

**Qualifying Requirement (QR) for Vendor Enlistment for  
Operation & Maintenance of Solar plants up to 50 MWp.  
(CATEGORY-2)**

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| <b>A) CEG DETAILS</b> |   |  |
| 1.0                   | CEG NO.   | <b>SOLAR-99</b>  |
| 2.0                   | CEG DESCRIPTION   | <b>Operation &amp; Maintenance of Solar plants up to 50 MWp.</b> |
| 3.0                   | CEG RESPONSIBILITY  | VDC  |
| <b>B)</b>             | <b>Technical Criteria of QR:</b>  |  |
|                       | <p>1. The Bidder should have executed the Contract of</p> <p style="padding-left: 40px;">a. "Erection &amp; Commissioning" of 10 MWp or above capacity of Solar Power Plant, having connectivity with grid, during last five years (05) from the date of application</p> <p style="text-align: center;">OR</p> <p style="padding-left: 40px;">b. "Operation &amp; Maintenance" of 10 MWp or above capacity of Solar Power Plant, having connectivity with grid, in single order for at least one year, during last five years (05) from the date of application.</p> <p>2. The Bidder should have Valid Electrical License.</p>   |  |
| <b>C)</b>             | <b>FINANCIAL CRITERIA:</b>  |  |
|                       | <p>1.0 Net worth of the bidder as on the last day of the preceding financial year (reckoned as on date of submission of application) should not be less than 100% of the bidder's paid up share capital. In case the Bidder does not satisfy the Net worth criteria on its own, it can meet the requirement of Net worth based on the strength of its Subsidiary(ies) and/or Holding Company and/or Subsidiary(ies) of Holding Companies wherever applicable. The net worth of the Bidder and its Subsidiary(ies) and or Holding Company and/or Subsidiary(ies) of the Holding Company, in combined manner should not be less than 100% of their total paid up share capital. However individually, their Net worth should not be less than 75% of their respective paid up share capitals.</p> <p>Net worth in combined manner shall be calculated as follows:</p> <p>Net worth (combined) = <math>(X1+X2+X3) / (Y1+Y2+Y3) \times 100</math></p> <p>Where X1, X2, X3 are individual Net worth which should not be less than 75% of the respective paid up share capitals and Y1, Y2, Y3 are individual paid up</p> |  |

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|    | <p>share capitals.</p> <p>2.0 In case the Bidder is not able to furnish its audited financial statements on stand-alone entity basis, the unaudited unconsolidated financial statements of the Bidder can be considered acceptable provided the Bidder further furnishes the following documents for substantiation of its qualification.</p> <p>(i) Copies of the unaudited unconsolidated financial statements of the Bidder along with copies of the audited consolidated financial statements of its Holding Company.</p> <p>(ii) A Certificate from the CEO/CFO of the Holding Company, stating that the unaudited unconsolidated financial statements form part of the Consolidated Annual Financial Statements of the Holding company.</p> <p>In cases where audited results for the last financial year as on date of submission of application are not available, the financial results certified by a practicing Chartered Accountant certifying the financial parameters shall be considered acceptable. In case, Bidder is not able to submit the Certificate from a practicing Chartered Accountant certifying its financial parameters, the audited results of three consecutive financial years preceding the last financial year shall be considered for evaluating the financial parameters. Further, a certificate would be required from the CEO/CFO stating that the Financial results of the Company are under audit as on the date of submission of application and the certificate from the practicing Chartered Accountant certifying the financial parameters is not available.</p> <p><b>Notes for Clause 1.0 of Financial Criteria above:</b></p> <p>(i) Net worth means the sum total of the paid up share capital and free reserves. Free reserves means all reserves credited out of the profits and share premium account but does not include reserves credited out of the revaluation of the assets, write back of depreciation provision and amalgamation. Further any debit balance of Profit and Loss account and miscellaneous expenses to the extent not adjusted or written off, if any, shall be reduced from reserves and surplus.</p> <p>(ii) Other income shall not be considered for arriving at annual turnover.</p> |   |
| D) | Document to be submitted by Vendor in support of meeting QR Document  | Relevant and legible PO copies with detailed scope of work, terms and conditions, BOQ and Client's Completion Certificates /RA bill/Final Deviation Statement for the work executed and other certificate/documents as mentioned elsewhere. |
| E) | Additional Documents to   | <p><b>Other Documents to be submitted:</b></p> <p>In addition to the documents required in support of meeting</p>   |

