

Host and Rohingya Enhancement of Lives Project (HELP)  
Department of Public Health Engineering (DPHE)  
Terms of Reference (TOR)  
Position: Solar Power System Consultant  
Package no. SD-10

**Background**

The Government of the People's Republic of Bangladesh (GoB) has received a grant and loan from the International Development Association (IDA) to fund the Host and Rohingya Enhancement of Lives Project (HELP). Component 1: Resilient Water, Sanitation, and Hygiene (WASH) of the project is being implemented by the Department of Public Health Engineering (DPHE), under the Ministry of Local Government, Rural Development, and Cooperatives (MLGRD&C). The Project Implementation Unit (PIU) is responsible for overseeing the project, ensuring that the funds are utilized efficiently and solely for the intended purposes, in compliance with the Borrower's obligations. The Department of Public Health Engineering (DPHE) plans to allocate a portion of the grant proceeds to engage a Solar Power System Expert in accordance with the World Bank Procurement Regulations.

**Objective**

The objective of the assignment is to provide technical advisory and implementation support for the deployment, maintenance, and optimization of solar energy systems powering WASH facilities under the HELP. Specifically, the expert will be responsible for reviewing the existing design and installation arrangements of the solar systems, identifying opportunities for system enhancement, and coordinating with relevant stakeholders to support effective implementation of the solar solutions for the WASH facilities.

**Responsibilities**

- Conduct a technical and operational assessment of existing and proposed solar energy infrastructure in the WASH systems (mini piped water schemes, community water options, waste management plants, latrines, etc.) in both host communities and DRP camps.
- Provide technical and design support by reviewing and refining the existing system designs and specifications for solar PV installations, ensuring suitability for water pumping, lighting, and waste processing applications
- Review all aspects of the project and prepare a detailed breakup of the cost estimate of each component of the project.
- Recommend the method of implementation of the project considering economic, financial and commercial aspects.
- Support the preparation of bidding documents, including BoQs and technical specifications, and assist during evaluation and implementation phases.
- Ensure energy solutions are integrated with construction timelines and site-specific constraints in Cox's Bazar and Bhasan Char.
- Identify the opportunity and provide solutions/ recommendations for grid integration or the net metering technology for surplus energy to the grid.
- Review the available technology in the market and recommend the best technology for the project and fix the efficiency level of the equipment.
- Carry out cost-benefit analysis for different technological options for solar PV depending on module type, mounting options (fixed vs. tracking system), inverter type and potential use of electric storage.

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- Review legal and institutional aspects, environment and other issues for the proper implementation of the project.
- Calculate the reductions in Greenhouse Gas (GHG) emissions achieved through the implementation of the solar-powered systems. This assessment should include a comprehensive analysis of the emissions offset by transitioning to solar energy, in comparison to traditional energy sources, thereby quantifying the environmental benefits of the solar interventions.
- Develop a Standard Operating Procedure on the active maintenance of the solar system for optimal performance, guidelines for the safe disposal or recycling of solar panels and batteries, addressing the e-waste management aspect as well as other related equipment.
- Develop a comprehensive strategy for managing e-waste resulting from solar-powered systems, including batteries and panels. This will involve assessing the potential volume of e-waste, recommending environmentally responsible and sustainable disposal or recycling methods, and ensuring compliance with relevant e-waste management regulations.
- Explore possibilities for extending the life cycle of these components and recommend practices to minimize e-waste generation.

