

	GENERAL & TECHNICAL SPECIFICATION FOR UPS	Doc. No.: REG2223-20220021	
Rudrapur	GROUP : RENEWABLE ENGERGY GROUP	Rev no	02

**PROJECT: 6.5 MW<sub>p</sub> (DC)/ 5 MW (AC) GRID  
INTERACTIVE SOLAR POWER PLANT AT NALANDA  
UNIVERSITY, RAJGIR - BIHAR.**

**GENERAL & TECHNICAL SPECIFICATIONS  
FOR  
2 KVA ONLINE UPS WITH BATTERY BANK**

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**(A) Scope of supply with General requirement:**

- i. **Scope:** “Supply, installation & commissioning of 2KVA Uninterrupted Power Supply with 4680 VAH back up capacity (through external battery bank with metal rack) alongwith 2 Year warranty”.
- ii. Prices quoted shall be on F.O.R site basis (NALANDA UNIVERSITY – RAJGIR, BIHAR -803116) & shall be firm till completion of delivery. Consignee address to be provided alongwith dispatch clearance.
- iii. **Delivery schedule:** Delivery schedule shall be :-
  - (a) **Supply:-** within 04 weeks from the date of issue of purchase order.
  - (b) **Installation & Commissioning:-** 01 week from the date of clearance given for Installation by BHEL. BHEL shall issue clearance within 45 days from date of receipt of material at site.
- iv. Following documents are required during technical evaluation:-
  1. Technical Data sheet (shall be submitted by bidders with technical offer).
  2. Test Report, if any.
- v. **Inspection :-** Physical Inspection of the material shall be done by BHEL’s Representative/TPI at supplier’s works, if required.
- vi. **Despatch clearance:-** MDCC (material despatch clearance certificate) for material shall be issued after inspection & compliance of comments (if, any) made by BHEL/TPI. No material shall be dispatched without obtaining MDCC from BHEL.
- vii. **Extension of Delivery Time :-** Extension in delivery schedule is permitted only in such cases wherein causes for the delay are not attributable to the supplier. In such case, supplier make a request to BHEL for the extension of delivery time with the all supporting documents. Extension of time will be given only if the facts given by supplier are found to be true/justified and on sole discretion of BHEL.
- viii. Bidders shall sign & stamp each page of tender document and submit with the technical offer as an acknowledgement that each and every page of tender document has read and understand by the bidders.
- ix. Offer shall be evaluated on overall basis.

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**General Specification:-** UPS must following key features:-

1. High frequency and double conservation technology.
2. High End IGBT & micro controller based.
3. Wide input voltage range.
4. Advance battery magangement & battery charging in UPS off Mode.
5. RJ-45/Ethernet port with RS232 communication (with monitoring software – Internet connection shall be provided by BHEL).
6. Short circuit & overload protection.
7. Over tempreature protection, EMI/RFI noise filter.
8. LCD/LED Display
9. Generator compatible
10. Diffirent output voltage setting.
11. Protection from DC Fan failure & In built over voltage cut-off device.
12. Output frequency fixed at 50 Hz or can be synchronized with input frequency.
13. Static by enable & disable, outlet programable.

**Technical Specification:**

Itmes shall have the following characteristics:

**(I) UPS**

S.No.	DESCRIPTION		
<b>Input</b>			
1.	Rated Capacity	:	2KVA
2.	Input Voltage Range (Load<50%)	:	120 -295 V (± 5V)
3.	Input Voltage Range (Load>50%)	:	160-295 V(± 5V)
4.	Frequency	:	50 Hz ± 3%
5.	Phase	:	Single Phase with ground
<b>Output</b>			
1.	Output Voltage Range	:	230 Volt AC (± 5V)
2.	Frequency Range	:	50% (± 3)
3.	THD (linear load)	:	≤ 2%
4.	THD (Non Linear load)	:	≤ 4%
5.	Overload Capacity	:	>110% for 5 Sec
6.	Waveform	:	Pure Sinewave
7.	Efficiency	:	Above 85%
8.	Power Factor	:	0.9
<b>Others</b>			
1.	Coomunication Port		RJ 45 / ethernet Port

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2. Certification : with RS 232 (with monitoring software)  
Latest version relevant IS/IEC/EN.

