

मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान भोपाल Maulana Azad National Institute of Technology Bhopal (भारत सरकार, शिक्षा मंत्रालय के अधीन राष्ट्रीय महत्व का संस्थान) (An Institution of National Importance under MoE, Govt. of India)			
			
निविदा आमंत्रण सूचना NOTICE INVITING QUOTATION			
सामग्री/वस्तु का नाम Name of Goods/Items		Voltage Source Inverter	
Website	www.manit.ac.in	Fax No:	0755-2670562
Email Address:	info@manit.ac.in	Telephone No:	0755-4051000, 0755-4052000

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मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल	
Maulana Azad National Institute of Technology Bhopal	
(भारत सरकार, शिक्षा मंत्रालय के अधीन राष्ट्रीय महत्व का संस्थान)	
(An Institution of National Importance under MoE, Govt. of India)	
No. MANIT/EE/2025/020	दिनांक / Date: 17/09/2025
निविदा आमंत्रण सूचना	
NOTICE INVITING QUOTATION	
सामग्री / वस्तु का नाम Name of Goods/Items	Voltage Source Inverter
उपरोक्त सामग्री / वस्तु की आपूर्ति के लिए निविदाएं आमंत्रित की जाती हैं। इच्छुक निर्माता/अधिकृत भागीदार/ एंजेन्सियाँ, अपनी बोली अंकित करें। निविदा दस्तावेज विधिवत रूप से भरकर विभागाध्यक्ष— इलेक्ट्रिकल इंजीनियरिंग विभाग में जमा की जा सकती है। सम्पूर्ण निविदा मय दस्तावेज प्रस्तुत करने की अंतिम तिथि 08/10/2025 अपरान्ह 12.00 बजे तक है। संस्थान निदेशक, बिना कोई कारण बताए किसी या संपूर्ण निविदा को पूर्ण या आंशिक रूप से स्वीकार या अस्वीकार करने का अधिकार सुरक्षित है।	
	कुलसचिव
Quotations are invited for Supply of above mentioned Goods/Items in the Institute. Interested Manufacturers/Authorized Partner/Agencies may quote their price. Quotation duly completed be submitted to the Head of Department Electrical Engineering of the Institute. Last date of submission of complete quotation document is 08/10/2025 up to 12.00 hours. The Director of the Institute reserves the right to accept or reject any or the entire quotation in full or in part without assigning any reason whatsoever.	
	Registrar

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Maulana Azad National Institute of Technology Bhopal		
एक नजर में महत्वपूर्ण जानकारियाँ		
IMPORTANT INFORMATION AT A GLANCE		
सामग्री/वस्तु का संक्षिप्त विवरण	संख्या	टिप्पणी
Brief Description of Goods/Items	Quantity	Remarks
Voltage Source Inverter	01 No.	संलग्नक- I पर विस्तृत विवरण Detailed Specification at Annexure-I
निविदा की अनुमानित लागत Estimated cost of Quotation	Rs.1,40,000.00	
आपूर्ति एवं स्थापना का स्थान Location of Supplies & Installation	Electrical Engineering at Institute	
निविदा दस्तावेज की उपलब्धता Availability of Quotation Document	www.manit.ac.in www.eprocure.gov.in/epublish/app	
निविदा जमा करने के अंतिम दिनांक एवं समय Last Date & Time of Submission of Quotation	08/10/2025 up to 12:00 hours	
निविदा खुलने की दिनांक एवं समय Date & Time of Opening of quotation	08/10/2025 at 15:00 hours	
निविदा वैधता की अवधि Quotation Validity period	60 days from the date of opening of the Technical Bid	
वितरण/आपूर्ति की अवधि Delivery/ Supply period	04 to 06 weeks from the date of issue of Supply Order	
शास्ति खंड Penalty Clause	0.5% of value of the order per week	
वारंटी अवधि Warranty Period	Two year (s) from the date of successful SITC of equipment/ item	
बोली सुरक्षा/बयाना राशि Bid Security/ EMD	NIL	
निष्पादन सुरक्षा राशि Performance Security Amount	NIL	

