

RFQ No.RAJBOS0092 – Pre Qualification Criteria

1. Technical Assessment:

Bidder should have experience of having successfully completed similar works during the last 5 years from tender of tender opening:

Similar works means bidders should have carried out supply, installation and Testing of PV-Module cleaning systems or systems involving Water washing or cleaning systems. These systems should essentially involve the following activities:

- a.) Laying of Pipe line along with accessories.
- b.) Installation of Pump station.
- c.) Pressure testing of the entire system.

Or

Bidder should have executed BOS/ O&M works for Solar PV Plants involving both Supply and I&C.

As evidence to this, copy of such purchase/work orders and their performance report/completion certificate as a proof for successful execution of the order is to be submitted for either of the two criteria.

Note: Work/order completion has to be in the last 5 years from date of tender opening–Work Order /Purchase order placement date can be earlier than that.

2. Financial Assessment:

Average annual financial turn over during the last 3 years, ending 31st March of the previous financial year, should be Rs 30 Lakhs. CA Certificate for average turnover to be submitted.

BHEL reserves the right to verify the documents submitted by the contractor. During verification, if it is found fake/forged/manipulated, suitable penal action shall be taken against bidder as per extent guidelines of BHEL for suspension of business dealing.

Suspension of business dealings with Suppliers/Contractors shall be dealt as per the guidelines available on BHEL website www.bhel.com.

In case the Tenderers not fulfilling the above conditions, the offer is liable for rejection.



Technical specification for Design, supply and I&C of Module
Cleaning System for
50MW Solar PV power plant for MAHAGENCO at Koudgaon,
Distt.: Osmanabad (Maharashtra)

PS-439-1315

REV NO: 01

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Design, supply and I&C of Module Cleaning System for
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(Maharashtra)

Revision details :R 00

Prepared
VKC

Approved
PM

Date
02.03.2022



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1.0. INTRODUCTION:

Bharat Heavy Electricals Limited (BHEL), Electronics Division, Bangalore is setting up a 50MW Grid-connected SPV Power Plant for MAHAGENCO. This 50 MW SPV Plant is located at Koudgaon, Distt. Osmanabad (Maharashtra). This specification defines the scope of the vendor for Design, Supply and I&C for the Module Cleaning system for the Entire Solar Plant.

Dust and Dirt particles accumulate on the surface of the PV-Module and this can reduce the optimal performance of the Solar Modules and hence Periodic cleaning of PV Modules is mandatory for the optimum performance of the Solar Plant. Periodic Cleaning of PV-Modules is carried by O&M Contractor of the Plant.

2.0.BRIEF SCOPE OF VENDOR:

2.1.Validation of design and modification of detailed BOM, if required of Module Washing system for 50MW SPV Plant in line with design parameter and tentative layout.

2.2.Supply of all the module washing system parts as per the approved BOM.

2.2.1. Supply of vertical multistage pumps for RCC tanks constructed by BHEL.

2.2.2. Piping from Pumping station to storage tanks at all 10 Inverter platforms as per tentative Layout

2.2.3 Supply of storage tanks at all 10 inverter platforms location as per Tentative BOM/Layout of module washing system

2.2.4 Module washing Piping network from storage tanks to PV modules.

2.2.5 Supply of suitable capacity of Booster Pumps at each inverter location as per Layout.

2.2.6 Supply of all types of valves, flow meter, gauges clamps etc. suitable for module cleaning system as per design.

2.2.7 Supply of Hose pipes of 50 Meters for all blocks.

2.2.8 Supply of recommended spares and tools & tackles for 10 years O & M period

2.2.9 Demonstration of Operation and Maintenance of MCS

2.2.10 Unloading and storage of Material

2.2.11 Security of Material in storage

2.3. Supply of 2 nos. vehicle mounted mobile cleaning unit.

2.4.I&C for the module washing system as per tentative BOM.



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3.0.BHEL SCOPE:

- a) Periodic Cleaning of PV-Modules
- b) Supply of water (Construction of Bore well and RCC Tank)
- c) Space for storage of material at site

4.0.ANNEXURE TO THIS DOCUMENT:

- a) Tentative current Array layout for SPV Plant
- b) MMS-GA.
- c) Approved design parameters for the project
- d) Tentative BOM as per conceptually approved design
- e) Tentative approved layout as per current array layout
- f) Approx. nos. of PV module for cleaning: 174300 (No of Block -10)

5.0.DETAILED SCOPE OF VENDOR:

- I. The vendor shall design and install an effective module cleaning system. As per existing layout, the module cleaning system is designed and tentative BOM prepared and approved. It is expected that there is no change will be done in approved design. However, vendor is requested to check the BOM w.r. to the latest array layout in line with conceptual design approved for the project. Final BOM will be frozen after freezing array layout. In case, there is any change in design due to array layout change, the same shall be incorporated in the existing design and re-approval from end customer shall be asked. Final Drawings/BOM shall be submitted for these arrangements to BHEL/End Customer for approval.
- II. Vendor will provide two vehicle mounted mobile unit for module cleaning & washing in the Solar Power Plant. In both units, the washing shall be with pressurized clean water (2 Bar). Vehicle mounted mobile unit shall be equipped with Tank Jet Systems and 100 Mtr Flexible Hose Pipe. The System Arrangement of Water Filling in Mobile Unit shall also be provided. The tank capacity shall be minimum 5000 Litres and the vehicle used for carrying the tank should have easy mobility in the gaps between the rows of MMS tables.
- III. The water for cleaning to be arranged through 4 (four) Bore wells to fill the underground RCC water tank provided by BHEL. The module cleaning system shall include supply and installation of multistage pump over RCC tank, supply and installation of booster pumps, ground mounted PVC tank (s) of required storage capacity and pipe laying with best optimized network of HDPE pipe, conforming to applicable ASTM/IS, in each block of SPV panels. Opening from the HDPE pipe with manual isolating valves shall be provided at regular interval as per module washing system layout.
- IV. System shall also include valves (NRV, valve, Ball valve, Gate valve, PRV, scour valve etc.), Water hammer arrester(s) or ARV, pressure gauge, Digital flow meter, GI