

## TERMS OF REFERENCE

<b>Title:</b>	<b>Consulting Engineer “Global Climate Change Alliance Plus Trinidad and Tobago “Support to the Implementation of Trinidad and Tobago’s Nationally Determined Contribution”</b>
<b>Duty Station:</b>	<b>Trinidad and Tobago</b>
<b>Type of Contract:</b>	<b>Local Individual Consultant - Framework Agreement</b>
<b>Languages Required:</b>	<b>English</b>
<b>Expected Duration:</b>	<b>Maximum of 12.5 days per month for 40 months up to a total of 500 days over a 40 month period</b>

### Project Background

As a Small Island Developing State (SIDS), T&T is particularly vulnerable to the projected impacts of climate change. This includes sea level rise, changing rainfall and storm patterns, loss of habitats, loss of property and livelihoods, and loss of agricultural land. The vulnerability is amplified by the limited ability to reap the benefits of economies of scale, and dependence on fossil fuel-based energy sources which contribute to carbon emissions. This can also have a severe impact on the stability of the economy.

Given these development challenges, the country is working towards greater energy efficiency and an optimized energy mix that includes a greater share of renewables. Part of the objective, besides reducing emissions, is to (i) advance sustainable development and (ii) decouple emissions and economic growth.

In support of these goals as laid out in Trinidad and Tobago’s Nationally Determined Contribution the EU, under the GCCA+ initiative, is funding the project **Global Climate Change Alliance Plus Trinidad and Tobago “Support to the Implementation of Trinidad and Tobago’s Nationally Determined Contribution”** UNDP is the implementation partner for this project which is being carried out in collaboration with the Ministry of Planning and Development and the Ministry of Energy and Energy Industries.

The project is designed to assist Trinidad and Tobago in (1) increasing the availability and use of energy from renewable sources; and (2) to increase the efficiency levels in the consumption of energy. These are expected to be achieved by (1) strengthening the capacity to produce electric energy through the installation and maintenance of solar energy systems in small scale community based infrastructure such as schools, health centres, etc (2) design of operational systems for the effective implementation of the new RE/EE–conductive policy, legislative and regulatory framework and (3) raising public awareness on energy efficiency, correct pricing of energy and on the benefits of using renewable energy. Together these are expected to provide for the reductions in GHG emissions, and hence contribute to the overall objective and its indicators directly.

## **Duties and Responsibilities**

The Consulting Engineer will support the effective and efficient implementation of technical/engineering aspects within the project under the overall guidance and supervision of the Project Manager as follows:

### **Planning and design**

- o Development and finalisation of site selection checklist
- o Conduct engineering site visits to assess and document site dimensions, electrical systems, PV array location, load data, and utility interconnection options for use in design of solar systems

### **Detailed site assessments to identify the final sites for implementation and produce a feasibility report for each shortlisted site.**

The feasibility report will:

- o Identify suitable solar technologies for the energy demand,
- o Develop solutions for each location which includes the size of the solution; carry out basic design, including attention to ensuring options are hazard resistant
- o Carry out cost benefit analysis solution,
- o Analyse possible issues during installation,
- o Analyse potential for improving demand side energy efficiency prior to solar installations, including environmental and social impact screening;
- o Develop recommendations for deployment and operations & maintenance,
- o Development of techno-commercial feasibility reports for each site
- o Create plans for solar energy system development, monitoring, and evaluation activities.

### **Implementation**

- o Develop design specifications for solar energy systems or components
- o Development of Request for Proposal (RfP) guidelines for procurement of equipment and services
- o Monitoring the implementation of the supply and works contracts (supply, installation, capacity building)
- o Provide support for producing standard operation procedures and quality or safety standards for solar installation work consistent with existing international standards
- o Assist with creating checklists for review or inspection of completed solar installation projects.
- o Assist with the design and implementation of capacity building/training programs for selected sites. This includes the provision of technical engineering advice to project beneficiaries, revision of technical reports and monitoring of technical activities carried out by responsible parties.

