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**Sub: “Repairs & modifications for enhancement of 822 kwp rooftop solar system at JNPT along with AMC (after repair &modification) ”**

Dear Sir,

JNPT is inviting budgetary offers from reputed firms for the works of “Repairs & modifications for enhancement of 822 kwp rooftop solar system at JNPT along with AMC (after repair &modification)” .The tenderer should quote in mentioned format attached in Annex-I only. The detailed scope of work, terms and conditions are as below. **It is requested to you to submit budgetary offer in sealed envelope to the office of Mgr (US) on or before 22/09/2021 at 1700 Hrs. Please go through detailed BOQ .Please submit offer as per BOQ only.**

**A .Scope of Work:**

**I .The Repairs & modification of roof top solar system shall include the following work**

1. The repair of existing 822 Kwp solar system at various locations at JNPT .The roof top system is 5 Years old. The BOQ is enclosed for details of repairs to be carried out.
2. Water cleaning system for solar panel cleaning shall be provided at 11 locations as new work /modification with proper design.
3. Basic SCADA for remote monitoring through GPRS/3G/4G/ cable internet shall be provided to all 11 locations as new work /medications.

4. All the parts shall supplied as per attached BOQ and from reputed makes and latest technology with proper standard warranty provided by manufacturer.
5. The work includes supply, installation testing and commissioning as entire system, hence even though all small items consumables not mentioned in BOQ the same shall be considered by submitting offer.
6. All the tools and tackles required for repairs/modifications shall be brought by the contractor. No tools and tackles will be provided by JNPT. The tenderer must possess necessary tools and equipment's of adequate rating for carrying out the maintenance activities. This includes earth resistance tester, digital multimeter, digital cable insulation tester, PV Tool for module and string testing, necessary laptop and software for providing remote access to O.E.M's
7. Transportation for reaching at site shall be at Tenderer cost.
8. All required manpower for completing this entire work shall be at the contractor cost. JNPT will not provide any manpower except for jnpt supervision and accesses to locations.
9. Contractor shall be responsible to complete the work as per all standards and the system shall be handed over in working condition after repair.
10. The workmanship of works not herein fully specified shall be carried out as per relevant IS specifications and in absence thereof shall be as per the best standard practice as approved by the Engineer-In-Charge.
11. The Contractor shall be responsible for insurance of workers deployed by him for above said work. He shall comply with all

applicable labour laws / regulations and indemnify JNPT for any obligation in this respect.

**II. Comprehensive Maintenance contract of roof top solar system shall include the following**

1. Solar Modules and Solar Inverter warranties are not covered in CMC.
2. The following products if damaged during the CMC period are covered in the Comprehensive Annual Maintenance contract:
  - a. Solar DC Cables
  - b. MC4 Connectors
  - c. MCB's and MCCB's for Solar Plant
  - d. Solar Module Mounting Structure
  - e. Earthing pits.
  - f. Lugs, terminals and electrical and mechanical hardware items.
3. The following items are covered under manufacturer's (O.E.M) warranty and are not covered under this contract.
  - a. Solar Grid Inverters
  - b. Solar Modules
  - c. Surge protection Devices provided on the AC and DC ,Supply of AC & DC SPD's are not covered in the Comprehensive AMC.
4. However the regular inspection of Solar modules & Inverter, providing necessary feedback on the issues from time to time to the O.E.M and will follow up on the warranty claim, if any, with the O.E.M on behalf of the JNPT. If there is any replacement of the Solar Modules and Inverter by the O.E.M, labour charges for replacement are covered under Comprehensive AMC.
5. The annual maintenance contract will include the following:
  - a. Cleaning of Solar Modules - Cleaning cycle , once in 15 days
  - b. Visit of of Service engineer - Once every 4 months for preventive maintenance

- c. Vist of Service engineer/ team- On call during the period of contract whenever there is a breakdown/ repair maintenance to be carried out.
- d. Attending to issue pertaining to any Solar equipment failure and coordinating the same with O.E.M Service team to resolve the same.

6. The expected activities and the periodicity for carrying out the activities during the CMC Contract will be as under:

| Sr. No | Activity  | Periodicity         |
|--------|---|---------------------|
| 1.     | Visual Inspection of Modules  | Once a year         |
| 2.     | Checking string voltages of modules   | Twice a year        |
| 3.     | Inverter cleaning and performance check   | Once in Four Months |
| 4.     | Checking DC SPD's   | Once in Four Months |
| 5.     | Checking the DC cable connections from Modules to Inverter  | One in a year       |
| 6.     | Checking and tightening of AC Connections at inverter input   | Twice a year        |
| 7.     | Checking and tightening AC Connections at Inverter Interaction Panels, Grid Interaction Panel               | Thrice a year       |
| 8.     | Checking AC SPD's in IIP's and GIP's  | Thrice a year       |
| 9.     | Cleaning of IIP's and GIP's   | Thrice a year       |
| 10.    | Checking voltages and currents at all Panels  | Once a year         |
| 11.    | Checking and tightening connections for structural/ body earthing, lightening arrestor, inverter and panels | Once a year         |
| 12.    | Checking/ tightening of Modules bolts   | Once a year         |

|     |   |                |
|-----|---|----------------|
| 13. | Random Check of Module Mounting structure | Once a year    |
| 14. | Earth pit n inspection and testing        | Once a year    |
| 15. | Overall performance of the Solar PV Plant | Quarter report |
| 16. | Plant Fitness report                      | Yearly         |
| 17. | Any unscheduled repair maintenance        | On call.       |

