	<p style="text-align: center;">EXPRESSION OF INTEREST</p> <p style="text-align: center;">-EMPANELMENT OF VENDORS/CONTRACTORS FOR SOLAR PV PROJECTS BALANCE OF SYSTEM (BOS) -SUPPLY,E&amp;C AND OPERATION AND MAINTENANCE WORKS</p>	462/SC&PV/02
		Rev No: 00
		PAGE : 1 OF 5

## Preamble

BHEL-EDN , Bangalore, a UNIT of Bharat Heavy Electricals Ltd , MAHARATNA public sector is in the field of setting up grid connected Solar PV plants in various parts of the country as an EPC solution. Grid connected Solar PV plants totaling to a capacity of 150-200MW are being targeted by BHEL per annum.


BHEL-EDN desires to empanel reputed vendors/Contractors who have capability to engineer, supply and also execute the site E&C works including O&M of a Solar PV Plant of size 50MW and above in a single location.

The vendors /Contractors must be a firm or company based in INDIA.

The projects can be anywhere in INDIA. Hence the bidders are required to be aware of various statutory, regulatory requirements of state/center and are required to follow the various stipulations called for during the execution of project. The details of works generally to be carried out are as per **Annexure-1**.


## Requirements

1. The Vendor/Contractor desiring for empanelment should have experience in the large electrical works of Thermal/Hydro/Gas plants/Industrial units/Switchyards/ grid connected solar PV power plants. Vendor/contractor shall have minimum experience of two (2) years in the works listed above as on the date of this EOI opening date. The vendor/contractors must furnish details about their company particulars regarding the operation, facilities, manpower, number of projects executed since inception and other experiences with necessary credentials in support of their claim by furnishing completion certificates from the customer certifying the Scope of works and the time lines for various activities including the work order released by the customer for the projects executed.
2. The vendor/Contractor should preferably have their own Tools, Plant and machinery for carrying out the civil, mechanical and electrical works (a typical list enclosed in **Annexure-2**) and should have capability for mobilizing additional Tools, Plant and machinery at short notice for simultaneous works at various fronts to meet the short schedule of works. The contractor shall have on their roll qualified Engineers and supervisors of different discipline who shall be monitoring the works carried out by skilled and unskilled labor force. The contractor shall have capacity to arrange sufficient labor so that the project schedule is not affected in any way.
3. The vendor/Contractor shall furnish the details of manpower and machinery owned by them. A typical activity plan for executing the BOS E&C works in a time line of maximum 4 months from the zero date for 50MW Grid connected Solar PV Plant shall be submitted. Manpower planned to be employed, L2 and L3 schedules (micro schedule) and machinery required to be employed shall be furnished. The vendor/Contractor may also furnish the details of the same in the projects executed by them if any for the above exercise.
4. The vendor/Contractor should have adequate financial strength to carry out and complete all the works simultaneously In 2 project sites of BHEL each in maximum 4 months without any stoppage. The vendor/Contractor shall submit the financial information particulars for the previous 3 years or from the date of commencement operation whichever is later in BHEL format enclosed.

	<p style="text-align: center;"><b>EXPRESSION OF INTEREST</b>  <b>-EMPANELMENT OF VENDORS/CONTRACTORS FOR SOLAR PV</b>  <b>PROJECTS BALANCE OF SYSTEM (BOS) -SUPPLY,E&amp;C AND</b>  <b>OPERATION AND MAINTENANCE WORKS</b></p>	462/SC&PV/02
		Rev No: 00
		PAGE : 2 OF 5

Vendor/Contractor should have achieved annual average financial turnover of Rs 50 crores per annum during the above period as evidenced by the audited financial results.

