



*Empowered lives.  
Resilient nations.*

**Terms of Reference for Consultancy Services to Undertake Feasibility Study for the Setting Up of a Testing Laboratory for solar PV modules and associated equipment at the Mauritius Standard Bureau under the “Removal of Barriers to Solar PV Power Generation in Mauritius, Rodrigues and the Outer Islands” project**

**TITLE:** International Consultant  
**SECTOR:** Renewable Energy  
**LOCATION:** Republic of Mauritius  
**DUTY STATION:** Mauritius Standards Bureau and home based  
**DURATION:** **35 working days** (2 field missions – 12 person days and 23 person days home-based)  
**STARTING DATE:** 1 October 2019  
**END DATE:** 31 December 2019

**A. Project title:**

**Removal of Barriers to Solar PV Power Generation in Mauritius, Rodrigues and the Outer Islands**

**B. Project Description:**

Through the assistance of the Global Environment Facility and the technical support of UNDP, the Government of Mauritius is implementing the “Removal of Barriers to Solar PV Power Generation in Mauritius, Rodrigues and the Outer Islands”. The objective of this project is to accelerate sustainable on-grid PV electricity generation in Mauritius through targeted technical interventions. The project will do this by introducing a conducive regulatory framework that will facilitate private sector participation in supplying the national grid with PV-generated electricity at market-determined prices and assist the Government in closing private sector funded PV investments. It is envisaged that this project will enable Mauritius to meet (and maybe even surpass) its target of 2% of electricity generation from on-grid PV by 2025, as established in its “Long Term Energy Strategy 2009-2025”.

**B.1 Setting Up of a Testing Laboratory for solar PV modules and associated equipment at the Mauritius Standards Bureau**

The Mauritius Standards Bureau (MSB) is a parastatal body operating under the aegis of the Ministry of Industry, Commerce and Consumer Protection. It was created in 1975 with the mandate to develop national standards and provide conformity assessment services. The Mauritius Standards Bureau provides technical support to private and public organizations in improving product and service quality, upgrading public safety, enhancing occupational health and safety, ensuring food safety and mitigating environmental impacts. It also offers premium certification, inspection and testing services through a

single window. The testing laboratories operate in the fields of Engineering and Chemical Technology. The Engineering Unit consists of four laboratories, namely, Mechanical Engineering and Non-Destructive Testing Lab, Civil Engineering Lab, and the Electrical and Electronic Engineering Lab. Currently the MSB does not provide for any testing services for Renewable Energy Technologies (RETs) even for mature RETs like solar water heaters

Currently, the Electrical & Electronic Engineering Laboratory of the MSB is equipped to carry out tests on electrical materials and products for various clients including Ministries, importers, power utilities and manufacturers. The laboratory is constantly upgrading its test facilities with the acquisition of new equipment to increase its scope of activities. However, the MSB does not provide for any testing services for Solar PV modules and its associated accessories. In this context, this laboratory is looking for an international consultant to assess the existing facilities and provide recommendation of any existing gaps with regard to personnel and infrastructure to ascertain third party conformity assessment and testing of solar PV modules and its associated accessories.

## **B. 2 Objective**

The main objectives of this assignment are to:

1. Carry out a gap analysis of the personnel and laboratories of the Engineering unit of the MSB, particularly the Electrical and Electronic Engineering Laboratory, to identify the needs of the local markets with regard to conformity assessment and testing of solar PV modules and its associated accessories;
2. Prepare a costed Implementation Plan for bridging the identified gaps in skills and infrastructure for testing of solar PV modules and its associated accessories at the MSB; and
3. Prepare a Road Map for accreditation of the relevant proposed tests.

