the world's most vulnerable. According to the plan, the GoCV intends to vaccinate a total of 60 percent of the population by 2023 (20 percent in 2021, 20 percent in 2022, and 20 percent in 2023). The vaccination shots will be administered in the health centers and hospitals, among others.

The GoCV seeks to improve the quality of healthcare services, reduce the burden of energy on public health services (including the cold chain for vaccine deployment), and decrease the use of fossil fuels for the public healthcare sector. These objectives have become more urgent in the context of the COVID-19 pandemic, where the demands on the healthcare sector have increased dramatically. Investments in energy efficiency (EE) and distributed generation (DG), i.e. rooftop solar PV systems, can improve the quality of healthcare services by increasing resiliency in the event of grid outages, decreasing the use of fossil fuels, and reducing the electricity expenditures by health facilities.

The GoCV has a target of implementing at least 15 MW of Distributed Generation (DG) across all nine islands by 2030. With support from the World Bank under the Distributed Solar Energy Systems Project (P151979), the GoCV installed 300 kW of solar PV systems in six hospitals on the islands of Santiago - Praia [2], São Vicente, Fogo, Santo Antão and Sal. In addition, this project supported preparation and implementation updates to the regulatory framework to support scale-up of distributed generation (Decreto-lei n.º 54-2018), including regulation for net billing[2].

This sub-component will finance public investments in rooftop solar PV systems and energy efficiency on public health buildings, including public hospitals and health centers. Forty-one public health buildings have been identified across the 9 islands[3]; this will cover all the public health buildings that have not already benefited from rooftop PV investments under the World Bank's Distributed Solar Energy Systems project (P151979). These investments will support the achievement of multiple objectives of the government, including: (i) reduce the burden of electricity on the fiscal obligations of the public sector by reducing public building energy use and offsetting grid-supplied electricity with onsite generation from solar; (ii) reduce ELECTRA's arrears from public sector clients, who tend to be delayed in paying electricity bills; (iii) increase the

[2] Regulation for distributed generation allows or on-site consumption of the electricity from microgeneration generated by the building's rooftop system; excess electricity can be sold back to the grid a rate of 8.80 CVE/kWh (approx. USD 0.08/kWh)
[3] 19 buildings in Santiago; 8 in São Vicente; 4 in Santo Antão; 3 in Fogo; 2 in Sal, São Nicolau, Boa Vista and 1 in Maio and Brava.

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resilience of the public health sector by providing back-up power options in case of power outages due to natural or other disasters; and, (iv) greening of the cold chain for provision of health services to support the deployment of the COVID-19 vaccine and other routine vaccinations programs. The design of the PV systems will consider resilience measures identified in the Project's climate risk assessment. This sub-component is being designed and will be implemented in coordination with the Bank-financed project in Cabo Verde: COVID-19 Emergency Response Project (P173857) being implemented by the UGPE and the MoH. While public health buildings are being prioritized, other key public service buildings may also be considered if the budget allows, including buildings within the Ministry of Justice and the National Police Directorate.

This sub-component will also focus on narrowing a gender gap in Cabo Verde, namely the gap in women's employment within the energy sector. In particular, women's labor force participation in Cabo Verde was found to be almost 15 percentage points below the rate for men, with an even wider gap within the energy sector. Gender bias in skills development and skilled labor market as well as low enrolment in technical trainings were also identified, as described in the Gender Gap Analysis. The Project will therefore provide women with training programs and subsequent employment opportunities in rooftop PV system operation and maintenance (O&M) services. This activity will be implemented by UGPE and DNICE in collaboration with the Center for Renewable Energy and Industrial Maintenance (*Centro de Energias Renováveis e Manutenção Industrial*, CERMI), a public corporation dedicated to providing professional and technical trainings and certifications. CERMI also hosts an entrepreneurship business incubator that provides the technical and business trainings needed to support establishment of new solar PV O&M businesses.

UGPE and DNICE will be partnering with CERMI to perform the O&M services for the first year after installation. The businesses that are established as a result of CERMI's training and incubation program will be entrusted with the delivery of the O&M services during that first year[4]. CERMI will monitor and support these new businesses, ensuring quality control and guiding the entrepreneurs through operational and other challenges that may arise. CERMI will ensure enough female participation in their training programs to meet the Project's target of having at least 30 percent women employed for the provision of the O&M services.

[4] The number of companies required will be based on the optimal aggregation of PV system O&M services, according to the location of the PV systems across the archipelago.

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The other sub-components and the service provided by CERMI will be out of the scope of the services provided under this consultancy.