5. The vendor/Contractor shall be required to engineer and supply the requirement based on the customer specification and submit the drawings ,datasheets and calculations for BHEL approval .BHEL in turn may require the vendor/contractor support in getting Customer approval for the design drawings, calculation etc. The vendor/contractor shall have design tools, software required for this purpose. Sufficient trained manpower shall be on the roll preferably. Contractors who do not have these facilities but have outsourced the same shall furnish the details of the partner firms for various activities outsourced.
6. The firm shall have on their roll a planning team for project monitoring and for logistic support. The vendor/Contractor shall also have a team of professionals in Quality and HSE on their roll for overseeing the site works in multiple location at times. The site team will coordinate with BHEL team at site and ensure that all the works are certified by the customer meeting the specification requirement. The vendor/contractor may furnish their quality plan/standards followed by them for various works including HSE practices/plan.
7. The vendor/Contractor shall bring out their concurrent commitments on various projects and the status of their resource usage to be indicated.
8. Vendors who are in the field of design but having strategic partners with BOS E&C contractors for carrying out activities at PV site are also eligible to participate. Details of the strategic partnership, number of projects executed, value and end customer certifications are to be submitted .All the above requirements (Sl No 1 thru 7) are also to be complied with. Documentary evidence of such partnership to be furnished for BHEL scrutiny. All the above requirements (Sl No 1 thru 7) are also to be complied by the consortium.
9. BHEL will be executing the projects based on customer specifications, tender terms and conditions. The same will be applicable to the vendor/contractor.
10. The vendor/Contractor may indicate in their work experience the various terrains/ground/soil conditions in which they have carried out various works.
11. The vendors/contractors may indicate their preparedness to participate in the tendering process thru e-procurement mode .
12. Vendor/Contractor to furnish all details in BHEL furnished format covering the following details.
  - a) Company profile & organizational information
  - b) Ownership information
  - c) Registration particulars
  - d) Manpower
  - e) Other particulars.
  - f) Bank details of the Company
  - g) Quality Systems
  - h) Financial Information for the previous 3 years.

	<p style="text-align: center;"><b>EXPRESSION OF INTEREST</b>  <b>-EMPANELMENT OF VENDORS/CONTRACTORS FOR SOLAR PV</b>  <b>PROJECTS BALANCE OF SYSTEM (BOS) -SUPPLY,E&amp;C AND</b>  <b>OPERATION AND MAINTENANCE WORKS</b></p>	<p style="text-align: center;">462/SC&amp;PV/02</p> <hr/> <p style="text-align: center;">Rev No: 00</p> <hr/> <p style="text-align: center;">PAGE : 3 OF 5</p>
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- i) Resources owned by the company-Formats A),B) and C)
- j) Work Experience in the field of BOS E&C works of a solar project or similar works in last 5 years as on the date of opening of EOI.

All columns are to be filled up in the space provided for. Separate sheets may be attached if the space provided is insufficient or if additional information to be given. The formats shall be downloaded from [www.bhel.com](http://www.bhel.com). The link furnished may be used. [http://www.bhel.com/vender registration/pdf/Guidelines to Contractors SEARP2010Amdt 04for web.pdf](http://www.bhel.com/vender%20registration/pdf/Guidelines%20to%20Contractors%20SEARP2010Amdt%2004for%20web.pdf) The response to this EOI to be addressed to AGM-SC&PV/MCSE , BHEL, Electronics Division ,Mysore Road,Bangalore-560026. The last date for receipt of applications in sealed cover is 09/02/2015 ,15:30Hrs.


### **EVALUATION**

1. BHEL-EDN will be evaluating the Vendor/Contractor on all the parameters above and shortlist based on a ranking methodology. BHEL shall intimate the shortlisted vendors/contractors for further discussions, presentations before empaneling. BHEL decision on this will be final. BHEL at their discretion shall inspect the vendor/contractor works/premises/sites for evaluation.
2. Further procurement and tendering process shall be as per BHEL policy and guidelines .
3. The empanelment will be for a period of 3 years. During this period the vendor/contractor performance will be evaluated on a continuous basis on works executed in BHEL project sites. BHEL reserves the rights to disqualify a vendor/Contractor based on their adverse performance levels if any during this period.
4. This expression of Interest is not an agreement and is not an offer or invitation to enter into an agreement of any kind with any party by BHEL.