## **C. Scope of Work**

The assignment would comprise the following activities: -

1. Assessment of the needs of the local market with regard to conformity assessment and testing of renewable energy technologies (with focus on solar PV and wind generation) and document international best practices;
2. Identification of tests and test methods as per the International Electrotechnical Commission (IEC), European Standards (EN) or other relevant standards which could be carried out at the MSB facility in line with the legislation on renewable energy technologies;
3. Provide advice and specify new equipment required for the testing of RE technologies as per IEC, EN or other relevant standards for tests identified as stipulated in the proposed RE Standards;
4. Assess the capacity of the MSB to conduct the required tests from an infrastructure perspective and develop floor layout for prescribed tests;
5. Identify human resources necessary and training needs for the staff of the laboratory in the field of testing of renewable energy technologies products (with focus on solar PV and wind generation). In case additional specialised workforce is required to undertake the testing

process, the consultant is expected to develop the job descriptions for the additional human resource required;

6. Prepare a costed Implementation and Testing Plan for bridging the identified gaps in skills and infrastructure identified above for testing of Renewable Energy Technologies at the MSB;
7. Prepare a Road Map for accreditation of the relevant proposed tests of the MSB.

### C.1 Workshops

For the purpose of the assignment, a one-day Dissemination Workshop shall be conducted by the Consultant at the end of the mission.

### D. Expected Outputs and Deliverables

The Consultant shall be remunerated in accordance with the following time schedule and deliverables. Report(s) will be submitted in draft (for comments) and then in final version. Submission of draft report(s) in English will be required within two weeks after mission in Mauritius. The consultant will have 1 week for amendments and submission of the final version of the reports.

SN	Activity	Tentative date	Fee (%)	Means of verification
1	Produce an approved assignment work plan.	4 Oct 19	10%	Approved Project Workplan
2	Report on international best practices on testing and certification of RETs (with focus on solar PV and wind generation) and identification of the testing needs for the local market.	18-Oct-19	15%	Approved Report
3	Report on key aspects of RETs with focus solar PV modules and associated equipment to be tested based on regulations developed by the MARENA Identify tests, test methods and associated equipment (detailed specifications) as per the International electrotechnical commission (IEC), European Standards (EN) or other relevant standards for the test parameters identified.	25-Oct-19	25%	Approved Report
4	Report on the current infrastructure and layout at the MSB and propose the appropriate floor layout (including process flow, phased and costed restructuring plan) for the recommended test methods.	15-Nov-19	25%	Approved Report
5	Report on identification of human resources and training requirements for the staff of MSB including a costed training and testing plan	15-Nov-19	10%	Approved Report

SN	Activity	Tentative date	Fee (%)	Means of verification
6	Prepare a Road Map to MSB for the accreditation of the recommended tests from recognised accreditation agencies.	30-Nov-19	10%	Approved Accreditation Road Map for testing of PV equipment
7	Conduct a dissemination workshop to present the detailed reports produced during the assignment	10-Dec-19	5%	Approved workshop report
<b>Total</b>			<b>100%</b>	

#### E. Reporting

All deliverables shall be in **English** and submitted in appropriate format, in MS Word and in PDF as per requirement of the Client to the following address:

Mr Satyajeet Ramchurn, Head of Environment Unit, UNDP Mauritius CO at [satyajeet.ramchurn@undp.org](mailto:satyajeet.ramchurn@undp.org)

The Head of Environment Unit will be responsible for further distribution. The deliverables should be of high quality in form and substance and with appropriate professional presentation. The consultant should fully comply with the requirements of UNDP in terms of content and presentation and respect UNDP GCF visibility guidelines, since unsatisfactory performance may result in termination of contract.

#### F. Duration of the Work

The International Consultant shall be required for 35 working days (2 field missions - 12-person days and 23 -person days home-based) over a period of 3 months as from 1 October 2019.

#### G. Duty Station

During the field-based part of the assignment, the consultant will be based at the Mauritius Standards Bureau, Villa Road, Moka.

#### H. Competencies

##### Corporate Competencies:

- Demonstrates commitment to UNDP's mission, vision and values;
- Displays cultural, gender, religion, race, nationality and age sensitivity and adaptability;
- Ability to work effectively with counterpart staff at all levels and with all groups involved in the project; and
- Highest standards of integrity, discretion and loyalty.

##### Functional Competencies:

- Shares knowledge and experience; and
- Actively works towards continuing personal learning, acts on learning plan and applies newly acquired skills.