Specifically, the Consultant Engineer hired under this output will be responsible for providing technical support in planning, designing, and implementing the solar energy projects, including capacity building and training of communities in maintenance and disposal of the systems, materials and equipment installed. The procurement of equipment and materials (supply

contracts) and procurement of labour services for the installation (works contracts) will be carried out by UNDP in close collaboration with the Consultant Engineer.

### **Required skills and expertise**

#### **Competencies**

- Strong analytical skills, oral and written communication and team building skills.
- Commitment to UNDP's mission, vision and values.
- Sensitivity to cultural, gender, religion, race, nationality and age differences.
- Demonstrated ability to function in a team environment and to deal with complex multi-stakeholder environment.
- Ability to focus on impact and result for client and responds positively to critical feedback.
- Excellent time management and organizational skills with the ability to handle multiple tasks.
- Capacity to work under tight deadlines, manage stress and adapt to rapidly evolving situations.

#### **Education and Experience/Recruitment Qualifications**

- Bachelor's degree in an engineering field. Specialization in renewable energy would be an asset.
- Minimum five (5) years of work experience in the field of solar energy OR Specialization in Solar Energy Engineering combined with a minimum of ten (10) years of work experience in the engineering sector;
- Demonstrated knowledge of the key characteristics of implementing solar PV installations, including grid-connected, off-grid, and hybrid installations with and without battery storage;
- Experience in developing techno-commercial feasibility reports for solar energy projects;
- Experience in implementation of solar energy installations (engineering, procurement, and commissioning, solar plant audits, project management)
- Previous experience in implementing solar projects in the Caribbean would be an asset
- Previous experience in implementing community based solar projects would be an asset

#### **Duration**

The IC Contract will enter into effect upon signature by both parties, expected for one year of duration and can be extended up to 2 (two) additional periods of 1 (one) year each up to a maximum of 40 months upon certification of satisfactory performance.

#### **Supervision**

Consulting Engineer will be supervised by the Project Manager.

### **Frame work Agreement / Long term Agreement**

The overall objective of this Framework Agreement is to facilitate and expedite the process by which UNDP can engage the services of a Consulting Engineer once there are specific assignments over the 40 months;

- UNDP does not warrant that any quantity of services will be purchased during the term of the Framework Agreement, as this will depend on forthcoming needs;
- IC as a Framework agreement is non-exclusive (i.e. it does not prohibit UNDP from entering into another such framework agreement with another individuals or entities);
- The Framework Agreement will be for a fixed all-inclusive daily fee;
- Once the Framework Agreement is signed, if there is a specific assignment, the focal person(s) at UNDP would be the Project Manager, "Global Climate Change Alliance Plus Trinidad and Tobago "Support to the Implementation of Trinidad and Tobago's Nationally Determined Contribution" who would contact the consultant, by email, informing of specific deliverables and timeline;
- The consultant must advise within 48 hours whether s/he is available to deliver the requested service;
- Thereafter a Purchase Order will be raised. Financial commitments will only be established each time the services are requested within the scope of the Framework Agreement through the transmitted email and purchase order;
- The consultant will work in Trinidad and Tobago. Some mission travel from Trinidad to Tobago could be needed. The Project will be responsible for the cost of the mission as per UNDP's rules
- The consultant will report to, and be directly supervised by the Project Manager, Global Climate Change Alliance Plus Trinidad and Tobago "Support to the Implementation of Trinidad and Tobago's Nationally Determined Contribution" who would contact the consultant, by email, informing of specific deliverables and timeline;
- The Project Manager, Global Climate Change Alliance Plus Trinidad and Tobago "Support to the Implementation of Trinidad and Tobago's Nationally Determined Contribution" is based in Trinidad and Tobago
- The Consultant will be given access to relevant information necessary for execution of the tasks under this assignment;
- Given the global consultations to be undertaken during this assignment, the consultant is expected to be reasonably flexible with his/her availability for such consultations taking into consideration different time zones where applicable;
- The Consultant will be responsible for providing her/his own laptop and cell phone, UNDP will provide other services such as internet, scanner/printer, etc

- Payments will be made upon submission of a detailed time sheet and certification of payment form, and acceptance and confirmation by the Supervisor on days worked (with a "day" calculated as 8 hours of work) and outputs delivered. If the quality does not meet standards or requirements, the consultant will be asked to rewrite or revise (as necessary) the document before proceeding to payment.

