**Terms of Reference:**

**Solarization of Water Treatment Plant in Teknaf, Cox's Bazar**

**Background:** The Rohingya refugee camps in Teknaf, Cox's Bazar, face many challenges to reliable and sustainable water supply. Currently, almost all the water treatment plants, and distribution points operate with fuel-based pumps, which are expensive, unsustainable and has some negative impact on the environment. To address these issues NGO Forum is planning to utilize solar energy in this system. The plan will help cut down on operational costs, reduce environmental impacts, and provide a stable supply of water for the Rohingya refugee community.

Following table shows an overview of present water supply machineries

|  |
| --- |
| **Information of Installed Pump**  |
| Shalbagan Treatment Plant (Camp 26) |
| **SL** | **Name of pump** | **Location** | **Power**  | **Quantity**  | **Water Treatment**  | **Remarks**  |
| 1 | Kilosker (Diesel) | Camp 26 | 60 hp | 2 | 380,000 ltr per day  |   |
| 2 | Kilosker (Diesel) | Camp 26 | 25.6 hp | 1 |   |
| 3 | Lombardini (Diesel) | Camp 26 | 18 hp | 1 |   |
| Nayapara RC Treatment Plant |
| 1 |  Sifang Pump (Diesel) | Plant -1 | 12 hp | 1 | 590,000 ltr per day  |   |
| 2 |  Sifang Pump (Diesel) | Plant -2 | 12 hp | 1 |   |
| 3 |  Sifang Pump (Diesel) | Plant -3 | 12 hp | 1 |   |
| 4 |  Sifang Pump (Diesel) | Plant -3 | 20 hp | 1 |   |
| 5 | Raw water collection  | Reservoir | 12 hp | 1 |   |
| 6 | Raw water collection  | Reservoir | 20 hp | 1 |   |

**Objective:** The objective of this consultancy is to estimate design and plan of a solar power system for the Water Treatment Plants of following location

1. **Nayapara Registered Camp (Water Treatment Plant)**

GPS Location: (lat-20.95811944, long-92.24940278

1. **Camp 26 (Shalbagan Water Treatment Plant)**

GPS Location: (lat-20.94978, long-92.25156)

**Scope of Work:** The consultant will be responsible for the following tasks:

1. A detailed site assessment of the Water Treatment Plants.
2. Analyze the current diesel-powered water pumping systems, including their energy consumption, operational hours, and maintenance records.
3. Assess the potentiality of off-grid solar systems and environmental conditions at the sites.
4. Design off-grid solar power system with backup that meets the total load requirements for the existing set up to supply adequate water.
5. Propose suitable alternatives for the pumps to minimize the overall cost.
6. Solar system design should be resilient to the climate challenges of Teknaf i.e. Heavy rainfall, Saline prone area etc.
7. Design detailed superstructures and prepare cost analysis for the solar panel & control room installation.
8. A feasibility study to evaluate the technical, economic, and environmental viability of the proposed solar systems.
9. Prepare a cost-benefit analysis, including the initial investment, operational cost savings, and payback period.
10. Develop a detailed implementation plan, including timelines, milestones, and resource requirements and identify potential risks and propose mitigation strategies.
11. Prepare technical specifications for the procurement of solar equipment and components.

**Qualification and requirements:**

* Consultant Team should have certified experts (at least one) having minimum BSc in Electrical and Electronic Engineering preferably with a Master’s degree in Electrical and Electronic Engineering/ Renewable Energy or relevant field for the Electrical design.
* Consultant Team should have certified experts (at least one) having minimum BSc in Civil Engineering preferably with a Master’s degree in Civil Engineering/ Structural Engineering or relevant field for civil structure design.
* Minimum of 5 years of experience in designing and implementing solar power systems.
* Proven experience in similar projects across the country, preferably in humanitarian settings.
* Excellent communication and report writing skills.

**Deliverables:**

An overall comprehensive report for each treatment plant should be submitted covering following area

1. Site assessment report
2. Detailed system design with drawing
3. Single line diagram (SDL) of the system
4. Structural Design (Civil work)
5. BOQ and BOM
6. Feasibility study and Return if Investment (ROI) report
7. Implementation plan

All the soft copy (Word, Excel, pdf AutoCAD etc.) of drawing, design, cost estimation, SDL should be shared separately.

**Application Process:** Interested and qualified candidates or firms needs to submit their proposal which should include the following:

* Detailed Curriculum Vitae / company information
* Detailed description of the methodology and technical approach (not more than 3 page),
* Tentative work plan with number of days, timeframe and deadlines for deliverables
* Evidence of at least two similar assignments containing the following information:
	+ Name of organization
	+ Title of the assignment
	+ Duration and location of the assignment
	+ Proposed Solutions and Outcome – include visuals, web-links, etc.
	+ Brief methodology
	+ Reference /Contact person details
* VAT and/or Tax certificate
* Estimated consultancy fee

**Note:** Technical Proposal & Financial Proposal must be submitted separately.

**Submission Process:** Bid must be sent in the addressed below:

**Snr. Manager Procurement & Logistics**

NGOF-UNHCR Project

NGO Forum for Public Health

Project Office, Sayeman Pink Pearl

Flat # B4 (2nd Floor), Plot # 71, Block-A

Kolatoli (Hotel-Motel Zone), Cox’s Bazar.

Interested parties can also share bid by email in following address: ngofcox.tender@gmail.com

**Guideline & Time Frame**

The preliminary design and concept will be presented to NGO Forum and UNHCR before proceeding to topographical survey.

The deadline for delivery of the first draft of the document will be three weeks after contact signature. The deadline for delivery of the final version will be three weeks after receiving comments from NGO Forum and UNHCR on the first draft. A brief presentation on the final version should also be submitted along with the final draft.

All the .xml, .PDF, .PPT, .doc, .KML and .shp files need to be attached to the draft and final reports as a detailed annex.

The design life of this network will be 20 years before complete reconstruction.

The consultant team will have weekly progress meetings with NGO Forum and UNHCR during the duration of the project to review the previous weeks work and plan the activities for the following week.

**Time Frame:**

The deadline for delivery of the first draft of the document will be three weeks after contact signature. The deadline for delivery of the final version will be three weeks after receiving comments from NGO Forum and UNHCR on the first draft.

**First Draft : Three (3) Week**

**Second Draft : Three (3) Week**

**Selection Criteria:**

The selection of the consultant will be based on the following weighted criteria:

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| --- |
| **EVALUATION CRITERIA** |
| Relevant Experience (20%) |
| * Demonstrated experience in similar infrastructure projects, preferably humanitarian context.
* Experience in the Teknaf region or similar challenging environments.
 | 10%10% |
| Technical Proposal (40%) |
| * Quality and feasibility of the proposed methodology.
* Clarity and completeness of the project plan, including timeline and deliverables
 | 20%20% |
| Team Qualifications (10%) |
| * Expertise and experience of key team members in relevant fields
 | 10% |
| Financial Proposal (30%) |
| * Cost-effectiveness and clarity of the budget
 | 30% |

**Payment Instructions:**

|  |  |
| --- | --- |
| Upon signing the contract | 30% |
| Upon Submission of First Draft | 40% |
| After Submitting Final Draft | 30% |

**Contact Information:**

For further information or clarifications, please contact:

**Md. Abu Rafat Siddique**

Deputy Project Coordinator

Cell: +8801744333552

email: ngofcox.technical@gmail.com

Approval and Commencement:

This TOR is approved by ………………… and is effective from ……………………. The consultant is expected to commence work immediately upon signing the contract.