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Domestic Tender:
Supply and Installation of High-Performance Computing Cluster

Tender No: **IPC/AS/IISc/2025-26/001**
Date: 24th October 2025

Introduction

Research group of Dr. Abhishek Sirohiwal at the Department of Inorganic and Physical Chemistry, Indian Institute of Science (IISc), Bangalore, invites sealed bids under a two-cover system (Technical and Commercial bids) from reputed vendors for the supply, installation, and commissioning of a High-Performance Computing (HPC) Cluster.

1. Schedule of Events

Publication of tender	24th October 2025
Deadline of submission of pre-bid enquiries	31st October 2025
Release of corrigendum (if needed)	4th November 2025
Start of submission of bids	6th November 2025
Deadline of submission of bids	14th November 2025 (by 5 PM)
Opening of technical bids	17th November 2025 (expected)
Opening of commercial bids	To be declared later

2. Schedule of Requirements

1. The proposed cluster will consist of **one (1) Master Node, nine (9) Compute Nodes, one (1) GPU node, and two (2) Gigabit ethernet switches** along with the required cabling and accessories.

   Note: Some nodes will be expanded with additional components in the future. The bidder must make provisions for the same in the quoted hardware.

2. Software installation as specified.
3. Three (3) years' comprehensive on-site warranty with next business day support on all quoted hardware.

3. Technical Specifications - Hardware:

Given below are the specifications of the various hardware and software components of the computational cluster. All hardware must comply with Indian electrical standards.

Note: The bidders are informed that the cluster will be housed in an existing standard 42U rack in the Data Centre of the Chemical Sciences Building, IISc. Sufficient cooling and UPS power backup is available. The rack has two 3-phase PDUs with sufficient C13 power ports per phase. Indian-style power sockets are *not* available. The rack also has a physical laptop-style KVM installed with VGA and USB cable.

A. Master node – 1 no.

The HPC cluster requires one dedicated master node with the following specifications

1	1 X 2U rackmount enclosure with
	(a) 12 x 3.5" hot-swap SAS/SATA drive bays
	(b) 80 plus platinum-rated or better redundant power supply (RPS) with C13-C14 type power cords
	(c) Rackmount rail kit.
2	Dual socket motherboard with 24 DIMM slots available
3	2 x AMD EPYC 9135 Processors (16 cores, 32 threads, base clock 3.65 GHz, boost clock up to 4.3 GHz, 64 MB L3 cache, 200W TDP).
4	12 nos of 16 GB DDR5-4800 ECC memory. Total RAM will be 192 GB. The DIMMs must be populated to achieve the best possible memory bandwidth performance.
5	Storage:
	(a) 2 nos. of 4 TB enterprise class SATA SSD in RAID 1 configuration (for OS, apps, scheduler, etc.)
	(b) 3 nos. of 20 TB Enterprise SATA HDD in RAID 5 configuration (for /home and any special data partitions).
	(c) Note: Remaining 7 slots will be available for future expansion or addition of dedicated hot-spare drives.
6	1 x 12 GBPS Hardware RAID Controller with
	(a) minimum 1 GB cache
	(b) RAID 1 and 5 support
	(c) battery backup unit (BBU).
7	Dual 1 GbE (or higher speed) ethernet ports (for LAN and WAN)
8	One dedicated remote management port.
9	Remote management features with IPMI and both web-based and command line-based (CLI over SSH) interfaces.
10	Rear-side VGA port and USB port for KVM
11	At least two USB 3.2 ports

B: Compute Nodes (Type 1) – 7 nos.