## Fees

The consultant will receive payment based on his/her daily fees, for maximum of 12.5 days per month for 40 months but no more than 500 days for the 40 months under this assignment.

The candidate shall quote his/her services on a professional daily fee for services based on the deliverables identified below.

## Evaluation Criteria

Method: Highest total score of weighted interview and financial criteria. The price proposals of all shortlisted consultants<sup>1</sup>, who have attained a minimum 70% score at the Interview stage, will be compared. UNDP will award a contract to the individual who receives the highest score out of a predetermined weighted, Interview and Financial criteria as follows: 70% Interview criteria, 30% Financial criteria.

**Table 1**

Shortlisting Criteria		Maximum points*
1	Relevance of Education/ Degree- Engineering with specialization in renewable energy	20
2	Years of Relevant Experience- experience in solar energy projects and installation; experience with tendering processes	40
3	Knowledge of the region- as a resident engineer on at least one renewable energy project of comparable magnitude	35
4	Knowledge of electrical requirements for community-based installations	10
5	Proficiency in English and ability to write reports	10
<b>Total</b>		<b>115</b>

Once candidates have been shortlisted, i.e. they have attained a score of at least 70%, based on the requirements in the Terms of Reference, only then, would they be interviewed for the position.

<sup>1</sup> See **Table 1** for Shortlisting Criteria for progression to the Interview Stage.

At the interview stage, candidates must attain a score of 70% for their financial proposals to be evaluated.

*The final evaluation process is based on a 70:30 weighting, with 30 points being allocated to the financial component.*

The following formula (cumulative analysis) is used to determine the financial scoring:  $p = y (\mu/z)$ , Where:

p = points for the financial proposal being evaluated

y = maximum number of points for the financial proposal

$\mu$  = price of the lowest priced proposal

z = price of the proposal being evaluated

## **Deliverables**

- i. Development and finalisation of site selection checklist for solar panel installation locations
- ii. Verification site assessments of long listed sites based on site visits
- iii. Feasibility reports for each shortlisted site to allow for suitable installation and quality assurance monitoring of work to be carried out. The feasibility report will:
  - o Identify suitable solar technologies for the energy demand,
  - o Develop solutions for each location which includes the size of the solution; recommend basic design, including attention to ensuring options are hazard resistant
  - o Carry out cost benefit analysis of solution,
  - o Analyse possible issues during installation,
  - o Analyse potential for improving demand side energy efficiency prior to solar installations, including environmental and social impact screening;
  - o Develop recommendations for deployment and operations & maintenance,
  - o Development of techno-commercial feasibility reports for each site
  - o Create plan outlines for solar energy system development, monitoring, and evaluation activities
- iv. Input to the Request for Proposal (RFP) for the solar panel installation company as required. This includes guidelines for procurement of equipment and supplies, sourcing and provision of relevant details such as final solar site dimensions, electrical systems, PV array location, load data, and utility interconnection options required for accurate financial proposals.
- v. Participate in the Evaluation Panel tasked with Bid review and contractor recommendation, in accordance with UNDP regulations, policies, rules and procedures
- vi. Development of checklists for review or inspection of the solar panel installations based on feasibility reports
- vii. Monitor and evaluate performance of service provided by contractor. This includes periodic site visit reports on implementation of supply and works contract for solar panel installation
- viii. Development and finalisation of standard operating procedures and quality or safety standards for solar installation work consistent with existing international standards
- ix. Design and implement capacity building/training programs for selected sites. This includes the provision of technical engineering advice to project beneficiaries

- x. Conduct a final inspection and adjust final accounts as necessary including final payments to the Contractor and release of retention monies, if applicable.
- xi. Perform other tasks related to the project implementation as may be requested by the Project Manager.