बोलीदाता के लिये निर्देश/अनुदेश/ INSTRUCTIONS TO BIDDERS		
1	Scope of Supplies & Work:	
	a	Bidders are advised to inspect and examine the site and its surroundings and satisfy themselves before submitting their quotations as to the nature of the ground and sub-soil (So far as is practicable), the form and nature of the site, the means of access to the site, the accommodation they may require and in general shall themselves obtain all necessary information as to risks, contingencies and other circumstances which may influence or affect their quotation. A bidder shall be deemed to have full knowledge of the site whether he inspects it or not and no extra charges consequent on any misunderstanding or otherwise shall be allowed
	b	It will be imperative on each bidder to fully acquaint himself with the site conditions and factors which would have any effect on the performance of the contract and / or the cost.
	c	The Goods/ Items shall be supplied as per the Bill of Quantity and Specifications mentioned in ANNEXURE-I . However higher specification of equipment may be considered subject to their cost economics competitiveness.
	d	Bidder should supply illustrated leaflet giving technical details of Goods/ Item and attach the same with the quotation to facilitate evaluation.
	e	Bidder should quote the price of only one best & appropriate model of Goods/Item available with them.
	f	Purchase Preference will be given to “Make in India products” as defined in Purchase Preference with Local Content (PP-LC) Policy.
	g	Purchase preference will be given to MSEs as defined in Public Procurement Policy for Micro and Small Enterprises (MSEs).
	h	Start-ups as recognized by Department for Promotion of Industry and Internal Trade (DPIIT), claiming EMD exemption and relaxation in turnover as prescribed in the certificate / Start Up scheme of DPIIT.
	i	Where ISI certification marked goods are available in market, procurement should generally be limited to goods with those or equivalent marking only. The warranty/AMC required must be specified.
	j	After the supply of Goods/ Items & Accessories as mentioned in the ANNEXURE-I , the bidder has to execute its installation at the designated location(s).No extra cost shall be paid for this reason.
2	Delivery of Supplies & Installation:	
	a	The purchaser interested for complete delivery of Goods/items along with Installation, Testing and Commissioning by bidder within stipulated time limit.
	b	The material shall be inspected on receipt at site and bidder shall be responsible for any damage during the transit of Goods/Items.
3	Warranty & After Sales Services:	
	a	The bidder shall offer on-site comprehensive warranty of equipments as mentioned at IMPORTANT INFORMATION AT GLANCE sheet at the designated location & shall cover each and every part of the equipments including parts having limited life etc. The purchaser is not liable to pay any extra charges on any account during warranty period.
	b	The bidder shall ensure to render after sales services during the warranty period to the satisfaction of purchaser.

	c	The performance security as mentioned at IMPORTANT INFORMATION AT GLANCE sheet is required in favour of Institute for the warrantee period plus sixty days extra.
4	Eligibility Criteria:	
	a	Bidder should have registered with appropriate Authority and having GST Number.
5	Price Bid	
	a	The Prices should be quoted in Indian Rupees only.
	b	Bidder shall take into account all costs including unloading at the location of purchaser, cartage etc. for giving delivery of material at site(s) before quoting the rates. In this regard no claim what so ever shall be entertained.
	c	The bidders are advised not to indicate any separate discount. Discount, if any, should be merged with the quoted unit prices.
	d	The price quoted in price bid shall be firm but subject to change in rate of applicable taxes if any.
	e	The Bidder should avoid the use of vague term such as “Extra as applicable”. Such offers shall be treated as non-responsive.
6	Bid Submission:	
	a	The quotation must be placed in a properly sealed envelope super-scribed “Quotation for the Supply of Voltage Source Inverter.” with quotation inquiry number and its due date addressed to The Director, Maulana Azad National Institute of Technology- Bhopal- 462003 and must reach the office of The HoD- Department Electrical Engineering, Maulana Azad National Institute of Technology, Bhopal 462003 on or before as mentioned at IMPORTANT INFORMATION AT GLANCE sheet. The sealed Envelop should be consisting of followings:
	b	Copy of Certificate of Registration of firm.
	c	BOQ Annexure-I and Price Bid Annexure-II duly filled and signed.
7	Evaluation of Bids:	
	The Institute shall evaluate all the items together or separately depending upon nature of items of circumstance and compare the quotations determined to be substantially responsive i.e. which	
	a	are properly signed;
	b	Confirm to the eligibility criteria of the vendor; and
	c	Confirm to the terms & conditions, and technical specifications.