The HPC cluster requires 7 compute nodes of "type 1", each with the following specifications:

1	1U Rack-mountable chassis per node with rack-mounting rail kit. Note: 2U chassis or other dense solutions are not acceptable.
2	Dual socket motherboard with 24 DIMM slots available

3	2 nos of AMD EPYC 9355 Processors per node (32 cores each, 64 threads, base clock 3.55 GHz, boost clock up to 4.4 GHz, 256 MB L3 cache, 280 W TDP).
4	24 nos of 16 GB DDR5-4800 ECC memory per node. Total RAM will be 384 GB per node. The DIMMs must be populated to achieve the best possible memory bandwidth performance.
5	Storage: 1 x 4TB NVMe SSD.
6	Dual 1 GbE (or higher speed) LAN ports
7	One dedicated remote management port.
8	Remote management features with IPMI and both web-based and command line-based (CLI over SSH) interfaces.
9	80-plus platinum-rated (or better) redundant power supply (RPS) per chassis with C13-C14 type power cords.
10	Rear-side VGA port and USB port for KVM
11	At least two USB 3.2 ports

C: Compute Nodes (Type 2) – 2 nos.

The HPC cluster requires 2 compute nodes of "type 2", each with the following specifications:

1	1U Rack-mountable chassis per node with rack-mounting rail kit. Note: 2U chassis or other dense solutions are not acceptable.
2	Dual socket motherboard with 24 DIMM total slots available
3	2 nos of AMD EPYC 9355 Processors per node (32 cores each, 64 threads, base clock 3.55 GHz, boost clock up to 4.4 GHz, 256 MB L3 cache, 280 W TDP).
4	12 nos of 32 GB DDR5-4800 ECC memory per node. Total RAM will be 384 GB per node. The DIMMs must be populated to achieve the best possible memory bandwidth performance. ***Important:*** There should be 12 free DIMM slots in the compute node for future expansion of the RAM.
5	Storage: 1 x 4TB NVMe SSD.
6	Dual 1 GbE (or higher speed) LAN ports
7	One dedicated remote management port.
8	Remote management features with IPMI and both web-based and command line-based (CLI over SSH) interfaces.
9	80-plus platinum-rated (or better) redundant power supply (RPS) per chassis with C13-C14 type power cords.
10	Rear-side VGA port and USB port for KVM
11	At least two USB 3.2 ports

D. GPU Node – 1 no.

The HPC cluster requires 1 GPU node with the following specifications:

1	4U Rack-mountable chassis per node with rack-mounting rail kit.
2	Dual socket motherboard and 24 DIMM slots available.

	Important: the motherboard should be able to support 8 GPUs and have slots for the same.
3	2 nos. of AMD EPYC 9135 Processors (16 cores, 32 threads, base clock 3.65 GHz, boost clock up to 4.3 GHz, 64 MB L3 cache, 200W TDP).
3	12 nos. of 16 GB DDR5-4800 ECC memory. Total RAM will be 192 GB. The DIMMs must be populated to achieve the best possible memory bandwidth performance.
4	2 nos of NVIDIA RTX Pro 5000 with 48 GB VRAM memory. *Important:* Up to 6 additional GPUs may be added later. The node should support this future expansion
4	Storage: 1 x 4TB NVMe SSD.
5	Dual 1 GbE (or higher) LAN ports
6	One dedicated remote management port.
7	Remote management features with IPMI and both web-based and command line-based (CLI over SSH) interfaces.
8	80-plus platinum-rated (or better) redundant power supply (RPS) per chassis with C13-C14 type power cords. ***Important***: The quoted power supply units should be able to provide full running power for 8 GPUs.

E. Network switches and cabling

1	2 nos. of 24 port 1 GbE ethernet switches (unmanageable). One for data and the other for remote management.
2	Sufficient ethernet cables (Category 6 or higher) must be provided for data and management should be provided.

4. Technical Specifications – HPC software requirements

Bidders should install the following all the software indicated below on the HPC cluster. Items 1-3 are considered essential for the purpose of initiation of payment processing.