### **ANNEXURE-1**

#### **BOS E&C WORKS WITH MATERIAL SUPPLY AND WORKS FOR PV PLANT (Typical list)**

1. Establishing site office, temporary storage area for BHEL supplied items.
2. Unloading and managing the site stores.
3. Supply of Transformers for Auxiliary power.
4. Supply of Signal cables, data cables and control cables as per specification.
5. Supply of OFC Cable, Termination kits, Ethernet Switches etc.
6. Supply of earthing materials like copper flats including earth pit at various locations.
7. Supply of ESE type LAS
8. Supply of UPS,DC Chargers
9. Supply of ACDB,DCDB
10. Supply of Batteries for UPS and DC Charger.
11. Supply of Transmission line items as per scope.
12. Supply of SCADA, Weather monitoring System, Lightening arrestors.
13. Supply of Fire protection system and equipment.

	<p align="center"><b>EXPRESSION OF INTEREST</b>  <b>-EMPANELMENT OF VENDORS/CONTRACTORS FOR SOLAR PV</b>  <b>PROJECTS BALANCE OF SYSTEM (BOS) -SUPPLY,E&amp;C AND</b>  <b>OPERATION AND MAINTENANCE WORKS</b></p>	462/SC&PV/02
		Rev No: 00
		PAGE : 4 OF 5


14. Supply of switch yard items like CT,PT's, terminal boards, isolators, switches, switchgears, gantries, Transmission towers etc as per scope
15. Erection works of All transformers, VCB, Invertors, HT panel, SCADA, SMB, Switch yard equipment and other items as per scope of the PV plant.
16. All cabling works of the Solar PV plant –Interconnections from PV module array to Power evacuation at Switchyard.
17. All cabling related trench works/cable tray erection in the field
18. All civil, mechanical and electrical works of Earth pit in the plant.
19. Electrical works of Module water wash system, Lighting and Illumination system of the plant.
20. Erection and commissioning of weather monitoring system ,lightening arrestor
21. Erection and commissioning of UPS, DC Charger system including ACDB, DCDB.
22. Erection and commissioning of fire protection system.
23. Earth mat construction.
24. Commissioning assistance to invertors , HT panel, Transformers supplied by other vendors.
25. Obtaining Clearances from statutory agencies and government bodies for the PV Plant readiness for operation and commissioning.
26. Security arrangement of the entire PV Plant for the entire duration from construction to final handover to customer.
27. PG test Co- ordination and assistance to BHEL in conductance of the PG Test.
28. Operation and maintenance of the PV Plant as per scope.
29. De weeding and other organic growth within the plant before commissioning of the PV plant and during the O&M period.

The above list is indicative and may vary as per site location, project requirement and scope division between contractors.

## Annexure-2

Indicative list of Equipment, tools and tackles, Infrastructure to be owned/arranged.

1. Hydra
2. JCB
3. Tractor
4. Auguring machine
5. Cable unwinding Machines, rollers etc
6. Termination kits up to 33KV
7. Tools for crimping, termination various cable sizes.
8. Electrical measuring Instruments
  - a) Megger-1KV
  - b) HV Tester-10KV
  - c) Cable earth fault locator

	<p style="text-align: center;">EXPRESSION OF INTEREST</p> <p style="text-align: center;">-EMPANELMENT OF VENDORS/CONTRACTORS FOR SOLAR PV PROJECTS BALANCE OF SYSTEM (BOS) -SUPPLY,E&amp;C AND OPERATION AND MAINTENANCE WORKS</p>	462/SC&PV/02
		Rev No: 00
		PAGE : 5 OF 5

- d) Logic probe
- e) Modbus communication check kits
- f) Digital Multi meter
- 9. Tong Testers
- 10. Digital power meters
- 11. OFC termination kit, Splicing kits
- 12. Primary /secondary injection kit
- 13. Portable transformer oil filtration unit
- 14. Earth resistance measurement kit
- 15. All types of lugs, glands
- 16. Transmission line stringing equipment.
- 17. Hydraulic jack – for MMS tilting
- 18. DG Sets
- 19. Cable jointing kit and associated tools.
- 20. Welding equipment
- 21. Flood lights
- 22. CCTV arrangement for surveillance