## **B. Terms & Conditions:-**

**1. Material & labor:** - The contractor shall arrange all the required material like tools, tackles, gas cutting set etc. adequate labor for carrying out the works and shifting the scrap material to the main store in JNPT. The contractor shall arrange all the required material like tools, tackles, gas cutting set etc. adequate labor for carrying out the works and shifting the scrap material to the main store in JNPT. The tenderer must possess necessary tools and equipment's of adequate rating for carrying out the maintenance activities. This includes earth resistance tester, digital multimeter, digital cable insulation tester, PV Tool for module and string testing, necessary laptop and software for providing remote access to O.E.M's.

**2. Contract period:** Comprehensive maintenance contract period is for two year.

**3. Payment Terms:** The contractor shall submit the invoice in duplicate. Payment shall be made through e-payment against invoice within 30 days from the date of receipt of the invoice.

The CMC payment will be done quarterly against submission of Invoice.

**4. Work Completion Time:** All works as per scope of work related to "Repairs & Modification of roof top solar system " at 11 Locations will be 2 Months from the date of award of work.

**5. Liquidated damages:** 1% per week maximum 5% of total contract value of Repairs & modification for delay in completion of work.

**6. Security Deposit cum Performance Guarantee**

**a. Project (for Repairs & Modification Part) :**

Within twenty one days of the receipt of the notification of the award of contract from the Employer, the successful tenderer shall furnish to the Employer a security deposit in the form of a Bank Guarantee of a Scheduled Bank, having its branch at Mumbai for an amount equivalent to 10% of the contract award **price including GST** (for Repairs & Modification of solar roof Top) as per draft annexed hereto guaranteeing the performance of the contract. The BG shall be valid for a period of 15 months from completion of installation and commissioning work with issue of completion certificate including 3 months claim period. And may be extended further as per requirement of JNPT. Failure of the successful tenderer to lodge the required Bank Guarantee shall constitute sufficient grounds for the termination of the contract and enforcement of Bank Guarantee for the tender security

**b. For CMC:**

After successful completion of warranty period of one years the tender shall furnish to the Employer a performance guarantee in the form of a Bank Guarantee of a Scheduled Bank, having its branch at Mumbai for an amount equivalent to 10% of the Annual Comprehensive Maintenance contract award price (CMC OF solar syatem). The BG shall be valid for a period of **15 months from completion of warranty period of one year of Repair & Modification.** The BG of CMC shall be submitted before expiry of validity period of BG of Repair & Modification Part

**7. Penalty:** The penalty for the delay in not cleaning solar panels as per schedule shall be 15 Days .The penalty for delay will start after 20 days for delay Rs.100 per days /per location.  
**Maximum Rs.2000/- per Location.**

8. **Tax Deduction:** Deduction of Income Tax, work contract tax and apportionment of service tax shall be made at source from any amount payable to the Contractor as per the relevant provisions of the applicable in accordance the prevailing government rules.
9. **Labour laws:** The contractor shall be responsible to comply with all requirements of various labour & commercial laws and rules applicable to this contract.
10. **Access to Site:** JNPT is a custom bounded area. The Contractor shall comply with all the rules and regulation of the authorities such as Customs and CISF (Central Industrial Security Force) in relation with the entry passes for men, material, machinery, tools & tackles etc.
11. **Confidentiality:** Except with the prior written consent of JNPT, the contractor and its personnel shall not, at any point of time, communicate to any person or entity any information acquired in the course of execution of the work under this.
12. **Protection of Environment:** The contractor, during execution of work, shall take all precautions to prevent spillages/leakages, fire etc. and protect environment from pollution. The contractor shall use proper trays to prevent contamination of land/water due to spillage/leakage of oil, wherever applicable. They shall clean the work area time to time and shall not leave any material at the work spot after completion of work. The waste generated **out of the work shall be disposed off as per prevailing Laws/Rules/Regulations.**
13. **Keeping the site clean:** The contractor shall keep the site free at all times from all obstructions at his own costs and expenses
14. **Safety:** The Contractor shall be responsible for safety of his personnel deployed at site during execution of the work. The Contractor shall be solely responsible for any damage in case occurs to any port property during the execution of the works.

**15. Correspondence:** All the correspondence related to this contract shall be addressed to:

Manager ( US ),  
M&EE Department  
JawaharlalNehruPort Trust,  
Sheva, Navi Mumbai - 400 707.

Thanking you,

Yours faithfully

**Pravina Goroji Karandikar**

**Dy .Manager(US )**