SECTION – III

1. Introduction & Background:

REC Power Development and Consultancy Limited (RECPDCL) an ISO 9001:2015, ISO 14001:2015 & OHSAS 18001:2007 certified company, a wholly owned subsidiary of REC Ltd, was incorporated on 12th July 2007. It received certificate of commencement of business on 31st July 2007. The company focus is on facilitating the power utilities in the areas of their operation specifically related to the Power Distribution sector, by providing expertise to capitalize on the emerging needs and demands of Power Sector.

2. Intent of the Work:

RECPDCL intend for Consultancy services for undertaking Project Management Consultancy services for setting up Solar PV Plants including Floating Solar, Ground Mounted Solar etc. at various locations for Two Years across PAN India.

3. Location:

Anywhere in the country.

4. Project Scope & Expert Selection:

The tender is for empanelment purpose only and RECPDCL is not liable to ward any such work to the empaneled bidders. Under a specific project, financial bids will be asked by all the empaneled bidders and L1 bidder will be awarded the specific work.

RECPDCL proposes to empanel **reputed technical consultants under each category** having relevant experience in solar industry.

Sl No	Category	Min Floating Solar PV Capacity	Min Solar PV Capacity (cumulative)
1	Category A (for projects up to 10 MW)	1 MW	10 MW
2	Category B (for project more than 10 MW and upto 50 MW)	5 MW	50 MW

Interested bidder has to separately apply for each category in order to participate in the empanelment process under each category.

SECTION – IV

Qualification Requirements

The tenderer should have satisfactory experience providing PMC services for Solar projects. The tenderers should be well aware of the problems that are likely to be encountered while executing such activities. Offer of only those experienced and resourceful bidder will be considered who will meet the following qualifying requirements:

Sl No.	Minimum Eligibility Criteria	Documents Required
1.	The firm must be incorporated and registered in India under the Indian Companies Act 1956/ LLP Act 2008 & subsequent amendments thereto and should have been operating for the last 3 years	1. Company Registration Certificate from competent Govt. Authority. 2. GST Registration Certificate
2.	The Net Worth of the Bidder for last 4 (Four) years as on 31.03.2022 should be positive	Copy of the statutory audited Balance Sheet and P&L account and Networth certificate from the Registered Chartered Accountant of Last 4 (Four) years. **Statutory Auditor Certificate must be enclosed for the annual turnover of PMC Charges on solar PV project for the last 4 (four) financial years**.
3.	Bidder must have average annual turnover of: **Category A:** INR 1.05 Cr in the past 4 (Four) financial years in respect of PMC Charges on Solar PV Project. **Category B:** INR 2.63 Cr in the past 4 (Four) financial years in respect of PMC Charges on Solar PV Project. In case MSEs/Startup seeking exemption under prior turnover, MSE and Start-up bidders shall be given relaxation to the extent of lowest minimum turnover as per latest GOI guidelines.	
4.	The organization/ Individual should have a qualified team of professionals on-roll having bachelor's degree in Engineering from a recognized University and having experience in solar industry.	At least 3 no. of CV's to be submitted comprising of at least: • **1 Team Leader** of Minimum 10 years in Solar industry • **2 Key Members** having minimum experience of 5 years in Solar Industry

5.	The bidder should have experience in project management consultancy of Ground mounted Solar Plant and Floating Solar power plant. • **Category A (for projects up to 10 MW) -** a. At least **a single work of minimum capacity of 8 MW** (including ground mounted or Floating Solar) and at least a **minimum capacity of a single floating Solar PV plant of 1 MW** in the last four years till the date of bid submission. OR b. At least a **two minimum works of capacity 5 MW** (including ground mounted or Floating Solar) and at least a minimum capacity of a **single floating Solar PV plant of 1 MW** in the last four years till the date of bid submission. • **Category B (for projects more than 10 MW and up to 50 MW) -** a. **At least a single work of minimum capacity of 40 MW** (including ground mounted or Floating Solar) and **at least a minimum capacity of a single floating solar PV plant of 5 MW** and in the last four years till the date of bid submission. OR b. At least a **two works of minimum capacity of 25 MW** (including ground mounted or Floating Solar) and at least a **minimum capacity of a single floating solar PV plant of 5 MW** and in the last four years till the date of bid submission.	Copies of Purchase Order/Work Order and Completion Certificate.

Detailed and precise information on these matters should be furnished in technical bid. Failure to do so is likely to result in the offer being rejected. The bidder must fulfil the above PQ/eligibility criteria conditions in addition to the bid terms. Bid of bidders not fulfilling the pre- qualification /eligibility conditions as in the bid are liable to be summarily rejected. Undertaking for subsequent submission of any of the above documents will not be entertained under any circumstances.