3. Description of the tasks of the Technical Expert

The individual Technical Expert selected under these ToR will be responsible for the control and supervision of the works and supplies in the scope of the sub- component 1b of the project (excluding the gender activities) and will support the Project Implementation Unit (UGPE) and DNICE in all the matters related to those sub-components.

The Technical Expert will execute at least the five tasks indicated below and detailed in the subsections:

1. Perform detailed Energy Audit and Elaborate a complete Energy Sustainability Plan (ESP) in all infrastructures under the scope of these services
2. Model and Design all DG (Distributed Generation) systems for each infrastructure
3. Assistance on Procurement of goods, services and works under sub-component 1b of the project
4. Control and Supervision of construction
5. Support the implementation of environmental, social and health and safety management instruments

The Technical Expert should consider that the services indicated in this section will be applicable to all the different contracts (either one or several) under the described component 1b (excluding the gender activities). The contractual configuration will be decided upon the development of the procurement strategy together with the Technical Expert. That means that the contracts might be performed by the same or different contractors depending on the lots/sites configuration that is finally adopted.

The detailed tasks of the Technical Expert to support the Client are described below.

3.1 Perform detailed Energy Audit and Elaborate a complete Energy Sustainability Plan (ESP) in all infrastructures under the scope of these services

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Perform detailed energy audit and Elaborate a complete Energy Sustainability Plan (ESP) in all related infrastructure under the scope of these services:

- Identify and characterize each building in terms of typology and diagnose the situation of the electrical installations of these buildings as well as the physical structure and construction aspects (orientation, materials used, etc) of these buildings;
- Identify the baseline energy consumption for each type of energy (electricity, gas, diesel etc.), demand pattern and main energy consumption points/equipment. Consider the correlations with weather related variables and other variables such as occupancy, use of buildings etc.
- Identify improvement opportunities in the audited buildings, carrying out feasibility calculations of energy efficiency measures;
- Propose measures to reduce energy consumption and consider the dependencies between the proposed measures;
- Prepare an investment plan for the identified measures, including costs and benefits;
- Elaborate a sustainability plan for the audited buildings;
- Identify and profile the behavior of the users of the audited institutions;
- Draw up an awareness plan for the user/occupants of the buildings, based on the profiled behavior;

Responsibilities and tasks

The Technical Expert will have the following responsibilities and tasks to assume and develop:

- Carry out a survey of the conservation status of all electrical and electromechanical installations:
    - Analyze the state of conservation of electrical boards, including the division and segregation of circuits and phase distribution;
    - Analyze the conservation status of all wiring;
    - Analyze the state of conservation of all command and power equipment;
    - Verify and existence of protective earth connection;
    - Prepare a report diagnosing the state of the buildings' electrical installations, proposing all necessary improvement measures, including a

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bill of quantities and associated costs;

- Conduct detailed energy audit of all related infrastructure/buildings:
  - Survey the consumption data of the last 12 months at least;
  - Identify and quantify the forms of energy used:
    - Characterize the demand and consumption profile of each type of energy and the main energy consuming equipment/purposes in the buildings. Develop the energy consumption baseline;
    - Define the energy consumption indicator for each building;
    - Quantify and analyze energy consumption by sector, product or equipment;
  - Survey and analyze existing systems
    - Building envelope. Diagnose u-values and insulation thicknesses. (walls, roof, floor, slabs, windows, etc.)
    - Lighting (internal and external)
    - HVAC (cooling, heating and ventilation)
    - Hot water production
    - Electrical loads
    - Meal preparation (buildings that have a canteen and other catering services)
    - Transportation systems (elevators)
    - Water pumping;
    - Elevators;
    - Other systems
- Propose and develop an Energy Sustainability Plan (ESP) for the actions/measures and investments to be undertaken for all the audited buildings;
    - Establish and quantify potential energy rationalization measures;
    - Analyze technically and economically the solutions found and recommend a plan for energy efficiency measures to be implemented. Taking into account the dependencies between the measures;
    - Estimated cost of investments and O&M costs for the measures

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described to be effective;
- Propose a Plan for measurement and verification (M&V) of the EEMs to determine the effectiveness of the project;
- Summary of the energy analysis;
- Energy used at present, target use and costs;
- Savings achieved by recommended measures and comparison with final target;
- Analysis of possible risks;

- Evaluate performance of energy generation, transformation and use systems, if appropriate to the specifics of the building;
- Specify an energy management plan that can suit for all infrastructure;
- Analyze and profile the behavior of the users of each building:
  - Develop an appropriate awareness plan for each institution based on the profiled behavior;

3.2 Model and Design all DG systems for each

The Technical Expert will:

