



TERMS OF REFERENCE INDIVIDUAL CONSULTANT (IC)

A. Post Details

Post Title:	National Consultant of Solar4Health
Agency/ Project Name:	Engagement Facility Timor-Leste
Period of Assignment/ Services:	10 working days (1 December 2020 to 31 January 2021)
Duty Station:	Dili, Timor-Leste

B. Background

UNDP has been supporting the government institutions on Solar for Health initiatives to increase access to quality health services through the installation of solar energy photovoltaic systems (PV), ensuring constant and cost-effective access to electricity, as well as mitigating the impact of climate change and advancing multiple Sustainable Development Goals.

Solar for Health will contribute significantly to the 2030 Agenda for Sustainable Development and the commitment to “leave no one behind” by reaching remote and under-served communities. This will particularly support the countries in their efforts to achieve SDGs 3, 7, 13 and 17: (good health and well-being; affordable and clean energy; climate action; and partnerships).

UNDP Solar4Health programme started in 2016 from which we managed to install solar PV systems to more than 1000 health facilities (hospitals, health centres, national and regional medical stores) around the world. The programme is providing access to quality health service to more than 18 million women and children, while reducing CO2 emission of the health sector and demonstrating cost efficiency.

This year, UNDP Timor-Leste has been requested by the central medical distribution store in Timor-Leste or SAMES (Serviço Autónomo de Medicamentos e Equipamentos de Saúde) to support with a feasibility assessment to install solar PV systems to the entire SAMES buildings.

C. Scope of Work

This consultancy work aims to provide pre-feasibility analysis to install solar PV energy systems in SAMES' buildings.

The work will cover the following areas:

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- In close coordination with the UNDP's Solar4Health team, the consultant will conduct a pre-feasibility analysis and assessment to determine the technical and financial feasibility for installation of the Solar panel solutions to generate power by Solar Photovoltaic (SPV) systems to supplement the current power requirements of the SAMES premises; this include cost and benefit analysis on life cycle of PV system; Energy savings, resulting GHG emission reduction;
- Conduct a physical site analysis to confirm proposed location(s) of the solar array(s) are suitable and that the advised available space is correct whether rooftop of other potential location. This analysis shall investigate and consider and record any shading on any proposed solar panel array locations and other environmental & surrounding factors;
- Propose the Optimal Solar panel solution specifying the Total Costs Investment, optimal sizing of the Solar PV Capacity, Energy Production Capacity, Renewable Fraction, Grid usage, Annual Monetary Savings, payback period, CO2 Emissions Saved, net electricity grid exchanges (if applicable), Annual Monetary Savings, and with factors to be considered as below:
 - 1) The availability of sunlight throughout the year and the area available on the rooftop to calculate the power that can be generated.
 - 2) Determination of how much rooftop to use for solar panels, including the availability of sunlight and the space available on the rooftop; the maximum power that can be generated for producing electric power.
 - 3) The orientation of the rooftop towards the sun, considering the exposure, the angle facing south for placing the roof panels that receive the maximum possible sunlight.
 - 4) Assessment if there are nearby high-rise buildings or other sources of shading not to hinder the exposure of the solar panels to sunlight.
 - 5) Access to roof for installation and Load bearing capacity of the roof and need arrange suitable structures based on the quality of roof.
 - 6) Minimum clearance of the structure from the roof level.
 - 7) Local regulations pertaining to solar PV.
 - 8) Provide detailed design calculations relating to the whole solar PV system. These calculations shall demonstrate array sizing methodology and calculations, battery bank sizing methodology and calculations, cable sizing calculations. All efficiency losses etc. of each sub system are to be included and evident in the calculations.
- Prepare technical specifications for major equipment to install and operate the solar PV systems for procurement and installation of solar rooftop PV system, including bill of quantities with costs estimates, including budgets, to install and operate the solar

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PV systems in the premises and maintenance of the system. Thus, the technical specification must include details as follows, but not limited to:

- 1) Solar Photovoltaic Modules & Qualification of the module frames.
 - 2) requirements for construction, testing and safety.
 - 3) Adequate protective devices against surges at the PV module.
 - 4) Tolerance rate of output power of any supplied module.
 - 5) Variation of the peak-power point voltage and the peak-power point current of any supplied module and/or any module string.
 - 6) Junction box for module, such as terminal connection, type, arrangement, lid, cable gland entry points, etc.
 - 7) I-V (current-voltage characteristic) curves at STC (Standard Test Conditions)
- The system designed must be based on the relevant International and Timor-Leste Solar standards including International Electro technical Commission (IEC) qualification test of the PV, including but not limited to ISO/TC 180/SC1 & ISO/TC 180/SC 4
 - Provide strategic Operation and Maintenance plan and cost for the same and also Manpower and skill requirement.
 - Provide

The consultant is expected to deliver the products through conducting technical assessment in SAMES buildings, interview of relevant SAMES staff including stakeholders when required, constant consultation with UNDP HIS team on technical matters.