मौलाना आज़ाद राष्ट्रीय प्रौद्योगिकी संस्थान, भोपाल
Maulana Azad National Institute of Technology Bhopal

सामग्री की मात्रा एवं विवरण
BILL OF QUANTITY AND SPECIFICATION

SN	Name of Product/ Items	Quantity	Remarks
1	<u>Voltage Source Inverter Fed Permanent Magnet Synchronous Motor</u> This setup must consist of the following, a) 5 KVA THREE PHASE 2-LEVEL VOLTAGE SOURCE INVERTER b) ARTIX7 7 XC7A35TFPGA Board c) 3 PHASE 1 HP PMSM WITH Motor LOAD SETUP a) 5 KVA THREE PHASE 2-LEVEL VOLTAGE SOURCE INVERTER • Input AC Voltage (for Rectifier) = 230V Line to line volt • DC Link Voltage Vdc = 650Vdc • IGBT VOLTAGE&CURRENT = 1200V/75A • Output AC Voltage Vac = 0-400V 3-ϕ • Output Load Current Iac = 10A max • Output Frequency = 0-50 Hz • IGBT Switching Frequency Fsw = 20 KHz MAX • Three phase bridge rectifier Blocking voltage of 1600V max • High surge current carrying capability 85A • Large isolated base plate & Easy mounting • 3 no's of SKYPER32 R SEMIKRON IC Based PWM Driver circuit are required to isolate the Control Unit/Primary Circuit from the secondary. • Rectifier DC input to be given to electrolytic filtering capacitors. • 2 No's of Capacitor Ratings are 2200μF / 450V. • Snubber capacitors of 0.22μF / 1000VDC are to be connected across the DC Link for Voltage overshoot protection. • 4 No's of HALL EFFECT CURRENT SENSOR Used to sense dc link current & 3 ph Load currents • Three No. of Voltage Sensors used to Sense the AC voltage and DC link voltage b) ARTIX7 7 XC7A35TFPGA Board: • Xilinx XC7A35T Artix 7 FPGA IC • 256Mb SDRAM • 8MB SPI FLASH Memory • On-Board USB JTAG Programmer	01 No.	

	• USB to UART Interface • 4 Digit Seven Segment Display • 50 MHz Clock • ADC 4 channel 0-3V Range • SPI DAC • 2x16 LCD Display • 16 Slide switches • 5 Push Button • 16 LEDs • 31 External I/O's <u>c)3Ø PMSM Motor set up with speed feedback sensor</u> This 3 PMSM for 3 phases Inverter set up for open loop & closed loop control applications. Specifications are PMSM • Type : Three-phase PMSM • Power : 1HP • Stator voltage : Three phase 380V AC, • Speed : 1500 RPM • Make : BEN/CG/SEIMENS • High resolution speed sensor to sense the speed and position. • Flux Sensor • Torque Sensor DCMACHINE: • Power Rating : 1 HP • Armature Volt : 220 V DC • Field Volt : 220V DC • Speed : 1500 RPM • Type : Separately Excited Foot Mounted • Both Motor & Generator Coupled in Common Base Plate The Following PWM techniques are required ✓ Sinusoidal PWM technique ✓ Space Vector PWM Technique Note: Machine parameters are required compulsory. Delivery upto Power Electronics Lab, EE Dept. MANIT Bhopal Warranty : Minimum two year		
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NB: Drawing/ Design is enclosed herewith.

ANNEXURE- II							
BID PRICE FORMAT							
To,							
The Director							
MANIT- Bhopal- 462 003							
Sub:		Enquiry Document dated __/__/2025.					
SN	Product Description with make & Model	Unit price	Qty	Qty Price	GST	Total Price	
1	2	3	4	5	6	7(5+6)	
1	Voltage Source Inverter		01 No.				
Total offered Price							
Total (In Words):							
Delivery Period required:							
The followings things are confirmed and undertake by us that:							
a	The price quoted above are inclusive of statutory Levies & Taxes, Duties, Transportation and other charges (Insurance, Loading/ unloading, Packing & Forwarding charges, Installation etc.) at site.						
b	Taxes are subject to change/ revision.						
c	We agree with the terms and conditions specified in “Instructions to Bidders” and if selected, the execution of supplies would be made as per bill of Quantity & Specification.						
Date:		Signature of Authorized Bidder with proper rubber stamp					
		Name:					
		Designation:					
		Mobile No:					