- ✓ Model each solar DG system, applying the most suited and proved tools. All systems must be best optimized to limit the amount of the excess energy that can go to the grid;
- ✓ Draw all solar DG systems, electrical schematics, single line diagrams and configuration of each solar DG system;
- ✓ Prepare the Tender Documents including the Set of Technical Specifications for the acquisition, execution and installation for each solar DG system;

3.3 Assistance on Procurement of goods, services and works

The Technical Expert will support the Owner during the procurement process for selecting the construction contractor for each of the procurement packages to:

- ✓ Prepare the Technical Specifications for each DG System as input to the bidding documents;
- ✓ Prepare the bidding documents based on the World Bank Standard Procurement Documents;
- ✓ Define the environmental, social, health and safety (ESHS) requirements that

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must be included in the bidding documents, as a minimum as defined in the ESCP[5] ;

- ✓ Support launching of the calls for tenders related to the sub-component 1b
- ✓ Support in providing responses to requests for clarification that may come from the bidders;
- ✓ Evaluate tenders in coordination with DNICE and UGPE, including on the ESHS aspects and the capacity of the bidders to implement Electrical and Electronic Product Take Back for Recycling follows the national regulations on Waste Electrical and Electronic Equipment or alternatively the Directive 2012/19/EU on Waste Electrical and Electronic Equipment;
- ✓ Support preparation of reports of evaluation of tenders, based on the World Bank Standard Procurement Document;
- ✓ Support the Client in the negotiation of the contracts and prepare the minute of negotiations.

3.4 Control and Supervision of construction

The Technical Expert will carry out the control and supervision activities for each of the contracts that have been awarded under the previous task, including at a minimum:

- ✓ Review and approve studies, drawings and plans of construction works submitted by the Contractor, including but not limited to the civil, electrical, mechanical designs, site surveys and delimitation, site mobilization plan and schedule, and campsite design and organization
- ✓ Support the implementing organization in the matters of contract management;
- ✓ Review and approve the quality assurance program of the Contractor.
- ✓ Review and approve the Contractor's Management of Change (MoC) procedure.
- ✓ Verify the executed works quantities and quality, including any ESHS associated requirements, and certify the invoices of the companies;
- ✓ Prepare the schedule of building sites meetings and participate in the meeting.
- ✓ Prepare reports of building sites meetings, the work progress reports and reports of tests and acceptance;
- ✓ Monitor and coordinate the plans of different companies participating in the

[5] Environment and Social Commitment Plan

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execution of the project;

- ✓ Monitor the plan of construction work and of equipment delivery in accordance with contract;
- ✓ Review and confirm delivery of material and equipment to the sites;
- ✓ Control the building sites organization and verify the technical capacity of the companies considering the works execution program.
- ✓ Suggest, if necessary, the corrective measures to adjust to work plans;
- ✓ Verify and certify that the works are executed in accordance with the best industry practice or recommend adjustments when required.;
- ✓ Evaluate and approve the corrections suggested occasionally from the companies;
- ✓ Verify and certify that the material and equipment stored in the building sites are stored following environmental, and health and safety (EHS) best practices and maintained in good conditions;
- ✓ Verify and certify that the material and equipment stored in the building sites are stored following environmental, and health and safety (EHS) best practices and maintained in good conditions;
- ✓ Verify and certify that the Agreement on Electrical and Electronics Products Take Back for Recycling is operational and that it follows the national regulations on Waste Electrical and Electronic Equipment. If national regulations in this field does not exist, the Directive 2012/19/EU on Waste Electrical and Electronic Equipment should be followed;
- ✓ Recommend, if necessary, the replacement of non-compatible and/or damaged material and equipment.

Technical Controls

The Technical Expert will verify whether the calculations, assumptions, diagrams schemas and documents submitted to approval are in accordance with contracts and technical specifications. The control service includes the main tasks below:

- ✓ Inspection of equipment delivered before its utilization;
- ✓ Verification of trenches, slopes and foundations;
- ✓ Verification of temporary and permanent drainage;
- ✓ Verification of concretes and/or structures as well e.g. PV mounting racks as well as other structural designs and constructions;
- ✓ Verification of all sanitary installations used;
- ✓ Verification of installation of conduits and electric cables; and
- ✓ Verification of the patterns of equipment that will be utilized.

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Acceptance in factory and on site

Concerning about above mentioned issues, the Technical Expert shall:

- ✓ Verify the accordance of the equipment with the technical specifications;
- ✓ Verify and approve the tests and inspection program at the factory proposed by the companies / suppliers;
- ✓ Guarantee that the main material and equipment will receive the contractual tests.
- ✓ Verify the test certifications of the material and equipment;
- ✓ Participate, if necessary, in the testing of main equipment (Solar panels, inverters, appliances, cold chains and other key equipment);
- ✓ Monitor the equipment fabrication/importation process and inform the Client of any issue that could compromise its delivery within the contractual deadline.

