



BHARAT HEAVY ELECTRICALS LIMITED
(A Government of India Undertaking)
INDIA

Expression of Interest
from Prospective Testing Laboratories
for

**Empanelment of NABL Accredited Testing
Laboratories for Biomass, Syngas and Fuel
Analysis**

for BHEL Corporate R&D, Hyderabad

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SECTION-1 DISCLAIMER

1.1 The information contained in this Expression of Interest (EOI) document is provided to the Prospective Testing Laboratories, by or on behalf of Bharat Heavy Electricals Limited (BHEL) or any of its employees or advisors on the terms and conditions set out in this EOI document and all other terms and conditions subject to which such information is provided.

1.2 This invitation to EOI document does not purport to contain all the information that each Prospective Testing Laboratories may require.

This invitation to EOI document may not be appropriate for all persons/organizations, and it is not possible for BHEL, its employees or advisors to consider the business/investment objectives, financial situation and particular needs of each Prospective Testing Laboratories who read or use this invitation to EOI document.

Prospective Testing Laboratories should conduct their own investigations and analysis and should check the accuracy, reliability and completeness of the information in this invitation to EOI document and where necessary, obtain independent advice from appropriate sources.

1.3 BHEL, its employees and advisors make no representation or warranty and shall incur no liability under any law, statute, rules or regulations as to the accuracy, reliability or completeness of the invitation to EOI document.

1.4 BHEL may at any time, in its absolute discretion, but without being under any obligation to do so, modify, amend or supplement the information in this invitation to EOI document.

1.5 The issue of this EOI does not imply that BHEL is bound to select and shortlist any or all the Prospective Testing Laboratories.

Even after selection of suitable Prospective Testing Laboratories, BHEL is not bound to proceed ahead with the participation in any or all business opportunities and in no case be responsible or liable for any commercial and consequential liabilities in any manner whatsoever.

1.6 The Prospective Testing Laboratories shall bear all costs associated with the preparation, technical discussion/presentation and submission of EOI.

BHEL shall in no case be responsible or liable for the costs regardless of the conduct or outcome of the EOI process.

1.7 Canvassing in any form by the Prospective Testing Laboratories or by any other agency on their behalf shall lead to disqualification of their proposals against this invitation to EOI.

SECTION-2

TIMELINES OF EOI PROCESS & CONTACT DETAILS

2.1 TIMELINE OF EOI PROCESS

The schedule of activities of the EOI Process shall be as follows -

Sl. No.	Description	Date
1	Publishing of Notice for EOI document	28.02.2026
2	Last date of Submission of EOI response (BHEL will reserve the right of extension of the date)	02.04.2026 (Originally 18.03.2026)

2.2 CONTACT DETAILS:

All the correspondence shall be marked to the following:

Mr Abhishek Kumar Pandey Manager Clean Energy Systems Lab, Corporate R&D Bharat Heavy Electricals Limited (BHEL), Hyderabad, India, PIN 500042 Tel:(+91)- 8099488494 E-Mail: ak.pandey@bhel.in	Mr. A. Gunasekaran Deputy General Manager Clean Energy Systems Lab, Corporate R&D Bharat Heavy Electricals Limited (BHEL), Hyderabad, India, PIN 500042 Tel:(+91)- 8331949185 E-Mail: aguna@bhel.in
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2.3 GUIDELINES FOR EOI SUBMISSION

The Prospective Testing Laboratories shall forward their documents as part of EOI, to the e-mail of the contact persons indicated above.

The language for all correspondence shall be English.

The size of the e-mail (with attachments) may be restricted to 15 MB due to constraint at receipt. The attachments may be split and sent in no. of e-mails clearly mentioning in subject of mail 'Mail 1 of N', Mail 2 of N etc.

SECTION – 3

About BHEL

3.1 BHEL

Bharat Heavy Electricals Limited (BHEL) is a Central Public Sector Enterprise under ministry of Heavy Industry and Public Enterprises, Government of India.

It is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing companies of its kind in India having a turnover of around US \$ 2.6 billion and is a company listed in stock exchanges of India.

The company is engaged in the design, engineering, manufacture, construction, testing, commissioning and servicing of a wide range of products and services for the core sectors of the economy, viz. Power, Transmission, Industry, Transportation, Renewable Energy, Water Management, Oil & Gas and Defence with over 180 product offerings to meet the needs of these sectors.

BHEL has been in the business for more than 50 years and BHEL supplied power equipment account for about 58% of the total thermal generating capacity in India.