1	**HPC clustering suite (Linux-based)*:*** Latest stable version of OpenHPC or xCAT2 with stateful provisioning of compute and GPU nodes, using the corresponding versions of Rocky Linux or Almalinux, as of the time of the installation of the cluster nodes. Suitable cluster monitoring tools with a graphical interface must also be installed.
2	**Queueing system:** SLURM Queues as per request and sample queue scripts for various CPU (with SMP and MPI parallelism) and GPU jobs must be provided.
3	**Compilers and essential software/libraries** • Latest GNU (gcc/gfortran) compiler versions as supported by the OS • Intel compilers (licensed version will be provided) • Latest stable OpenMPI to be compiled with both GNU and Intel compilers • Compiler and MPI libraries must be available to all compute and GPU nodes

	• Build tools: cmake • Environment modules with lmod • Python 3.12 and latest versions of numpy and scipy. These must be installed on all nodes. A few more standard python packages may be requested on site. • BLAS, LAPACK, MKL • CUDA and GPU-enabled libraries installed on GPU nodes.
4	**Quantum chemistry and simulation software:** Binaries/sources will be provided for the installation of the following software, including software licenses where applicable. VMD, CATDCD, NAMD, GROMACS, AMBER, OPENMM, CP2K, ORCA, TURBOMOLE, QChem, MNDO, SHARC, OPENMOLCAS, BAGEL, GAUSSIAN, xTB, DFTB+

5. Bidder Eligibility Criteria

1. The bidder should be an Indian Original Equipment Manufacturer (OEM) or an OEMs Indian authorized distributor.
2. The bidder must provide a **Manufacturer Authorization Form** from the OEM for quoting for the requirement of this tender.
3. The bidder should have both a sales office and a service center in Bangalore and should have been in operation in Bangalore for at least five (5) years as of the date of submission of the bids. **Supporting documentation** should be provided.
4. The OEM should have its own or authorized service centre facilities in Bangalore. It is preferable that the OEM has a registered office in India. **Supporting documentation** should be provided.
5. The bidder should have completed the set-up of at least 3 high performance computational clusters in reputed educational/research institutions or reputed public/private companies in the last 3 years, with at least one installed cluster having 512 physical cores or higher and with at least one cluster that has one or more GPU nodes.

   The bidder must **submit** (a) a summary as per Annexure 2, (b) copies of the purchase orders of these HPC installations, (c) copies of completion certificates of these installations, (d) contact information of the responsible individual at these institutions or companies who may be contacted for further information. The technical committee of this tender reserves the right to verify the submitted information.
6. The Bidder should not be currently blacklisted by any institution or bank in India. **Supporting document:** A declaration to this effect should be provided; see Annexure **3**.

7. Bidder class and local content declaration:

    a. The bidder should follow the terms and conditions in Government of India's Public Procurement Policy (Preference to Make in India) as per notification no. P-45021/2/2017-PP (BE-II), dated 16th Sep 2020.

    b. The technical bid must contain a separate document clearly indicating whether the bidder is a 'Class I' local supplier or a 'Class II' local supplier for the quoted items. The Bidder should belong to either Class-1 or Class-2 suppliers distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter. a) Class-1 supplier: Goods and services should have local content of equal to or more than 50%. b) Class-2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.

    Also, the bidder should also indicate the percentage of the local content and give details of the location(s) at which the local value addition is made. The bidder should also provide self-certification the items offered meet the minimum local content requirement as per the GoI's PPP policy as per the notification.

    Bidders offering imported products will fall under the category of non-local suppliers. They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming the services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.

    c. The above information should also be clearly mentioned in the commercial bid.

    d. A bid not containing these documents with the required information would be rejected.

    e. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to the Class-1 supplier

    f. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details.

6. Commercial (Price) Bid

1. An itemized list, clearly indicating both unit price and total price of the following items, as per the specifications in this tender, must be provided.

    (a) Master node
    (b) 7 nos. of "type 1" compute nodes.
    Note: Both unit price and total price (both. excl. GST) must be given.
    (c) 2 nos. of "type 2" compute nodes.
    Note: Both unit price and total price (both excl. GST) must be given.
    (d) 1 no GPU node.

