

# **Bharat Heavy Electricals Ltd.,**

(A Government of India undertaking)

## **Solar Business Division**

Prof C N Rao Circle, Opp IISC, Malleshwaram, Bangalore-560012

### **Global Tender for Pre-bid tie up**

Sealed Quotations are invited under two part bid system from manufacturers / suppliers of Mono crystalline Silicon PV Modules for purpose of pre-bid tie up for participating in 500 MW Rewa Ultra Mega Solar Limited (RUMSL) Solar Park tender at Neemuch in Madhya Pradesh.


RFQ NO and date	<b>SPKSCPV070 dated 12.04.2021</b>
RFQ due date & time	27.04.2021 up to 14.00 hrs (IST)
Date, Time & Venue of Part-I Bid Opening	27.04.2021 after 14.30 hrs (IST) BHEL EPD/SBD Tender box (Reception of EPD/SBD) C/o. AGM/MM M/s BHARAT HEAVY ELECTRICALS LTD., SOLAR BUSINESS DIVISION Prof CNR Rao Circle, IISc Post, Malleshwaram, Bangalore- 560 012
Date, Time & Venue of Price Bid opening	Will be intimated later for technically & commercially qualified bidders
Address for Communication & Contact Person in BHEL	Mr. S.Pankaj Kumar / Mr. Vivek Kumar Yadav, MM Department, BHEL Solar Business Division, Email: <a href="mailto:spankaj@bhel.in">spankaj@bhel.in</a> , <a href="mailto:vivekyadav@bhel.in">vivekyadav@bhel.in</a> Telephone number: +91 8126333426 (M) +91 9449039232 (M)

Name and address of the Independent External Monitor for this tender	Shri Arun Chandra Verma, IPS (Retd.) <a href="mailto:acverma1@gmail.com">acverma1@gmail.com</a> Shri Virendra Bahadur Singh, IPS (Retd.) <a href="mailto:vbsinghips@gmail.com">vbsinghips@gmail.com</a>
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Any Deviations from or additions to the "General Conditions of Contract" or "Special Conditions of Contract" require BHEL's express written consent. The General Terms of Business or Sale of the Bidder shall not apply to this tender.

For further details please please visit our web site: [www.bhel.com](http://www.bhel.com), or <https://eprocure.gov.in/epublish/app>. All corrigenda, addendum, amendments, time extensions, time extensions, clarifications, etc (if any) to the Tender will be hosted on these websites only. Bidders should regularly visit websites to keep themselves updated.

Note: Registration procedure for items required by BHEL is always open at <https://suppliers.bhel.in>. Prospective suppliers (including MSEs and owned by SCs / STs (may visit this site and apply for registration in the respective Unit.

	<b>PREQUALIFICATION CRITERIA GROUP: PHOTOVOLTAICS</b>	<b>SOLAR PHOTOVOLTAIC MODULE</b>	
		Spec. No	P5-439-432
		Rev. No	00

Sl. No	Particulars	Bidder's confirmation
1.	The offer shall be quoted only by the original PV module manufacturer with module manufacturing capacity of 400 MW / annum.	PV module supplier name: Manufacturing Plant Location: Manufacturing capacity / annum : Website:  (Please mention name of PV module manufacturer, capacity, complete address & contact details with email address. Please enclose documentary proof for PV module manufacturing capacity)
2.	The bidder should have manufactured and supplied the Solar PV Modules of cumulative installed capacity of 50 MWp or above using 300 Wp or above rating of modules and any source of indigenous or imported PV cells in any one of the last three financial years (FY 2018- 19, 2019- 20, 2020- 21).	Yes / No Enclose client certificate/and/or copy of Letter of Award in respect of above

**Note A :**

i. Pre-qualification will be carried out based on the details furnished by the vendor / purchase orders, documents from their customers/ inspection of the company/product, if required by BHEL and at its sole discretion.

ii. The pre-qualification criteria are mandatory requirements and the technical bids will be considered only if all the above Pre-Qualification Criteria are met.


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**TECHNICAL SPECIFICATION  
FOR  
SUPPLY OF MONO CRYSTALLINE SILICON PV MODULES  
NEEMUCH- 500 MW PROJECT**

<b>REVISION DETAILS: (00)</b>	<b>PREPARED MDS</b>		<b>DATE  16.03.2021</b>
	<b>APPROVED SNB</b>	<b>ISSUED ENGG</b>	

 A4-11	<b>PURCHASE SPECIFICATION GROUP: PHOTOVOLTAICS</b>	Spec. No	PS-439-432
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### SOLAR PHOTOVOLTAIC (PV) MODULES

Solar photovoltaic (PV) modules consists of solar cells connected in series/ parallel configurations to deliver a standard required power output. The PV cell circuits are sealed in an environmentally protective laminate, and are the fundamental building blocks of PV systems.

#### 1) TECHNICAL REQUIREMENTS:

Sl. No	Item	Remarks
1	PV Module Configuration	Mono crystalline (PERC) photovoltaic module with 72 nos of cells in 12X6 series configuration or 144 nos of cells (Half cut) in 24 x 6 configuration. The module construction and bill of material shall be as per vendor's approved IEC certification. <b>Please enclose:</b> <i>i. Module overall assembly drawing with mounting holes</i> <i>ii. Data sheet with typical electrical characteristics, I-V curves, temperature coefficients etc.</i>
2	Power Output	390 Wp or above, in 5 Watt band only. No negative power tolerance will be accepted.
3	System Voltage	Modules shall be suitable for 1500V DC System Voltage application.
4	Efficiency	19% (min) under STC
5	Fill Factor	0.75 (min)
6	Temp coefficient of Power Pmax (%)	-0.40 % / °C or better
7	Operating Conditions	SPV module shall perform satisfactorily in humidity up to 85% with ambient temperatures between -10° C & + 65° C, and shall withstand adverse climatic conditions
8	IEC Certifications	The PV modules supplied shall follow IEC standards as below. 1. IEC 61215-1:2016 (Design Qualification and Type Approval-Part 1) 2. IEC 61215-1-1:2016 (Design Qualification and Type Approval-Part 1-1) 3. IEC 61215-2:2016 (Design Qualification and Type Approval-Part 2) 4. IEC 61730-1:2016 (Safety Qualification – Part 1) 5. IEC 61730-2:2016 (Safety Qualification – Part 2) 6. IEC 62804-1:2015- (Test methods for the detection of PID - Part 1) 7. IEC 61701:2011 (Salt Mist Corrosion testing) 8. IEC 62716:2013-Edition 1 (Ammonia Corrosion testing)
		Vendors shall use Bill of materials for manufacture of PV modules as per subset of approved CDF of IEC Certificates. <b>All IEC Certificates to be submitted with tender.</b>

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