Acceptance and tests

Upon finalization of installation works, the Technical Expert is responsible for the preparation of tests and for the acceptance, in cooperation with the managers of the owner site. The Technical Expert will establish for each contract and each building site the acceptance and testing procedure for installed equipment and executed works.

This procedure will define:

- ✓ The roles and responsibilities for each contracting party;
- ✓ The tests that will be executed;
- ✓ The acceptance and testing program in consultation with contractor;
- ✓ The security measures implemented.

During the acceptance of works, the Technical Expert will also have to:

- ✓ Coordinate the tests that will be executed by the companies, approve the procedures and the results of them;
- ✓ Ensure the quality and the methodology of the tests executed by the companies, as well as the presentation of tests reports;
- ✓ Approve the test reports prepared by the companies;
- ✓ Ensure the joint signing of acceptance minute and acceptance reports by the Engineering Consultant, Client and Company;
- ✓ Verify and approve the plans (as built) that will be provided by the companies

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and verify whether they are in accordance with the execution;

- ✓ Examine and confirm the accordance of operation manuals with the installed materials and executed works; and
- ✓ Collect all the documentations related to the acceptance and acceptance tests.

3.5 Verify compliance with the project's environmental and social safeguards requirements through field observation and completion of the Environmental and Social Checklist.

- ✓ **Provide** monthly reports on project's environmental, social, health and safety management[6]. **The digital form of the Environmental and Social Checklist will be provided by UGPE and it is the main component of the Social and Environmental report.**
- ✓ Cooperate with the UGPE Environmental and Social Specialist, on the revision and approval, of the Environmental and Social Management Plan including the Solid Waste Management Plan, the Contractor's Occupational Health and Safety Plan (OHSP)[7] , the emergency preparedness and response plan[8], workers' Code of Conduct and all other plans to comply with the Project Environmental and Social Commitment Plan (ESCP)[9], as required.
- ✓ If applicable, request, review, approve, and supervise the contractor's plan for preventing contamination by COVID-19, consistent with the WB ESF/Safeguards Interim Note: COVID-19 considerations in construction/civil works projects.
- ✓ Inform the UGPE of any cases of COVID-19 infection or any significant increase of workers infected with COVID-19.

4. Minutes of meetings and reports that will be provided by the technical expert

The Technical Expert has to organize 4 meetings for each active contract in the presence of the representatives of the project owner, to present to the UGPE and DNICE the confirmation of the work progress. The observations made in this occasion will be recorded in the daily construction journal and will be the subject of the report sent to the above-mentioned Unit within the agreed deadline.

[6] As required in the ESCP, action MR1
[7] As required in the ESCP, action 2.4.
[8] As required in the ESCP, action 2.5
[9] As required in the ESCP, action 1.2

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The meetings can be organized also by the explicit request of the UGPE. The Expert will have a monthly construction journal for each active contract in which will be recorded the objection from it as well as those from all other intervenient regarding the monitoring of the work.

A meeting report will be drawn up in three (1) printed copy and one (1) electronic version for the client, within a period not exceeding 5 days. The content of these report will be, at least:

- ✓ a brief presentation of the project;
- ✓ the administrative situation of the contracts of which the work and inspection are completed, record of service orders, litigation;
- ✓ the real and estimate timetable (comparison of works, task progress percentage);
- ✓ the material and human resources by the work implementing company and by the engineering consultant;
- ✓ a description of executed works, occurred accidents, corrective measures adopted, modifications for the project;
- ✓ comments on the laboratory test results (if applicable) and on the work quality, on provision of the mission for the inspection and surveillance of the works;
- ✓ some typical commented photography of executed works;
- ✓ finally, within two month following the general provisional acceptance of the works, the Delegation of the Project Owner (Mission for inspection and surveillance) will draw out, 3 copies for the client and 1 copies for the provider of funds, a general final report on the execution of contract of construction and inspection and surveillance services, incorporating mutatis mutandis the foreseen items for all reports deliverable.

5. Qualifications

Qualifications of the Expert

- The individual Technical Expert shall have at least 10 (ten) years of experience in implementing and supervision of similar works to the present project,

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particularly in energy audits, develop Energy Sustainability Plan or similar, design, supervision and implementing of study and projects on Solar Power Distributed Generation systems and application of energy efficiency measures. An experience in similar projects in similar countries or contexts will be a plus.