(e) 2 nos. of network switches.
Note: Both unit price and total price must be given.
(f) Installation and commissioning charges.

For each line item, the GST rate and the total price including GST should be indicated. Finally, a total price without and with GST should be given. Sample format for the price tabulation in the commercial bid is given in **Annexure 6**.

2. The prices must include delivery on site at the Chemical Sciences Data Centre, IISc Bangalore.
3. The quoted prices for the hardware must also include three (3) years' comprehensive warranty services.
4. The quotations should be on **FOR-IISc Bangalore** basis in INR only.
5. **Validity:** The price bid should be valid for 60 days from the date of the submission of the bids.
6. The vendor class, i.e "Class 1" or "Class 2" local supplier, and percentage of local content must be clearly specified. A declaration that the items provided meet the minimum local content requirement should also be given.

7. Warranty Terms

1. The bidder should provide a three (3) years' comprehensive warranty on the products with next business day support, beginning from the date of successful installation and acceptance of the solution.
2. The bidder shall attend to all hardware issues on site. If any parts are found defective, either during installation or during the warranty period, the bidder shall replace them at no extra cost to the purchaser.
3. The OEM should provide an undertaking that they will provide all necessary technical support to the bidder during the warranty period.
4. The bidder should provide the contact details of HPC engineers who can be reached to address any issues faced.

8. Performance Security or Performance Bank Guarantee

The successful bidder(s), on whom order will be placed has to submit a performance security of 3% of the total order value within one week from the date of PO. It is to be submitted in the form of RTGS / NEFT / Bank Guarantee/ Demand Draft / FDR from any Nationalized/Scheduled commercial Bank in India (as per RBI list) in favour of the Registrar, IISc, Bangalore. Failure to submit the performance security may result in the cancellation of the order.

Performance security should remain valid for a period of three months beyond the date of completion of all contractual obligations (including warranty period) of the successful bidder. No interest will be payable by IISc, Bangalore on the

performance security deposited. In case the bidder fails to provide satisfactory service or supply, the performance security submitted by the bidder is liable to be forfeited. The performance security will be forfeited in case of violation of any terms & conditions of the purchase order or agreement done thereof by the successful bidder. An **undertaking** to this effect is to be submitted in the technical bid.

9. Delivery, Installation, Commissioning and Acceptance

1. The bidder must submit a letter of acceptance of the purchase order within 3 working days of the release of the same and indicate a commitment to complete the supply of items as per tender terms.
2. **The delivery of the hardware must be within 4-6 weeks of the release of the purchase order**.
3. The successful bidder must carry out the physical installation of the nodes and network switches in the provided rack in the Data Centre of the Chemical Sciences building. The master and compute nodes must be interconnected via the data and management switches. The rack's PDUs must be so utilized that the power drawn in each phase is balanced. All power and ethernet cables must be tagged on both ends. Suitable cable management must be carried out.
4. Following physical installation, the successful bidder must demonstrate that the hardware components are as per tender specifications.
5. The successful bidder should carry out the clustering of the nodes and install standard and computational chemistry software as specified in Section 4. The bidders may be requested to install a few additional pieces of software as well.
6. The successful bidder should create standard job submission queues, the parameters for which be specified on site at the time of software installation. The smooth execution of jobs in these queues must be tested and demonstrated to the satisfaction of the end users.
7. Training of users about how to administer the HPC cluster should be provided. This should be complemented by a detailed and *site-specific* documentation on cluster installation in terms of both hardware and software.
8. All the hardware and essential software installation activities indicated above should be completed within one week after the delivery. Payment processing will be carried out only thereafter. The successful bidder must install the quantum chemistry and simulation software within one additional week thereafter.
9. The successful bidder must also provide technical support with not just hardware but also software related issues during the warranty period.

