

**भारतीय प्रौद्योगिकी संस्थान (भारतीय खनि विद्यापीठ), धनबाद**

धनबाद, झारखण्ड, भारत, पिन-826004

(मानव संसाधन एवं विकास मंत्रालय, भारत सरकार के अधीन एक राष्ट्रीय महत्त्व का संस्थान)

**INDIAN INSTITUTE OF TECHNOLOGY (INDIAN SCHOOL OF MINES), DHANBAD**

DHANBAD, JHARKHAND, INDIA, PIN-826004

(An Institute of National Importance under Ministry of H.R.D., Govt. of India)

STORES &amp; PURCHASE SECTION

Phone: (0326) 2235678 || Email : purchase@ismdhanbad.ac.in || Website : www.iitism.ac.in

No. CERE-500127-2017-18

Date: 07, July 2017

**NOTICE INVITING TENDER****Subject: Supply & Installation of 30 KVA True Online UPS**

Indian Institute of Technology (Indian School of Mines), Dhanbad invites quotations for the following to be supplied and delivered in CERE Department.

S No	Full Description of items/ store	Qty	Delivery
1	Supply & Installation of 30 KVA True Online UPS (Detailed Specification is given in Annexure – I)	01 No	At the Earliest

**Tender Schedule**

Particulars	Date & Time
Date and time for submission of tenders	28.07.2017 at 1:00 P.M.
Date and time of opening of tenders	28.07.2017 at 4.00 P.M.

1. You are requested to quote your lowest rates for the supply of above items in the attached format for Financial Bid (Annexure – II)
2. You may send your representative in the office of the undersigned at the scheduled date and time of opening of tender.
3. Tender should be submitted in sealed cover only superscribed with Enquiry No. and due date at the following address only:

*The Deputy Registrar (P&S)*  
*Indian Institute of Technology (Indian School of Mines),*  
*Dhanbad – 826 004 Jharkhand*



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### Terms & Conditions

- 1) Please submit authorized dealership certificate, if you are not a manufacturer.
- 2) Please mention Sales Tax, CST, VAT, TIN, GST and PAN numbers and Bank Account Number and name of the bank/ branch in your offer.
- 3) Please indicate rate of taxes/ duties clearly. Rates quoted will be taken as inclusive of all taxes unless given separately.
- 4) The rates should be quoted for each item separately.
- 5) Conditional offer will not be accepted.
- 6) **Tender Cost of Rs. 500/- (non refundable) is to be paid by way of Demand Draft drawn in favor of Registrar, ISM payable at Dhanbad. Non-submission will lead to rejection of your bid.**
- 7) IIT (ISM) does not issue any Form 'C' or 'D' towards sales tax concessional rate. Hence, full rate of sales tax/VAT applicable should be quoted.
- 8) **Educational discount**, if any, should be clearly mentioned.
- 9) You are requested to submit your quotation strictly as per the specifications mentioned in the NIT.
- 10) Your tender must be valid for **minimum 90 days** from the date of opening of tender.
- 11) Please mention warranty/ guarantee in your offer clearly. Material/ equipment to be supplied must have minimum warranty/guarantee of **Minimum 3 years onsite warranty on UPS & battery both.**
- 12) **Each page in the bid document should be numbered properly.**
- 13) **The items/ materials shall be required to be delivered at CER Department/ Section through Purchase & Store Section, IIT (ISM) Dhanbad at the risk and cost of the tenderer.**
- 14) Unloading and installation shall be the complete responsibility of the supplier.
- 15) The stores are required to be delivered within 30 days. Late delivery may not be accepted.
- 16) The items offered should be of good quality confirming to BIS standards, wherever applicable.
- 17) A 'Compliance Statement' along with a certificate and duly signed that the tenderer satisfies the technical requirements given in ANNEXURE-I should also be submitted to facilitate early finalization of the tendering process.
- 18) **Advance payment is not admissible.** Payment shall normally be made within 3-4 weeks subject to receipt and acceptance & installation (as per Purchase Order Terms) of the ordered materials/items.
- 19) In the event date on which the tender is opened for acceptance is declared to be a holiday, the tenders shall be deemed to remain open for acceptance till the next working day.
- 20) Please send your offer by Regd.Post/ Speed Post/ Courier along with Courier receipt. Tender/ quotation will be received during IIT (ISM) working hours only (i.e. Monday to Friday). **Late or delayed tenders shall be summarily rejected.**
- 21) Any other information that you may like to obtain, you are free to contact IIT (ISM) before submission of tender.
- 22) IIT (ISM) reserves the right to accept and/or to reject any/ all tenders without assigning any reason.