A. **Key Qualifications:** Required academic qualifications and Professional Experience of the consultant are furnished below:

**(I) Educational Qualification:**

University graduate in Electrical & Electronics Engineering with M. Sc in Renewable Energy Technology or relevant field;

**(II) Experience:**

- Minimum of 10 years of experience in Renewable Energy Sector. 7 years of experience in any government/semi government/international organizations/ Multilateral Development Banks (MDBs) being actively involved and fully conversant with Solar Energy/Renewable Energy.
- Should have minimum 5 years of working experience in World Bank/Asian Development Bank or other MDB or funded project as Solar Energy Expert
- Research experience (minimum 3 years) on solar systems integrated with WASH or public infrastructure. Understanding of updated solar energy technologies status, designing and implementation challenges in Bangladesh.
- Professional work experience with the private, bilateral and multilateral organization in the field of solar energy and should have clear knowledge on solar PV based drinking water and filtration system design and implementation.
- Professional work experience or knowledge on waste to energy technology will be given preference.
- Experience and knowledge of Microsoft office tools and solar PV system modeling tools like PV Syst, Auto Cad and others.
- Demonstrate strong written and oral communication in English and Bangali language.
- Excellent interpersonal and communication skills.
- Willing to travel to remote areas.
- Ability to make decisions independently and strong problem resolutions skill.

Preference will be given to candidates with experience working on projects or funds related to Forcibly Displaced Myanmar Nationals (FDMN)

**B. Duration of the Assignment:**

The Consultant shall provide services for the duration of 36 months or until the grant/project closing date, whichever occurs first. However, the continuation in this position will be contingent upon the Consultant's performance.

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### C. Institutional Arrangement

The Consultant will be directly responsible to the PD. The PMU will provide necessary assistance (like office accommodation, computer, logistic services, consumables and other things or related facilities) to the Consultant in carrying out his/her scheduled activities. The PMU will also provide necessary assistance to carry field trips - when necessary. The consultant needed to be attached with RPMU (as and where required) located in the district Cox's Bazar and Noakhali respectively.

### D. Reporting Obligations/Schedule deliverable:

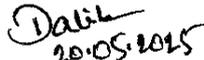
- **Periodical Report:** Monthly Activity Report, Field visit report, assessment of existing and proposed solar energy infrastructure in the WASH Facilities Report etc.
- Reports on reductions in Greenhouse Gas (GHG) emissions achieved through the implementation of the solar-powered systems, Cost-benefit analysis report for different technological options for solar PV use of electric storage as and when required.

### E. Remuneration:

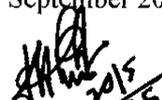
The Consultant will be paid a negotiable consolidated remuneration inclusive of all applicable Taxes and VAT as per law of Bangladesh. Payment shall be made monthly basis on satisfactory performance output certified by the Project Director.

### Procurement/ Hiring method

The Consultant will be hired and contracted as per the "Individual Consultant (IC)-Open" Selection method of World Bank Procurement Regulation (PR), 2016, updated in September 2023.

  
20.05.2025

(Dalila Afroze)  
Executive Engineer,  
Arsenic Management Division &  
Member, ToR Committee, DPHE.

  
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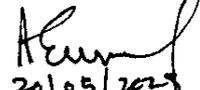
(Md. Shafikul Alam)  
Executive Engineer  
Ground Water Division &  
Member, ToR Committee, DPHE.

  
20/05/2025

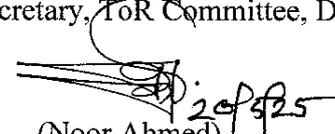
(Sharmistha Debnath)  
Executive Engineer  
Design Division &  
Member, ToR Committee, DPHE.

  
20/05/2025

(Shishir Kumar Biswas)  
Executive Engineer  
SIR Division &  
Member Secretary, ToR Committee, DPHE.

  
20/05/2025

(Mohammed Anwar Eusuf)  
Superintending Engineer  
Planning Circle &  
Member, ToR Committee, DPHE.

  
20/5/25

(Noor Ahmed)  
Project Director, DPHE  
Host and Rohingya Enhancement of Lives  
Project (HELP) &  
Member, ToR Committee, DPHE.

**Approved**

  
Tuskar Mohon Shadhu Khan  
Chief Engineer  
Department of Public Health Engineering  
Govt of Bangladesh, Dhaka.

  
20/5/25

(Bidhan Chandra Dey)  
Superintending Engineer  
Ground Water Circle & Convener,  
ToR Committee, DPHE.

