



राष्ट्रीय प्रौद्योगिकी संस्थान हमीरपुर हमीरपुर 177005-(हि.प्र.)
NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)-177005
[An Institute of National Importance under Ministry of Education (शिक्षा मंत्रालय)]

E-TENDER NOTICE

Sealed online e-Tender in two bid system are hereby invited by the undersigned for the supply of following items on behalf of the Director, NIT, Hamirpur from the Eligible/ Experienced/ Resourceful, manufacturer's dealer/authorized distributor etc. having experience in appropriate field and who have successfully completed works of similar type, so as to reach in the office of the undersigned as per date & time mentioned below.

Sr. No.	Name of works/item	Qty/ No.	Earnest Money In Rs.	Time Limit
1	Supply and installation of Regenerative power supply for bidirectional operation testing of Grid-Integrated EV chargers Solutions For detailed specifications etc please refer to SBD	1	44900	60 days

1. Availability of bid document and mode of submission:-The bid document is available online and bid should be submitted in online mode on website <http://www.eprocure.gov.in/> and <http://www.nith.ac.in/>. Bidder would be required to register in the web-site which is free of cost. For submission of bids, the bidder is required to have Digital Signature Certificate (DSC) from one of the authorized certifying authorities (CA).

2. Key dates: (1)

1	Date of online publication	08.11.2025 at 6.00 PM
2	Document download start and end date	08.11.2025 to 27.11.2025 10.30 AM
3	Bid submission start and end date	08.11.2025 to 27.11.2025 10.30 AM
4	Physical submission of EMD, technical documents and cost of tender document etc.	On or before 05.30 PM on 27.11.2025
5	Date of opening of technical bid	28.11.2025 at 11.30 AM

- (II) Objections/representation if any against the bidders will be entertained only within three days after publication/uploading of technical bid opening summary on net and thereafter that the date of opening of financial bid of technically qualified bidders will be published /uploaded on net.

3. Tender Details:-The tender Documents shall be uploaded in 2 cover:-

Cover 1:- Shall contain scanned copies of all "Technical Documents/Eligibility information".

Cover 2:- Shall contain "BOQ/Financial Bid", where supplier will quote his offer for each item.

- (a) Submission of Original Documents: The bidders are required to submit (a) original demand draft towards the cost of bid document if any and (b) original bid security/Earnest Money deposit (EMD) and other technical documents in the Store &

Purchase section, NIT Hamirpur-177005 (HP) as specified in the key dates of **Sr. no.2** on tender opening dates & schedule, failing which the bids will be declared non-responsive. EMD in the form of DD/FDR must be attached with in favour of Director, NIT, Hamirpur (H.P) -177 005. The EMD should remain valid for a period of 90 days beyond the final bid validity period. EMD of unsuccessful bidders shall be returned after the expiry of the final bid validity or before the 30th day of the award of contract. The EMD of the successful bidder shall be released after successful execution of supply order.