  
Assistant Registrar



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Annexure - I

### Detail Technical Specification Supply and Installation of 30 KVA True Online UPS

S. No.	Parameters	Specifications
1	Capacity	30KVA/24KW
2	General Specification	<ul style="list-style-type: none"><li>This specification describes a three-phase, true on-line, continuous operation, solid-state uninterruptible power supply (UPS). The UPS should operate as an active power control system, working in conjunction with the building electrical system to provide power conditioning and on-line power protection for the critical loads.</li><li>The ups should be designed in such a way that the entire electronic parts is mounted in a single box which can be swapped by putting the load on bypass.</li><li>The UPS should be in a self contained cabinet and comprise power section; Bypass Static Switch and interface LCD display all mounted in the same cabinet which need to be supported with caster wheels.</li><li>The UPS cabinet should be equipped for fork truck lifting for easy handling and shifting. All services and installation access should be from the front side.</li><li>Spit bypass facility needs to be provided in the ups i.e. the ups should be capable of taking two different sources at a time. Each ups should have the capacity to run in Parallel under redundant parallel architecture. With a provision to run four UPS in parallel mode. Under parallel running all UPS should share the load equally.</li></ul>
3	Modes of Operation	<ul style="list-style-type: none"><li><b>Normal:</b> The input converter and output inverter should operate in an on-line manner to continuously regulate power to the critical load. The input and output converters should be capable of full battery recharge while simultaneously providing regulated power to the load for all line and load conditions within the range of the UPS specifications.</li><li><b>Battery:</b> Upon failure of the AC input source, the critical load should continue being supplied by the output inverter, which shall derive its power from the battery system. There should be no interruption in power to the critical load during both transfers to battery operation and retransfers from battery to normal operation.</li><li><b>Recharge:</b> Upon restoration of the AC input source, the input converter and output inverter should simultaneously recharge the battery and provide regulated power to the critical load.</li><li><b>Static Bypass:</b> The static bypass should be used to provide transfer of critical load from the Inverter output to the bypass source. This transfer, along with its retransfer, should take place with no power interruption to the critical load. The UPS should be able to recharge the batteries while supplying full power to the load via the static bypass switch.</li><li><b>Maintenance Bypass:</b> The UPS should be provided with an internal manual bypass to simplify the installation and should be used for supplying the load directly from the mains supply, while the UPS will be taken out for maintenance.</li></ul>
4	AC input	3-Phase (3P+N), 50 Hz, Nominal voltage: 230 V, Range of Voltage: 304Volts to 477Volts (while providing nominal charging to the battery system). Frequency range(Maximum: 40-70Hz) Soft Start: As a standard feature, the UPS should contain soft-start functionality,



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		capable of limiting the input current from 0-100% of the nominal input over a default 15 second period.
5	System efficiency at full load	>95% in all load conditions
6	AC output voltage	<ul style="list-style-type: none"> <li>• Should have nominal voltage of 3×400/230V (adjustable for 3×380/220V, 3×415/240V), 50Hz 3 and 4-wire + earth configurations.</li> <li>• Max. voltage transient recovery time: 50 milliseconds to nominal.</li> <li>• Output voltage regulation: ± 1% steady state for a static 100% balanced load; ± 1% steady state for a static 100% unbalanced load; ± 5% for a 0 to 100% load step.</li> <li>• Output frequency regulation: Synchronized to mains over the range of 47-53Hz or 57-63Hz in normal operation; 50 Hz ± 0.1 Hz in battery operation.</li> <li>• Output voltage harmonic distortion: &lt;2% THD maximum and 1% single harmonic for a 100% linear load; &lt;5% THD maximum for a 100% non-linear load.</li> <li>• Output Power Factor Rating: For loads exhibiting a power factor of 0.5 leading to 0.5 lagging, no derating of the UPS is required.</li> </ul>
7	Rectifier	The UPS should include an active power factor corrected Insulated Gate Bipolar Transistor (IGBT) rectifier. The DC buss voltage should be compensated against temperature variations to always maintain optimal battery float charging voltage for temperature excursions above or below 25°C. The battery charging circuit should remain active in Static Bypass and in Normal Operation and DC ripple voltage should not exceed ±1% of nominal with no battery connected. Rectifier should employ electronic wave- form control technology to maintain the current sinusoidal and Pulse Width Modulation (PWM) current control should be used. Digital Signal Processors (DSP) should be used for all monitoring and control tasks. Analogue control is not acceptable. ). Reflected input current: Total Harmonic Distortion (THD) should not exceed 5% at 100% load. Typical batteries recharge time should be as per IEEE 485 standards. <b>Inbuilt charger should be provided and Charger Amperes should be mentioned. External charger will not be accepted.</b>
8	Battery features	Battery backup of 30 min ( minimum) at full load using minimum 32 nos of 12V-65 AH (each) SMF batteries with standard Valve Regulated Lead Acid technology and of reputed make need to be provided. AH should be mentioned along with quantity. suitable wheel based racks for easy movement of battery bank & inverter unit & necessary links & cables has to be supplied along with whole unit. <b>(local stickered battery will not be accepted)</b>
9	Inverter	The inverter should consist of fast switching IGBT power module and it should be PWM controlled using DSP logic. Analogue control will not be acceptable. The inverter modules should be rated for an output power factor of 0.8. Nominal output voltage should be 3×400/230V and adjustable for 3×380/220V or 3×415/240V, 50Hz, L1,L2,L3,N,PE. Static Bypass switch should consist of fully rated Silicon Controlled Rectifiers (SCRs). The static bypass switch should automatically transfer the critical load to bypass input supply without interruption after the logic senses one of the following conditions, i) Inverter overload beyond rating, ii) Battery runtime expired and bypass available, iii) Inverter failure, iii) Fatal error in control system. The static bypass switch should automatically retransfer from by- pass mode to the inverter in