10. Payment terms

1. IISc shall release 100% payment only after completion of delivery, hardware and essential software installation, and acceptance of the solution by the purchaser, as well as production of a performance security / performance bank guarantee by the bidder.
2. The bidder will be asked to provide two invoices for the same total final price. Payments will be processed against both invoices concurrently.
3. Payments will be subject to TDS as per rules.
4. No partial or early payment requests will be entertained.

11. Other terms and conditions

1. **Organization of the bid:**

   The bidder must organize the documents in the following order and provide all required supporting documentation. ***Note:*** IISc reserves the right to disqualify any bid that is not organized as indicated below or fails to provide the required data or documentation.

   a. A cover letter from the bidder. The letter should certify that the submitted bid complies with all the requirements of the tender. It should also certify that the bidder agrees to all the terms and conditions set forth in the tender, including the commercial terms, payment terms, and warranty terms. The letter must also indicate whether the bidder of a "Class 1" or a "Class 2" local supplier.

   b. A table of contents indicating the page numbers of each of the following required information.

   c. A table of information about the bidder as per **Annexure 1** should be provided, clearly indicating the sales contact person for this tender and the technical support engineer for the solution provided.

   d. Copy of the registration documents of the bidder, clearly indicating the date since when the bidder has been in operation.

   e. Copy of the registration of the sales and service offices in Bangalore.

   f. Self-certificate indicating that the bidder is not black-listed by any Institution or Bank in India, as per the format in Annexure 3.

   g. Copy/screenshot of the vendor registration of the bidder with IISc, clearly indicating the bidder's name and vendor code.

   h. Letter from OEM indicating their registered office address in India and service centre address in Bangalore.

   i. Manufacturer Authorization Form from the OEM.

   j. Undertaking from the bidder about the terms of the performance security.

k. Declaration of acceptance of terms and conditions of this tender, as per the format in Annexure 4.

l. Detailed technical specifications in tabular form of the hardware solution provided as per the requirements given in Section 3. The bidder must clearly indicate their compliance to each line item in that section. The bidder must also provide the make/model of each of the components of the various nodes indicated in the technical requirements. Please use the format in **Annexure 5**. *Note:* Relevant product specification sheets must be included at the end of the bid.

m. A declaration letter by the bidder that the software installation requirements will be met be a competent team of HPC engineers from the bidder's side.

n. A masked commercial bid. This should be the same as the actual commercial bid *except* that all price information is fully masked or removed. However, the terms of the commercial bid must be retained.

o. **Important:** Declaration of compliance with the provisions of Office Memorandum P-45021/2/2017-PP (BE-II), dated 16th Sep 2020, issued by Public Procurement Division, Department of Expenditure, Ministry of Finance, Government of India.

The bidder must submit documents to support their "Class 1" or "Class 2" local supplied status and that the items offered meet the minimum local content requirement.

p. The percentage of local content must be clearly indicated the percentage of local content as well as the details of the location(s) at which the local value addition is made.

q. Supporting documentation from the bidder of earlier HPC installations as per in clause 5.5 above. Summary as per annexure 2, copies of the relevant purchase orders, completion certificates and contact information of individuals responsible at the purchasing site must be provided.

r. Relevant specification sheets for the various components (e.g chassis, motherboard, etc.)

2. Incomplete bids will be rejected.

3. Additional one CPU node may be procured from the successful bidder at the same per-node cost as the final commercial price. Additional 2 GPU cards may also be procured from the successful bidder.

4. Delivery and installation of the cluster shall be the complete responsibility of the vendor. Any items or parts that are damaged during delivery or installation will be returned without payment, with the vendor having to replace them at no extra cost to the purchaser. The payment will be made only after the replacement and reinstallation of damaged items.