4. **BID OPENING DETAIL:** - The bids shall be opened as per schedule specified in the key dates of **Sr. no.2** in the store & Purchase section, NIT, Hamirpur by the authorized officer. In their interest the tenderer are advised to be present along with original documents at the time of opening of tenders. If the office happens to be closed on the date of opening of the bids as specified, the bids will be opened on the next working day at the same time & venue.
5. The bids shall remain valid for acceptance for a period of not less than 120 days after the deadline date for bid submission. Other details can be seen in the bidding documents. The officer inviting tender shall not be held liable for any delays due to system failure beyond its control. Even though the system will attempt notify the bidder of any bid updates. The Employer shall not be liable for any information not received by the bidder. It is the bidders responsibility to verify the website for the latest information related to the tender.
6. The copy of enlistment order & renewals; Copy of PAN issued by Income tax Department and copy of GST Certificate must accompany in the cover-1
7. The bidder preferably must have successfully supplied similar items in recent years. The bidders shall have to produce supporting documents giving date of award, date of commencement and completion from the concerned competent authority and should be included in cover-1
8. Destination: F.O.R. destination i.e. NIT, Hamirpur (HP) and the rates must include the charges for Packing, Forwarding, Freight, etc., if any.
9. Price/Rate: The price of items may be quoted in Indian rupees.
10. **GST:-** All the firms may invariably mention their GST/PAN numbers on tender failing which quotations may not be considered valid. Further, this Institution does not issue any Concessional form, so the GST applicable as per actual rates must be mentioned in the offer. In case GST is not mentioned, the rates shall be treated as inclusive of all taxes.
11. The bidders/firms have to supply the complete catalogue/brochure of the products to be supplied along with the Technical bid.
12. The technical bids will be evaluated on the basis of terms & conditions of the tender and details of the product to be supplied as per condition 11 of the tender notice. The committee reserves the right to reject any technical bid on the basis of technical specifications/catalogue/brochure submitted.
13. Conditional/ telegraphic tenders shall summarily be rejected.
14. For any clarifications bidders are requested to contact FI (Purchase), NIT Hamirpur at his E-mail ID i.e. fip@nith.ac.in.
15. The tender/bid shall be kept in a sealed envelope superscribed as "Tender for (Name of work and date of opening _____)".
16. The jurisdiction of the law of court shall be at Hamirpur (HP).

No: NIT/HMR/DoEE/S&PS/ 2025/685-87

FI (Purchase)

Dated: 07-11-2025

Copy forwarded to the following for information please:-

1. The HOD, DoEE, NIT, Hamirpur
2. Dr. R.K. Jarial, Associate professor, DoEE, for information please.
3. The FI (CC), for getting the advertisement displayed in the Institute website for wider publicity under head: - **Supply and installation of Regenerative power supply for bidirectional operation testing of Grid-Integrated EV chargers Solutions for Electrical Engineering Department of NIT Hamirpur.**

Amul
7-11-21
FI (Purchase)



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NATIONAL INSTITUTE OF TECHNOLOGY HAMIRPUR (H.P.)-177005

[An Institute of National Importance under Ministry of Education (शिक्षा मंत्रालय)]

NIT-SBD

Subject: - Supply and installation of Regenerative power supply for bidirectional operation testing of Grid-Integrated EV chargers Solutions for Electrical Engineering Department of NIT Hamirpur.

Sealed online E-Tender in two bid system are hereby invited by the undersigned for the supply of following items on behalf of the Director, NIT, Hamirpur from the Eligible/ Experienced/ Resourceful, manufacturer's dealer/authorized distributor etc. having experience in appropriate field and who have successfully completed works of similar type, so as to reach in the office of the undersigned as per date & time mentioned in the tender notice.

Sr. No.	Name of works/item	Qty/ No.	Earnest Money In Rs.	Time Limit
1	Supply and installation of Regenerative power supply for bidirectional operation testing of Grid-Integrated EV chargers Solutions For detailed specifications etc please refer below:-	1	44900	60 days

Detailed Technical Specification for Supply and installation of Regenerative power supply for bidirectional operation testing of Grid-Integrated EV chargers Solutions

operation testing of Grid-Integrated EV chargers Solutions								
Sr.	Item Name	Item Description &Specification	Qty.					
1	Regenerative Power Supply for Bidirectional Operation Testing of Grid-Integrated EV Chargers solutions	a) Bi-directional Programmable DC Power Supply (Quantity 01) 1500V/40A/18kW bidirectional programmable DC power Supply Bidirectional Programmable DC Power Supply Model: 1500V / 40A / 18kW or more Type: Bidirectional, Programmable, Energy Regenerative DC Power Supply 1. General Description The bidirectional programmable DC power supply is a high-performance test equipment capable of operating as both a source and sink with seamless energy regeneration. It supports high-speed transitions, two-quadrant operation, and regenerative feedback with up to 95% efficiency. The system is designed for advanced testing of energy storage devices, electric vehicles, renewable energy systems, power electronics, and other high-power applications. 2. Electrical Specifications <table><tr><td>18KW Bidirectional Regenerative DC Power Supply</td></tr><tr><td>FEATURES</td></tr><tr><td>■ Bi-directional source and regenerative sink</td></tr><tr><td>■ High power density up to or more 18kW in compact 3U rack space</td></tr><tr><td>■ Support master-slave paralleling</td></tr></table>	18KW Bidirectional Regenerative DC Power Supply	FEATURES	■ Bi-directional source and regenerative sink	■ High power density up to or more 18kW in compact 3U rack space	■ Support master-slave paralleling	01
18KW Bidirectional Regenerative DC Power Supply								
FEATURES								
■ Bi-directional source and regenerative sink								
■ High power density up to or more 18kW in compact 3U rack space								
■ Support master-slave paralleling								