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|    | be submitted               | <p>technical requirements as stated above, following documents are required to be submitted by the Applicants applying for enlistment: -</p> <ol style="list-style-type: none"> <li>1. Audited balance sheets including Profit &amp; Loss statements for the previous three completed financial years. In case the audited documents are not ready / available, then certified copy by a registered practicing Chartered accountant may be submitted.</li> <li>2. NSIC / Udyam / SSI / MSME registration certificate, if any.</li> <li>3. PAN, PF and GST registration certificates</li> <li>4. Any other documents in addition to the above which the applicant wants to submit.</li> </ol> <p>NTPC can ask other documents as necessary during evaluation.</p>   |
| F) | Special Terms & Conditions | <ol style="list-style-type: none"> <li>1. Please refer special terms &amp; conditions of enlistment available at CPC portal <a href="http://vendor.ntpc.co.in">vendor.ntpc.co.in</a></li> <li>2. Vendors shall be enlisted for period of three years from the date of uploading of list on website, subject to fulfilment of the terms &amp; conditions.</li> </ol> <p>The word "executed" means the bidder should have achieved the criteria specified in the QR, even if the total contract is not completed/closed. In case of contracts under execution as on date of submission of application, the period of work executed against such contract/order till date of submission of application will be considered. Further, the work which started before the QR period and completed within QR period, then full period of the contract shall be considered.</p> |

## **Scope of Work for O&M Contract of Solar PV Plant**

### **GENERAL SCOPE:**

The scope of work includes Operation, Maintenance and housekeeping of the entire Solar PV plant. **SOLAR Plant Operation & Maintenance/ Breakdown maintenance/ Preventive maintenance/ Overhauls:** Periodic overhaul of the plant equipment's, in line with manufacturer's guidelines on periodicity and technical procedures.

### **Plant Operation:**

- a. Daily plant start, normal stop and emergency stoppage as per the requirement in compliance to grid operator.
- b. Operation of all plant equipment's as per standard operating procedures prescribed by OEM and additional procedures provided by NTPC.
- c. Daily Monitoring of all AJB's state of health, AJB currents in SCADA and field checks on suspected AJB string(s) for fault identification and taking corrective measures.
- d. Monitoring/checking of all String's current in AJB at weekly frequency and normalizing the faults if any.
- e. Daily monitoring of Inverters state of health, removal of ground faults or other errors as early as possible
- f. Daily walk down check of AJB's, RMU's, Transformer's, LTDB's, Battery charger, Inverter's, UPS, battery, Switchyard and recording vital parameters in log sheet and taking corrective actions for any deviations in parameters/ abnormality in the equipment's.
- g. Assisting in declaring the capacity (DC) for communicating to States Load dispatch canters and to other reporting points as required.
- h. Providing required Plant Parameter inputs to NTPC/NTPC nominated agency for scheduling and forecasting services.
- i. Daily/Weekly walk down check of Panels/Arrays for identifying defects, damages and shade concerns and taking corrective measures.
- j. Vegetation management/supervision of grass cutting, panel washing activity
- k. Daily filling of operational/maintenance records & reports in Log books
- l. Overall Plant Performance and individual inverters performance Monitoring and analysis of deviations w.r.t. Optimum generation level and initiating corrective and preventive actions to restore the optimum generation level.

### **Maintenance Works:**

- 1) **Module tilt angle changing.** As per OEM recommendation or as optimized for highest generation through PV System.

- 2) **Module Water Wash/cleaning:** includes cleaning/washing of all the installed solar modules.
- 3) **House Keeping/ grass cutting/ Herbicide spray/ Drain cleaning/ waste/ debris disposal:** Grass removal in plant area on regular basis.  
Spray of herbicides/de weeding chemicals, and removal of weed, grass, waste debris, and safe disposal of the same away from the plant area.
- 4) **PAINTING OF SOLAR PLANT EQUIPMENTS:** This item covers painting of all Solar Plant equipment's like breakers, transformers, OVCBs, Switchyard Equipment's & poles, Control room & inverter room shutters, Main Gate, Fencing etc.
- 5) **Monitoring of Array Junction box (AJB).**
- 6) **Replacement of solar panel**
- 7) **INVERTER MAINTENANCE**
- 8) **Battery Chargers and Battery banks for Main & UPS Batteries**
- 9) **Battery bank damaged cells replacement.**
- 10) **UPS Preventive maintenance**
- 11) **Capacity test of battery banks**
- 12) **RMU**
- 13) **Annual maintenance of LT & HT Switchgear and ACDB**
- 14) **Control and relay panels**
- 15) **SCADA:** Functional checks and replacement of defective parts, Panel / equipment cleaning.
- 16) **All switchyard equipment's (CTs, PTs, Isolators, PCVCBs, stringing, jumpering, cabling) Transmission Lines etc**
- 17) **Power Transformers & LT distribution transformer.**
- 18) **Fire extinguishers (CO2 / DCP / foam) / fire buckets**
- 19) **Fire alarm panel & sensors**
- 20) **Lighting system (including Area, periphery, emergency lighting & associated UPS).**
- 21) **Earth pits checking.**
- 22) **Dewatering of Cable Trenches/Cable Joint Pits During Monsoon**
- 23) **Dewatering pump & Motor**
- 24) **Water wash system.**
- 25) **Cable Jointing, termination, laying and attend defects.**
- 26) **Maintenance of weather monitoring system & Pyronometer.**