##### Development and Operational Effectiveness

- Ability in undertaking feasibility studies for governmental related bodies;



- Ability to report analytical outputs in a clear, concise manner to a non-technical audience;
- Ability to maintain appropriate records / uphold quality assurance integrity;
- Strong drafting, presentation and reporting skills, excellent written communication skills;
- Ability to administer budgets; and
- IT competencies in Word, Excel, Power Point and internet.

#### **Leadership and Self-Management**

- Focuses on result for the client and responds positively to feedback; and
- A good personality with strong leadership skills.

### **I. Qualifications of the Successful Individual Contractor**

#### Education:

- Postgraduate degree (Masters) in Power/Electrical Engineering, or other related fields in combination with an appropriate first degree. PhD is an advantage.

#### Experience:

- More than 10 years' experience in the Renewable Energy sector (on grid or off-grid and with a focus of solar PV technology) including review of relevant standards associated with RE and related goods;
- At least 5 years of experience in undertaking the testing of RE technologies or managing organizations involved in testing of RE technologies;
- Experience in carrying out or having been directly involved in at least one assignment of a nature and complexity close to the present assignment would be an advantage;
- Experience in dealing with government owned or private utility companies;
- Experience in dealing with utilities (public or private) and in engaging stakeholders from diverse backgrounds;
- Be knowledgeable about conformity assessment activities as per IEC, EN or other relevant standards in the RE sector; and
- Experience in undertaking capacity needs assessment in institutions of similar nature to MSB or involved in the testing of RETs.

#### Language:

- Fluency in English (both written and verbal) is a must. Knowledge of French is an asset.

### **J. Scope of Price Proposal and Schedule of Payments**

The financial offer should be quoted as a lump sum amount, all-inclusive (professional fee, insurance, all travel costs, per diem, etc.). In general, UNDP should not accept travel costs exceeding those of an economy class ticket. Should the consultant wish to travel on a higher class he/she should do so using their own resources.

Payments will be effected based on deliverables as per above.

#### K. Recommended Presentation of Offer

The following documents are requested:

- a) Duly completed **Letter of Confirmation of Interest and Availability** using the template provided by UNDP;
- b) **Personal CV**, indicating all past experience from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (3) professional references;
- c) **Technical offer: Brief description** of why the individual considers him/herself as the most suitable for the assignment, and a **methodology** on how they will approach and complete the assignment;
- d) **Financial Proposal** that indicates the all-inclusive fixed total contract price, supported by a breakdown of costs, as per template provided by UNDP.

#### L. Criteria for Selection of the Best Offer

Individual consultants will be evaluated based on the following methodology:

##### Cumulative analysis

When using this weighted scoring method, the award of the contract should be made to the individual consultant whose offer has been evaluated and determined as:

- a) Responsive/compliant/acceptable technical proposal, and
- b) Having received the highest score out of a pre-determined set of weighted technical and financial criteria specific to the solicitation.

Technical evaluation criteria:

Criteria	Max. Point
Relevant education	15
Relevant technical experience in the area solar PV systems with particular focus on regulations and standards associated.	15
Experience in undertaking the testing of Solar PV modules and associated equipment	10
Experience in economic analysis with respect to RE sector	10
Experience in dealing with government owned or private utility companies	10
Experience in undertaking capacity needs assessment	10
Experience of working with international funding agencies	5
Language (English mandatory/French is a plus)	5
Suitability of technical approach	20
<b>TOTAL max.</b>	<b>100</b>

Candidates scoring a minimum of 70% of the maximum marks on the above criteria will be considered for the financial evaluation.

The financial offers will be evaluated giving the lowest price proposal 30 marks and marking the other more expensive proposals reverse proportionally to the cheapest offer.

The final scoring of short-listed candidates will take into account the technical score and the financial score:

Criteria	Weight	Max. Point
• Technical score	70%	70
• Financial score	30%	30

The candidate ranking highest shall be selected.

**M. Approval**

This TOR is approved by:

Signature



Satyajeet Ramchurn, Head of Environment Unit, UNDP

Date: 15 August 2019