- Built-in function generator, support arbitrary-waveform generating
- Support multiple working modes, rising and falling time can be adjustable.
- Support control loop priority mode setting, with difference loop speed, to match with the needs of high speed voltage setup or current no overshoot application
- Support output resistance setting function
- Support Battery charge-discharge function
- Battery simulation function
- Support Built-in voltage curves complied with LV123, LV148, DIN40839, ISO-16750-2, SAEJ1113-11, LV124 and ISO21848 automotive standar
- Support PV solar panel I-V curve simulation
- PC software to setup DC Power Supply

PARAMETERS

Output Rating	Voltage	0 ~ 1500V
	Current	-40 ~ 40A
	Power	-18000W ~ 18000W
Load Regulation	Voltage	$\leq 0.02\%FS$ approx
	Current	$\leq 0.05\%FS$ approx
Line Regulation	Voltage	$\leq 0.01\%FS$ approx
	Current	$\leq 0.05\%FS$
Setup value Resolution	Voltage	0.1V
	Current	0.001A
	Power	0.001kW
	Resistance	0.1 Ω
Setup Value Accuracy	Voltage	$\leq 0.02\% + 0.02\%FS$
	Current	$\leq 0.1\% + 0.1\%FS$
	Power	$\leq 0.5\% + 0.5\%FS$
	Resistance	$\leq 1\% + 1\%FS$
Ripple (20Hz - 20MHz)	Voltage	$\leq 600mV_{pp}$
	Current	$\leq 0.1\%FS RMS$
Setup value temperature drift coefficient (% of Output/°C+Offset)	Voltage	$\leq 50PPM/^{\circ}C$
	Current	$\leq 200PPM/^{\circ}C$
Rise time (no load)	Voltage	$\leq 15ms$
Rise time (full load)	Voltage	$\leq 30ms$
Fall time (no load)	Voltage	$\leq 30ms$
Fall time (full load)	Voltage	$\leq 15ms$
Dynamic response time	Voltage	$\leq 2ms$
Command response	2ms	

- Standard: USB, LAN, CAN, Digital I/O
- Optional: RS232, Analog, GPIB
- Optical fiber communication for master-slave parallel operation

7. Environmental Specifications

- Operating Temperature: 0 – 50 °C
- Storage Temperature: -10 – 70 °C
- Efficiency: $\geq 92\%$
- Cooling: Intelligent air cooling
- Dimensions: 483 W $\times$ 801.6 D $\times$ 151.3 H mm (3U rack)

8. Safety & Standards Compliance

- Compliance with LV123, LV148, DIN40839, ISO-16750-2, SAEJ1113-11, LV124, ISO21848.
- Designed for compliance with international safety and EMC standards.

Software required with following features

The tool should include functionalities for designing power supplies and motor drives, simulating power electronics and motor drive systems with analog and digital control, and automatically generating embedded C code for TI microcontroller hardware. The tool should:

Power Supply Design features

Power converter and inductor losses should be evaluated in the software tool.

The software tool should have the capability of performing AC analysis on the switching models directly.

The software tool should have the capability of including the digital delay directly to the design in the z-domain.