The consultant will:

- Have a kick-off meeting with UNDP and SAMES team to discuss and agree on the objectives of the consultancy
- Collect and review existing documentation as required
- Conduct interviews with relevant stakeholders as required
- Conduct all field related work – survey of the site, data collection and analysis
- Submit a progress report on the work undertaken
- Submit the final pre-feasibility analysis report

D. Expected Outputs and deliverables

Deliverables/ Outputs	DUE DATE	PAYMENT STRUCTURE
1. Submission of a draft pre-feasibility analysis report	30 December 2020	50%
2. Submission of a final pre-feasibility analysis report	30 January 2021	50%



E. Institutional Arrangements

- 1. National Consultant** will act under the direct supervision of the UNDP Timor-Leste Resident Representative and in close consultation and collaboration with SAMES and UNDP HIS (Health Implementation Support) team

F. Duration of Assignment

The assignment is expected for a period of 10 working days between December 2020 to January 2021 in Dili, Timor-Leste. The consultant must also be available for regular meetings the CO management, programme unit, SAMES and other stakeholders.

G. Duty Station

Dili, Timor-Leste

H. Qualifications of the Successful Individual Contractor

1. Academic Qualifications:

Master's degree in Engineering or science stream. Desirable: Advance degree in Engineering/Physics, Master's in energy systems with special emphasis in solar energy or any engineering related field

2. Professional Experience:

- At least 5 years relevant experience in the field of renewable energy
- Work experiences in solar potential assessment studies in buildings
- Experience in the usage of computers and office software packages (MS Word, Excel, etc)

3. Language Requirements:

- Fluency in English with excellent written communication skills, and strong experience writing reports is required.

I. Scope of Price and Schedule of Payments

Lump Sum Amount

The financial proposal must be expressed in the form of a lump sum all-inclusive cost linked to deliverables specified in TOR Section C, supported by a breakdown of costs as per the template provided.

If an Offeror is employed by an organization/company/institution, and he/she expects his/her employer to charge a management fee in the process of releasing him/her to UNDP under

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Reimbursable Loan Agreement (RLA), the Offeror must indicate at this point, and ensure that all such costs are duly incorporated in the financial proposal submitted to UNDP.

Schedule of payments

Per deliverable/s upon submission of its completion deliverables report and accepted by UNDP, each deliverable as per the timeline mentioned in section D (expected outputs and deliverables

J. Recommended Presentation of Offer

Individual consultants interested in the assignment must submit the following documents to demonstrate their qualification:

- a) **Duly accomplished Letter of Confirmation of Interest and Availability** using the template provided by UNDP (the template to be downloaded from the procurement notice link).
- b) **Personal CV or P11**, indicating all past experiences from similar projects, as well as the contact details (email and telephone number) of the Candidate and at least three (2) professional references (to be downloaded from the procurement notice link).

Financial Proposal that indicates the all-inclusive fixed total contract price, supported by a breakdown of costs, as per template provided (the template to be downloaded from the procurement notice link).

K. Criteria for Selection of the Best Offer

The candidates will be evaluated based on the following methodology:

Cumulative analysis OR combined scoring method

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

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

* Technical Criteria weight; 70%.

* Financial Criteria weight; 30%

Only candidates obtaining a minimum of 49 points of the technical criteria will be considered for the Financial Evaluation.

Detail Criteria

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Technical Criteria	Max. Obtainable points	Weight %
Academic Qualifications:		
<ul style="list-style-type: none">Master's degree in Engineering or science stream. Desirable: Advance degree in Engineering/Physics, Master's in energy systems with special emphasis in solar energy or any engineering related field	20	20%
Professional Experience:		
<ul style="list-style-type: none">At least 5 years relevant experience in the field of renewable energy	15	15%
<ul style="list-style-type: none">Work experiences in solar potential assessment studies in buildings	15	15%
<ul style="list-style-type: none">Experience in the usage of computers and office software packages (MS Word, Excel, etc)	10	10%
Language Requirements:		
<ul style="list-style-type: none">Fluency in English with excellent written communication skills, and strong experience writing reports is required.	10	10%
Total technical score	70	70%
Financial: 30%	30	30%
Final Score	100	100%

L. Approval

This TOR is approved by:

Signature

Lazima Oula-Bhatta

Name and Designation

Lazima Oula-Bhatta, DRR

Date of Signing

26/11/2020

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