**(II) BATTERY BANK**

**Battery**

1. Type : Sealed, Maintenance free with proper enclosure (SMF)
2. Battery Arrangement : External
3. Voltage : 12 volt
4. Back up capacity : 4680 VAH
5. Charging Current : Min. 8 Amp
6. Battery Bank Input : 72 Volt

**(III) METAL RACK**

1. Material : Mild Steel (with slotted angle)
2. Paint : 2 coat of epoxy paint with coat of primer

Note:- Bidder's shall submit design and drawing of metal rack for the BHEL's approval within 7 days after receipt of PO. installation & operation manual in two copies with the consignment.

**(B) INSTALLATION & COMMISSIONING:-**

Supplier shall depute their service engineer at site for installation & commissioning of the UPS system at free of cost.

**(C) WARRANTY AND GUARANTEE:-**

The Bidder shall warrant that the goods supplied under this contract are new, unused, of the most recent or latest technology and incorporate all recent improvements in design and materials. The bidder shall provide warranty/guarantee of equipment at site covering the rectification of any defect in the material including spare parts OR replacement for a minimum period of 2 years from the date of commissioning of UPS system at site.

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The successful bidder has to transfer all the Guarantee/ Warranty of the different components to BHEL. Undertaking from bidder and warranty certificate shall be provided along with the supplies.

Any cost/arrangement associated with “to & fro” dispatch of faulty item(s) including transit insurance shall be borne by bidder without any cost implication on BHEL.

During the warranty period bidder has to provide Name, address, mobile number and email address of the service Centre to be contacted in case of failure or complaint.

**(D) PACKING & FORWARDING:**

Each package shall be marked with warning inscriptions: Top, do not turn over, category of cargo, hazardous, chemical, etc.

Special packing for batteries must be ensured to arrest spillage of chemical & hazardous components.

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**ANNEXURE-1**

**LIST OF MAKE**

S.NO.	ITEM DESCRIPTION	ACCEPTED MAKE
1.	Online UPS (2KVA 1ph: 1 ph 72 volt)	<ul style="list-style-type: none"> <li>• MICROTEK</li> <li>• LUMINOUS</li> <li>• EMERSON</li> <li>• BPE</li> <li>• DELTA</li> <li>• APC</li> <li>• Other REPUTED MAKE</li> </ul>
2.	Battery	<ul style="list-style-type: none"> <li>• PANASONIC</li> <li>• LUMINOUS</li> <li>• OKAYA</li> <li>• AMARON</li> <li>• SU-KAM</li> </ul>

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**Annexure -2**

**Qualifying Criteria (Technical)**

Sl. No	Description	Bidder to Confirm/Specify
1	Acceptance to <b>REG2223-20220021 Rev01 and</b> . Submit signed & stamped/digital signature on each page of all tender documents.	<b>Agree**/Disagree</b>
2	Copy of supply order of UPS/Inverter for commulative capacity of 10 KVA during the last Three (03) Years. (copy should be submitted with technical bid)	<b>Agree/Disagree</b>

\*\* If bidder mentions “Agree”, it will be treated that bidder has confirmed to meet the respective PQR and has accepted all the related conditions and there is NIL DEVIATION. In case of mentioning “Disagree”, it shall be treated that bidder is not meeting the said PQR criterion and offer shall be liable for rejection.

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**ANNEXURE-3**

**BILL OF QUANTITY**

S.No.	Item Description	Unit	Quantity
1.	Online UPS (2KVA 1ph: 1 ph 72 volt)	Set	4.0
2	Battery bank for the capacity of 4680 VAH (1 set consisting of 6 nos. Batteries of 65 Ah)	Set	4.0
3	Metal Rack for UPS & Battery	Nos.	4.0
	<b>Total</b>		