The software tool should contain the library of PWM control ICs for a full power supply simulation.

The software should determine the optimal magnetics ratio, quality factor, operating frequency, etc., for user design needs.

Design LLC resonant power supplies automatically for a given input specification with minimum effort

Design buck, boost, and flyback power supplies automatically with peak current mode control with minimum effort. Implement control in both control block and PWM IC hardware for easier implementation.

Design common-mode and differential-mode EMI filters of power

time	
AC Input	380V±10% (3phase 4wires) 47Hz ~ 63Hz
Efficiency	92%
Protections	OVP, OCP, OPP, OTP, power down protection, anti-islanding protection
Communication interface	Built-in USB, CAN, LAN.
Working Tem.	0 - 50°C

Output Voltage Range	0 – 1500 V DC
Output Current Range	0 – ±40 A
Output Power	18 kW
Output Resistance Range	0 – 1 Ω
Voltage Resolution	0.1 V
Current Resolution	0.001 A
Power Resolution	0.001 kW
Voltage Accuracy	≤0.02% + 0.02% FS
Current Accuracy	≤0.1% + 0.1% FS
Ripple & Noise	≤600 mVpp (max ≤1500 mVpp), ≤0.1% FS RMS

3. Bidirectional Functionality

- Seamless transition between source and sink modes.
- Energy regeneration back to the grid with efficiency up to *95%.
- Supports dynamic load testing and high-speed response (2 ms typical).

4. Programmable Features & Control

- Built-in function generator for arbitrary waveform generation.
- Photovoltaic I-V curve simulation and battery simulation.
- Support for control loop priority modes (CV/CC).
- Adjustable rise and fall times.
- Data logging with 10 μs minimum sampling interval.

5. Protection Features

- Over Voltage Protection (OVP)
- Over Current Protection (±OCP)
- Over Power Protection (±OPP)
- Over Temperature Protection (OTP)
- Power down and anti-islanding protection
- Reverse polarity protection

6. Communication Interfaces

	Provide link to real-time simulator Typhoon HIL. Provide support to VHDL and Verilog code through co-simulation link with software ModelSim/Quarta. Provide FMI interface to link with FMI supported software. Provide link to Altair Activate, Embed, and Flux/FluxMotor. Target Hardware Support: Create embedded C code automatically for TI microcontroller hardware. Provide an opportunity to simulate the schematic prior to code creation. Note: Vendors should ensure the compliance with the below mentioned compatibility criteria to ensure seamless integration and effective operation within the project framework: • Control Platforms: compatible for reconfigurable programming using DSP, FPGA, or any real-time Hardware-in-the-Loop (HIL) controller. • Power Conversion Unit: should be compatible to 30 kVA, 1500 V AC power rating with a 25 kW Power Factor Correction (PFC) unit. Vendor has to show the full demo. • Software Tools: should be integrated with MATLAB, PSIM	
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Other Terms & Conditions

- Vendor participating must be responsible for integration of all hardware items with software items.
- Vendor participating can be called for onsite demonstration with sample product for quality and feature analysis during the technical evaluation.
- Technical committee / PI / Co-PI can accept or reject any bid based upon the product quality & unsatisfactory operation of the equipment.
- Bids will be rejected in case of any technical deviation in compliance.
- Bidders must have similar past experience in providing the similar products in other IITs / NITs or any central / state organisations.
- Vendors should provide two year warranty against all performance and manufacturing defects whatsoever.
- No extra cost will be provided for delivery and installation of the equipments.
- Vendor has to give demonstration and training for the supplied equipments at NIT Hamirpur, Department of Electrical Engineering.

