

Terms of Reference
for
APPOINTMENT OF CONSULTANT
FOR
FEASIBILITY STUDY ON
200 MW SOLAR POWER PARK AT PADMA CHAR IN RAJSHAHI

1. Background

The vision of the Government of Bangladesh is to provide quality electricity to all by 2021. To fulfill the GOB’s vision and objectives of electrification, development of renewable energy resources will play a vital role. The government has taken appropriate measures for generating environment-friendly electricity from renewable energy sources. The Renewable Energy Policy has already been adopted with the target to produce 10% of the total power generation by 2021 from renewable energy sources. In absolute numbers this means that at least 2000 MW power has to be generated from renewable sources by 2021. A nodal agency has been established in the name of “Sustainable and Renewable Energy Development Authority (SREDA) under newly enacted SREDA Act, 2012 with objective to promote, develop and co-ordinate renewable energy & energy efficiency activities in the country.

Government of Bangladesh has prepared a plan to generate 3100MW of electricity using RE resources from both public and private sector by 2021. The Power Division has set a target for generation entities to produce about 1100MW power from RE including 455MW from solar. Entity-wise RE based power generation target is given below:

Sl. No	Generation Entity	Target (MW)	
		Solar	Wind
1.	Bangladesh Power Development Board (BPDB)	100	100
2.	Ashuganj Power Station Company Ltd. (APSCL)	100	100
3.	Electricity Generation Company of Bangladesh (EGCB)	100	100
4.	North West Power Generation Company Ltd. (NWPGCL)	55	100
5.	Rural Power Company Ltd. (RPCL)	50	100
6.	Coal Power Generation Company Ltd. (CPGCL)	50	100
Total		455	600

To achieve the above mentioned targets, Rural Power Company Ltd. (RPCL) and Ashuganj Power Station Company Ltd. (APSCL) are intending to jointly establish a solar park at suitable area of Padma char in Rajshahi.

As part of the above mentioned solar power project the companies are intend to carry out a detailed feasibility study for smooth implementation of the project. Government has assigned Power Cell for appointing a consulting firm to conduct a feasibility study in favor of the companies.

2. Objectives of the Study

The main objectives of this assignment are:

- a) Assess the potential of solar energy;
- b) Popularize solar energy technology in the country;
- c) Attract investment in Renewable Energy project;
- d) Selection of site/sites and demarcation of land;
- e) Smooth implementation of the project.

3. Scope of Work

The scopes of services include the following. The consultants can propose some modifications in the scopes of work to meet the objectives of the assignment.

- ***Identification of site/sites & land areas***

Will review and recommend on the site selection and land area selected by RPCL and APSCL considering Morphological study of the Padma river surrounding of the proposed land, effect of uncontrolled water flow from Farakka barrage during a particular season, Geotechnical survey of the proposed land & Topographic survey.

- ***Plant Capacity***

Depending on the land area available, recommend the plant capacity.

- ***Method of Implementation of the Project***

Recommend the method of implementation of the project.

- ***Power Evacuation***

Detail recommendation on the method of power evacuation.

- ***Applicable Technology***

Review the available technology in the market and recommend the best technology for the project and fix the efficiency level of the equipment.

- ***Cost Estimation***

Review all aspects of the project and prepare a detailed breakup of cost estimate of each component of the project.

- ***Review of Environmental Issues***

Conduct the Environmental Impact Assessment (EIA) and Social Impact Assessment (SIA) including identification and mitigation of risk. Also review the existing environmental laws and regulations and recommend environmental issues that may arise as a result of the implementation of the project.

- ***Recommend on River Bank Erosion Protection***

Necessary study and recommendation on river bank erosion protection and impact of flood and change of wind flow on river area.

- ***Legal and Institutional Aspects***

Review legal and institutional aspects for the proper implementation of the project regarding resettlement of the population of the selected area if required.

4. Team Composition & Qualification Requirements for the Key Experts

Consulting services are solicited from experts experienced in preparing a solar based power plant of minimum capacity of 50 MW. Consulting firms should have experience to perform the consultancy services, experience of similar assignments, experience in similar conditions, firm's capability, and availability of appropriate skills among key staff, availability of resources etc. The Proposer is expected to engage the following categories of key experts for the Project and CVs shall be submitted accordingly.

▪ Renewable Energy /Technical Expert (Team Leader)	60 man days	} Within 120 days of Contract Period
▪ Civil Works & River Morphology Expert	30 man days	
▪ Environmental Expert	30 man days	
▪ Legal and Institutional Expert	30 man days	
▪ Financial/Economic Analyst	30 man days	

The following are the key qualifications required for the above mentioned expert positions:

- **Renewable Energy/Technical Expert (Team Leader):** The team leader must have a Bachelor's degree in Engineering or Masters in Renewable Energy or any other relevant subject with minimum of 20 years experience in the field of substation designing, electricity transmission & distribution system design, operation including minimum 5 years of experience in the field of renewable energy technology.
- **Civil Works & River Morphology Expert:** The civil works & river morphology expert must have a Masters degree in Hydraulic/Water Resources/River Engineering with B.Sc. degree in Civil engineering. The expert must have a minimum of 10 years of experience in the field of civil construction, structural design, river morphology and hydrological study.
- **Environmental Expert:** The environmental expert must have a Masters degree in Environmental Science or any relevant subject. The expert must have a minimum of 5 years of experience in the field of environment.
- **Legal & Institutional Expert:** The legal & institutional expert must have a Masters degree in Law from a recognized institute of higher learning. The expert must have a strong background and experience in Bangladesh law and legislation related to land management, environment and conservation and natural resource management. The expert must have a minimum of 5 years of relevant and practical experience.
- **Financial/Economic Analyst:** The financial/economic analyst must have a Masters in Economics/Business Administration or any relevant subject with a minimum of 5 years of experience in financial/economic analysis.

5. Evaluation Criteria

The evaluation of consulting firms will be done according to the categories mentioned below:

- **Age of the firm**
- **Experience of the firm in Bangladesh Power Sector**
- **Experience of firm in similar works**
- **Qualification of Key Professionals**
- **Work Methodology and Plan**

6. Reporting Requirements and Time Schedule for Deliverables

- Inception Report within ten days of signing of contract
- Draft Final Report within three months of signing of contract
- Final Report incorporating comment from stakeholders within a week of receipt of comments from Power Cell

7. Duration

The duration of this assignment will be 120 (One hundred twenty) days. The selected firm may engage some supporting staff for this assignment.