SECTION –V

5.0 Scope of Work

The Scope of work is indicative in nature but not limited to the following and bidder must include their areas that shall be required for successfully delivering the scope:

[A] Submission of Technical Feasibility Report and Detailed Project Report

(1) Feasibility Study:

a. **Site identification** – Identify potential project site and boundary area, assessment about the availability and type of land/water surface area with details of access/right of way, proximity to nearby electrical substations.
b. **Site conditions** - Desktop study of site details (such as Solar radiation, Wind speed, temperature, climatic conditions, flood level, soil condition etc.)
c. **Preliminary study of reservoirs site condition -** Review of historical daily water levels - MWL, FRL, MDDL, inflow and outflow data, water velocity for preceding 20 years (or since the commissioning of the reservoir, whichever is higher) from clients, if available. An assessment of water body surface area at various water levels (such as FRL, MDDL etc.) and average water body surface area during the above- mentioned period.
d. **Technology selection** – Considering site conditions selection of PV technology such as Polycrystalline technology, Mono crystalline technology, PERC and mono PERC etc.
e. **Capacity estimation and basic layout** - Preparation of conceptual design of the project giving different options of technology including estimation of installed capacity.
f. **Estimated energy yield of the project** - High-level solar resource data and estimates of plant losses, or an assumed performance ratio (based on nominal values seen in existing projects).
g. **Project cost estimate –** High level approximate costs for equipment, development, construction and operation of the project.
h. **Risk assessment matrix** – Identify preliminary project risk such as technical risk, project development risk etc.

(2) Detailed Project Report:

I. **Part A: Technical assessment for Floating Solar PV Power plant**
   a. **Site details**: Assessment of site conditions such as location, weather conditions, water level, its variation, HFL, water/land profile, shadow-free area, site accessibility such as approach road availability of construction water/power, feasible location for setting up of FSPV project's control room, storage area, suitable plant assembly area, etc.
   b. **Study of Hydrography (including Bathymetry) & Geotechnical characteristics** of the Reservoir (including depth of water (Season wise) and water level variations (HFL, FRL, MDDL etc.,), water flow velocity, soil composition of the banks and bottom of the water body, etc.), Water quality etc.,
      - The study will also include the identification/recommendation of feasible project site coordinates for plant installation etc.

c. **Resource assessment** such as analysis of solar radiation data using various software/tools and comparing the same with the data gathered by different sources, assessment of yearly/monthly climatic data such as wind load, precipitation, humidity, temperature etc., and their impact on plant design, the data should be gathered from reliable national/international sources such as IMD Data, NASA Satellite Data, Meteonorm (6.0) Time Series Data, Meteonorm (7.0)- Time Series Data, Solar GIS Data etc.

d. **Technical assessment**: Proposing various technical options including type of floats, anchoring/mooring mechanisms, type of solar PV modules, type of inverter with type of floating system used for these inverters, cable types, cable laying arrangements like on/under water bodies and BOP along with the technical specifications for all the major components proposed to be deployed in the project. Codes and Standards applicable for various components (including their technical specifications) proposed in the project. Comparative analysis of various floating technology options (including float, anchoring mooring etc.,) and recommend the best suitable option for the proposed site.

e. **FSPV Plant design**: Providing proposed plant layout drawing, Anchoring / Mooring system design, Plant DC/AC SLD, requirement of electrical, civil, and mechanical infrastructure for the plant.
   - Preparation of power evacuation plan for floating solar PV project including available substation, auxiliary power distribution network, metering arrangement, pooling arrangement, cabling, lightning arrestors, transformers and associated infrastructure, power evacuation system etc.
   - Preparation of power evacuation system with preliminary SLD for electrical system starting from plant evacuation to the grid connectivity point

f. **Power evacuation infrastructure**: Assessment of existing and proposed Transmission line, power evacuation infrastructure at the substation side etc. of the project. Assessment of transmission line will include the route survey map along with the details of land type, any hindrances/crossings, right of the way etc.

g. **Solar plant capacity and Energy yield estimation** for installation of floating solar PV Projects on the identified site considering various options such as DC overloading, PV module deration, auxiliary consumption, transmission losses (up to delivery point) etc., calculation of CUF, PR estimation.

h. **Project planning and execution time schedule** (covering pre/post tender activities), procurement and construction planning, commissioning procedure.

i. **Operations and Maintenance**: O&M practices to be followed, preventative and general maintenance schedule, etc.

j. Plant Safety and Security requirement.

k. Risk assessment and its mitigation plan.

II. **Part B: Technical assessment of Ground mounted project:**

a. **Site details:** Assessment of site conditions such as location, weather conditions, water level, its variation, land profile, shadow-free area, site