TERMS AND CONDITIONS:-

1. **Validity:** Minimum validity of the quotation will be 03 months from the date of opening of the quotation/tenders.
2. **Time Limit:** - The firm/supplier has to supply and install the equipments within 60 days from the date of the award letter.
3. **Guarantee/warranty:** - The supplier has to provide equipment guarantee/warranty supplied for 02 years from the date of successful installation of the equipment supplied. (Certificate of the same to be given by the supplier)

		Provide PIL (Processor-In-the-Loop) simulation with the power stage in the software and the control stage in the actual control hardware.	
		converter and motor drive systems automatically and with minimum effort Provide integrated environment to run SPICE simulation (e.g. LTspice) based on EMI noise levels and required EMI standards. through co-simulation link.	
		Design motor drive systems with current controller and speed/torque controller Design HEV (Hybrid Electric Vehicle) and PHEV (Plug-in Hybrid Electric Vehicle) powertrain systems with current controller, speed/torque controller, and voltage controller determined automatically. Simulate power converter systems and motor drive systems with control implementation in s-domain block diagram, z-domain block diagram, op. amp. circuit, custom C code, or VHDL or Verilog code.(Subjected to modelsim software) Provide integrated models to simulate power converters with different levels of fidelity based on simulation needs. Provide the capability to simulate magnetics of any structures. Simulate power converter transient and conducted EMI of power electronics and motor drive systems, including effect of cables. Calculate power converter losses with devices from different manufacturers. Provide the capability to capture semiconductor device datasheet information graphically. Calculate inductor losses based on inductor structure and magnetic materials. Provide the capability to run simulation in scripts so that a simulation run of hundreds or thousands of simulations can be automated. Provide the capability to generate efficiency maps of power converter and motor drive systems. Generate embedded C code automatically for TI microcontroller hardware. Provide the capability to simulate the schematic before code generation. Provide the function to visualize waveforms and modify parameters of TI microcontroller code in real time for easy debugging. Provide PIL (Processor-In-the-Loop) simulation with the power stage in the software and the control stage in the actual control hardware. Provide integrated environment to run SPICE simulation (e.g. LTspice) through co-simulation link.	

number of items to be purchased could be increased or decreased depending on the requirement of end user.

15. In case of any dispute the jurisdiction of Hamirpur (HP) Courts shall apply. For any clarifications please contact:- Dr. Jiwanjot Singh (Mobile 9872581018)

FI (Purchase)

4. **Demonstration & Training:-** The supplier will have to demonstrate and impart training to concerned users at NIT, Hamirpur after successful supply & installation. (Certificate of the same to be given by the concerned user/indenter).
5. **EMD: EMD in the form of DD/FDR /Bank Guarantee must be attached in favour of Director, NIT, Hamirpur (H.P) -177 005.** The EMD should be remained valid for a period of 120 days beyond the final bid validity period. EMD of unsuccessful bidders shall be returned after the expiry of the final bid validity or before the 30th day of the award of contract. The EMD of the successful bidder shall be released only after submission of 3 % **Performance bank Guarantee** which should be valid till expiry of warranty period. EMD/PBG exemption is permissible as per Govt. rules.
6. **Make in India preference:-** NIT Hamirpur shall compare all substantially responsive bids to determine the lowest evaluated bid. The Institute is following and abide with the revised Public Procurement (Preference to Make in India), Order No. P- 45021/2/2017 – PP (BE-II) dated 16.09.20 issued by DPIIT, Ministry of Commerce and Industry, Govt. of India & subsequent instructions of Ministry. Accordingly, preference will be given the make in India products while evaluating the bids. However, it is sole responsibility of the bidder(s) to specify the product quoted by them is of Make in India along with respective documentary evidence in the technical bid itself.
7. **Technical Evaluation:-** Technical evaluation of the participating firms will be done strictly on the basis of catalogues/brochures/literature/technical details of the product to be supplied along with relevant experience & fully complying all the terms & conditions of the SBD & tender notice. **It is mandatorily to physically submit the technical literature/catalogue of the product to be supplied along with make & model no. failing which the technical bid of the participating bidder will be straightforward rejected.** NIT Hamirpur also reserves the right to seek clarification from any of the participating firm during technical evaluation. The participating bidder has to submit undertaking that they fully complies to our above-mentioned technical specifications.
8. **Destination:** F.O.R. destination i.e. NIT, Hamirpur (HP) and the rates must be quoted inclusive of all taxes and charges.
9. **Penalty:** In case the firm/vendor fails to supply the equipments within the stipulated period penalty without assigning any reasons @ 1/2% (half percent) of the total value of the item covered in order as penalty per day subject to a maximum of 5% (five percent) will be imposed unless extension is obtained in writing from the office on valid ground before expiry of delivery period
10. **Price/Rate:** The price of equipment/items may be quoted as per BOQ clearly mentioning the Basic rate & GST in the specified columns of BOQ in Indian rupees. **Tender will be awarded to the participating bidder who will be lowest in terms of total of all items**
11. **GST:** - All the firms may invariably mention their GST/PAN numbers on quotation/tender failing which quotations may not be considered valid. Further, this Institution does not issue any C/D Concessional form, so the GST applicable as per actual rates must be mentioned in the offer. In case GST is not mentioned, the rates shall be treated as inclusive of all taxes.
12. **NIT/NIQ Opening:** Representative of the firm may be present at the time of opening of the Quotations, if it wishes.
13. **Payment:** 100% payment shall be made immediately after receipt of material in good condition and successful installation of the same.(Certificate of the same to be given by the indenter/inspection committee NIT, Hamirpur)
14. **Right of Acceptance/Rejection:** Right of acceptance and rejection of any tender/quotation in part or full without assigning any reason are reserved with the institution authorities. The