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		case the problems are resolved. The static bypass switch should be provided with a manual means of transferring the load to bypass and back to inverter.
10	Protection	Input over voltage protection, input under voltage protection, over voltage cut off. Short circuit protection: the UPS must resist a short circuit on the output without any damage to the UPS module. Low battery & battery over charge protection should be provided. Indications & audible alarms for mains on, inverter on, overload, load on mains, load on battery, battery low etc. Should be there.
11	Display&Metering	A microprocessor controlled display unit should be located in front of the ups system (on the cabinet) for measurement of all the input ,out put & battery parameters should be available on the alphanumeric display. The display should consist of an alphanumeric display an alarm LED and a keypad consisting of easy operational pushbutton switches. Event log: The display unit should allow the user to display an event log of all active alarms and a minimum of 50 most recent status and alarm events.
12	Software	UPS monitoring software with auto shutdown should be given in Original Equipment Manufacturer (OEM) CD.
13	Remote Monitoring	For purposes of remote communications with the UPS, ethernet card and other necessary arrangement should be provided for remote communications with a network via web browser or SNMP. The system must provide a means for logging and alarming of all monitored points plus email notification.
14	Certification & Standards	The manufacturer should be ISO 9001 & 14001 certified. Certificates are to be submitted along with the quotation. Moreover, following standards should be there. Cable for connection: IEC 320 standards Safety: EN50091-1-1 / IEC 62040-1-1 Emissions: EN50091-2/IEC 62040-2 Performance: EN/IEC 62040-3
15	After sales support	Pan India based service centre with 24x7x365 days support with dedicated toll free number having minimum 2 service centres in Jharkhand. The local support contact along with mobile number should also be provided.
16	Compliance report	The quote should also include a compliance statement vis-à-vis all the above specifications in a "tabular form" clearly stating the compliance. This statement must be signed, with the company seal, by the tenderer for its authenticity and acceptance that any incorrect or ambiguous information found submitted will result in disqualification of the tender.
17	Warranty	Minimum 3 years onsite warranty on UPS & battery both with no charges on parts, labour & service during this tenure on UPS repair or replacement except physical damage or damage due to natural calamity. UPS & battery certificate from OEM to be enclosed along with the quotation.
18	Terms and Conditions	Vendor has to take full responsibility for Delivery, Installation, Demonstration and Training at on-site of the system. The manufacturer should have a minimum of 20 years experience in the design, manufacture, and testing of UPS and should have experience of supplying UPS at reputed Institutes in India.



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Annexure - IIFormat for Commercial Bid

Our NIT No.:CERE-500127-2017-18

Date:

Bidders Ref: No.

Date:

**Sub: Supply & Installation of 30 KVA True Online UPS**

Sl. No.	Full Description of Items	Qty.	Rate	Amount
			Packing & Forwarding (if any)	
			<b>Total</b>	
			GST (if any)	
			Freight (if any)	
			Installation (if any)	
	Amount should be in figure as well as word		<b>Grand Total</b>	

**Note:**

- 1) All the details must be provided as per prescribed format only
- 2) Prices quoted by the bidders should include all local taxes, VAT, service tax, duties, livies, transportation cost and insurance costs etc. if any
- 3) All the rates must be quoted in Indian Rupees.