- Holder of university diploma of master degree in Electrical, Mechanical or Electro-Mechanical engineering;
- Knowledge and experience in supervision of constructions and structures for solar DG systems as well for applying energy efficiency measures in Buildings and Appliances;
- Knowledge and practical experience in evaluation and supervision of Health and Safety in construction works of infrastructure.
- Proven experience in preparation of Bidding Documents.
- The Technical Expert shall be fluent in Portuguese language. Fluency in English language will be a plus.

6. Equipment

The Technical Expert will provide by own means all necessary equipment resources for the appropriate accomplishment of its mission:

- ✓ Testing material, tools and devices;
- ✓ Computer and communication equipment;
- ✓ All other equipment considered necessary.

7. Estimated deadline of the activities

Estimated duration of the assignment is 24 months. (Except the warranty period).

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8. Responsibilities of the Technical Expert

Administrative Assistance

The project owner will assist the Technical Expert in its administrative tasks associated with working in Cabo Verde, if needed/applicable (visa, work permission, contacts with the Administration, etc.).

Documents to be provided

The project owner will provide to the engineering consultant the documents below:

- ✓ The detailed design (description) of the project:
- ✓ The detail list with all health buildings contemplated under this project;
- ✓ All legal framework regarding distributed generation, energy efficiency and energy audit;
- ✓ The standard bidding documents for procurement of World Bank (Guideline for evaluation);
- ✓ The rules of procedures for utilizing Consultants;
- ✓ The rules of procedures for procurement of good and work.

In addition, the technical expert will prepare a list of all documents provided by the Administration and those produced during the Mission. These documents in its keeping shall be returned to the project owner at the end of the Mission. They must be considered confidential and be used as such.

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9. Output/Deliverables

The Technical Expert shall delivery all the reports in one (1) printed version and one (1) digital version.

All report shall be submitted in Portuguese language, except for the Detailed Technical Specifications, Layouts and Functionalities for each PV (deliverables 3) and Technical specifications as input into PV Systems Bidding Documents + Energy Efficiency actions/measures (opportunities) Bidding Documents (Deliverable 6) that shall be submitted in English.

The final Report shall be submitted in Portuguese with an executive summary in English.

All deliverables are described below:

Deliverables	**Reports**	**Deadline (in months)** (after the contract signature)
Deliverable 0	Inception Report: The draft report shall be presented at the Inception Meeting (1.5 weeks after contract signature) and will include the scope of work and planned methodology reflecting the consultant's understanding of the assignment and the expected results, an analysis of the current situation, and a realistic execution work plan to present all the deliverables. The final report shall provide preliminary result from the desk review of available data and current status assessment and diagnostics after 1st on-site inception mission. The final report shall also capture all issues/agreements made during the inception meeting.	The draft inception report must be delivered untill 2 days before the inception meeting. The final inception report 3 weeks after the inception meeting.
Deliverable 1	Energy Audit Reports for each selected infrastructure	5 months after the contract

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		signature
Deliverable 2	Technical and Financial (financial related with energy consumption) Assessment for each infrastructure	7 months after the contract signature
Deliverable 3	Detailed Technical Specifications, Layouts and Functionalities for each PV Systems for selected infrastructure	8 months after the contract signature
Deliverable 4	Detailed Energy Sustainability Plan (ESP), including actions/measures and investments to be undertaken and other related output described on task 3.3 for each selected infrastructure	10 months after the contract signature
Deliverable 5	Technical-financial model and financial conditions and plan for each selected infrastructure	11 months after the contract signature
Deliverable 6	Technical specifications as input into PV Systems Bidding Documents + Energy Efficiency actions/measures (opportunities) Bidding Documents	12 months after the contract signature
Deliverable 7	Report assessing the progress of execution of works (DG + EE) for each active contracts	14.5 months after the contract signature
Deliverable 8	Report assessing the execution of works (DG + EE) for each active contracts	17 months after the contract signature
Deliverable 9	Report assessing the execution of works (DG + EE) for each active contracts	19 months after the contract signature
Deliverable 10	Pre-Final Report: Including the approval of all the works done that will allow provisional acceptance by the project owner	21 months after the contract signature
Deliverable 11	Final Report: Final version of the report (DG component + EE component) incorporating of all comments from main stakeholder including DGE, UGPE and beneficiaries.	22 months after the contract signature

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10.Contract Types

A Lump-Sum form of Contract shall be signed, payments of the Consultant remuneration are linked to approval of deliverables, and the payment of reimbursable expenses are made upon presentation of the receipt of the expenses occurred at the real cost.