Annexure II -Questionnaire

(Bidder should duly fill and send with technical documents via post/courier)

Sr.No.	Questions	Response
1	Whether all the terms and conditions of the NIT document have been complied. Compliance (Yes/No)	
2	Whether all the items specified in the technical specification has been compiled and have been quoted in the bidding engine. Compliance (Yes/No)	
3	Confirm that you have read all the instructions carefully and have complied with the instructions accordingly. Compliance (Yes/No)	
4	In case bidder does not manufacture goods offers to supply have submitted Manufacturer's Authorisation letter. Compliance(Yes/No)	
5	Mention Delivery period	
6	Mention Warranty of the material	
7	Mention HSN/SAC code of the material	
8	In case of import supplies whether you have mentioned nearest international port of shipment in the technical bid (if not applicable please mention 'NIL').	

Signature and Seal of the Manufacturer / Bidder

Place: _____

Date: _____

Annexure I - Bidder's Information

(Bidder should duly fill and send with technical documents via post/courier)

1	Name of the Bidder	
2	Address of the Bidder	
3	PAN No.	
4	GSTIN No.	
5	E-mail ID	
6	Contact Person's Name & Designation	
7	Mobile No.	
8	Email ID	

ANNEXURE III – DECLARATION OF LOCAL CONTENT

(To be given on company letter head - For tender value below Rs.10 crores)
(To be given by Statutory Auditor/Cost Auditor/Cost Accountant/CA for tender value above Rs.10 crores)
(Bidder should duly fill and send with technical documents via post/courier)

Date: _____

To,

The Faculty Incharge Purchase,
National Institute of Technology,
Hamirpur-177005 (HP)

Sub: Declaration of Local content

Tender Reference No: _____

Name of Tender: - _____

1. Country of Origin of Goods being offered: _____
2. We hereby declare that items offered has _____% local content.
3. Details of Location at which local value addition is made _____

“Local Content” means the amount of value added in India which shall, be the total value of the item being offered minus the value of the imported content in the item (including all customs duties) as a proportion of the total value, in percent.

The bidders cannot claim services such as transportation, insurance, installation, commissioning, training and after sales service support like AMC/CMC etc as local value addition.

*“*False declaration will be in breach of Code of Integrity under Rule 175(1)(i)(h) of the General Financial Rules for which a bidder or its successors can be debarred for up to two years as per Rule 151 (iii) of the General Financial Rules along with such other actions as may be permissible under law.”*

Yours faithfully,
(Signature of the Bidder, with Official Seal)