12. Submission of the bid

1. This tender will follow a two-cover bid system. The **hard copies** of the technical bid and commercial bid should each be placed in separate sealed covers and clearly superscribed accordingly. The covers should also indicate the name of bidder and the tender number. The larger envelope containing the other two covers should superscribed "Bid for High Performance Computing Cluster" along with the tender number and the name of the bidder.
2. The **hard copy of the bids** should reach the following address by or before the deadline of the submission of the bids.

   Dr. Abhishek Sirohiwal
   Dept. of Inorganic and Physical Chemistry
   A102, Chemical Sciences Building
   Indian Institute of Science
   Bangalore 560012

3. A soft copy of the technical bid alone should be sent as a single consolidated pdf to the following address: asirohiwal@iisc.ac.in. ***Note:*** pdf of the technical bid should not contain the commercial bid. Any mention of the price bid will result in immediate disqualification of the bidder.

Annexure 1: Bidder details

No.	Item	Details
1	Name of the bidder	
2	Name of OEM	
3	Bidder's website	
4	Address of registered office address in Bangalore	
5	Postal address for communication	
6	Contact person for this tender:	*Give name, designation, telephone number and email address*
7	Address of registered service office in Bangalore	
8	Contact person of HPC engineer responsible for installation and service of provided solution.	*Give name, designation, telephone number and email address*
9	Vendor registration code at IISc	

Signature of the bidder

Name Date
Designation, seal

Annexure 2

A declaration regarding the experience

To,
The Chair,
Department of Inorganic and Physical Chemistry,
Indian Institute of Science,
Bangalore – 560012

Ref: Tender Number XXXX

Supply and installation of the HPC cluster

Dear Sir,

I have carefully reviewed the Terms and Conditions outlined in the above-referenced tender. I hereby declare that my company/firm has **XXXXXX** years of experience in supplying and installing the items mentioned in the present tender. We have installed XXXX HPC facilities as per clause 5.5 of this tender, the details of which are shown below.

Sl. No.	HPC cluster installation location	Date of installation	Technical Specification of HPC

Yours faithfully (Signature of the bidder)

Printed name, designation, seal

Date:

Annexure 3: ***Track record declaration***

To,
The Chair,
Department of Inorganic and Physical Chemistry,
Indian Institute of Science,
Bangalore – 560012

Ref: Tender No: XXXXXXXXXX
Dated: XXXXX

Supply and Installation of HPC Cluster

Dear Sir,
I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred /blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or
I declare the following

Sl. No	**Country in which the company is Debarred /blacklisted / case is Pending**	**Blacklisted / debarred by Government / Semi Government/Organizations/Institutions**	**Reason**	**Since when and for how long**

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully (*Signature of the Bidder*)
Name, Designation, Seal
Date:

Annexure 4: ***Declaration for acceptance of terms and conditions***

To,
The Chair,
Department of Inorganic and Physical Chemistry,
Indian Institute of Science,
Bangalore – 560012

Ref: Tender No: XXXXXXXXXX
Dated: XXXXX

Supply and Installation of HPC Cluster

Dear Sir,
I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully (*Signature of the Bidder*)
Name, Designation, Seal
Date:

Annexure 5: ***Details of items quoted and compliance***

S No.	Description	Quantity	Make/Model	Compliance
1	Master node (Give component-wise description)			
2	Compute node "type 1" (Give component-wise description)			
3	Compute node "type 2" (Give component-wise description)			
4	GPU node (Give component-wise description)			
5	Gigabit ethernet switches			
6	Accessories (if any)			

Annexure 6: Commercial Bid Format

The commercial bid should be furnished with all requirements of the tender with supporting documents as mentioned under:

S No.	Description	Quantity	Unit price (w/o GST)	Sub-total (w/o GST)	GST rate	Sub-total (with GST)
1	Master node (Give brief description)					
2	Compute node "type 1" (Give brief description)					
3	Compute node "type 2" (Give brief description)					
4	GPU node (Give brief description)					
5	Gigabit ethernet switches					
6	Accessories (if any)					
7	Installation and commissioning					
	Grand total					