The company has highly skilled and committed manpower of approximately 30,000 employees spread across 16 manufacturing units, 4 project execution units, 9 service centres and 15 regional offices besides host of project sites spread all over India and abroad.

BHEL has its footprint in all the inhabited continents with references in 90 countries with cumulative overseas installed capacity of BHEL manufactured power plants nearing 10,000 MW.

BHEL invests more than 2.5% of turnover on R&D and innovation.

More details about the entire range of BHEL's products and operations can be seen at www.bhel.com.

SECTION – 4

EOI

4.1 OBJECTIVE OF THIS EOI:

The objective of this EOI is to empanel prospective NABL-accredited Testing Laboratories (Indian or Global) capable of carrying out analytical testing of Biomass, Biomass Ash, Syngas, Methanol and Di-Methyl Ether (DME) as per specified ASTM / IS standards.

The empanelled laboratories shall provide analytical testing services related to biomass gasification, syngas characterization, and downstream fuel quality assessment.

Typical Samples will involve Coal, Biomass, Lignite, Syngas, Methanol, DME, Other C1-C2 compounds, trace elements in Solid fuels, impurity gases in other matrices etc.

4.2 INFORMATION REQUIRED FROM RESPONDENTS TO EOI:

Testing Laboratories are expected to furnish

- Filled in Annexures 1, 2 and 3 as per SECTION 6
- Valid NABL Accreditation Certificate (ISO/IEC 17025) indicating scope of accreditation
- Detailed scope of accreditation highlighting relevant test methods
- List of major equipment/instruments available (e.g., CHNS Analyzer, Muffle Furnace, Ash Fusion Furnace, ICP-OES, GC-TCD, GC-MS etc.)
- Details of qualified technical manpower
- Past experience in similar testing assignments (without confidential details)
- Sample test report formats (non-confidential)
- Confirmation of capability to perform the following tests:

A. Biomass & Ash Analysis:

1. Proximate Analysis of Biomass as per ASTM D7582
2. Ultimate Analysis of Biomass as per ASTM D5373
3. Ash Fusion Temperature as per ASTM D1857
4. Ash Chemical Composition as per ASTM D6349

B. Gas Analysis:

5. Syngas Composition Determination (CO, CO₂, H₂, CH₄, N₂) using appropriate GC-based methods

C. Liquid Fuel Analysis:

6. Methanol Purity Testing as per IS 517
7. Di-Methyl Ether (DME) Purity Testing as per ASTM D7901

Additionally, laboratories must provide:

- 1) Clear indication of which tests are NABL accredited and which are not
- 2) Sample collection charges from Nacharam Industrial Area, Hyderabad

- 3) Turnaround time (TAT) for issue of reports after receipt of samples
- 4) Minimum sample quantity requirements

4.3 ELIGIBILITY CONDITIONS FOR PROSPECTIVE TESTING LABORATORIES

1. **Accreditation & Compliance:**

- Must possess valid NABL accreditation (ISO/IEC 17025) for the testing Lab/facility.
- For non-accredited tests, laboratory must clearly declare internal validation status.

2. **Technical Capability & Infrastructure:**

Laboratory must have capability in one or more of the following areas:

A. Solid Fuel / Biomass Testing:

- Proximate Analysis (Moisture, Ash, Volatile Matter, Fixed Carbon)
- Ultimate Analysis (C, H, N, S, O determination)
- Ash Fusion Temperature determination
- Ash chemical composition using ICP-OES / AAS / XRF
- Experience in handling biomass, agro-residues, pellets, briquettes etc.

B. Gas Analysis Capability:

- Availability of Gas Chromatograph (GC-TCD / GC-FID / GC-MS)
- Capability to analyze syngas components:
 - CO
 - CO₂
 - H₂
 - CH₄
 - N₂
 - Experience in calibration with certified gas standards
 - Capability for trace impurity analysis (if applicable)

C. Liquid Fuel & Chemical Testing:

- Methanol purity testing as per IS 517
- DME purity testing as per ASTM D7901
- Capability for moisture, density, composition, and impurity determination
- Experience in testing industrial chemicals and fuel-grade products

3. **Experience:**

- Minimum 2 years of experience in fuel / biomass / gas / petrochemical testing

- Experience of serving government organizations / PSUs / industrial clients is preferred.
- Ability to provide analytical reports suitable for regulatory, statutory, R&D and commercial purposes

4. Logistics & Reporting Capability:

- Ability to arrange sample collection from Nacharam Industrial Area, Hyderabad (or provide clear courier protocol)
- Defined Turnaround Time (TAT) for each test
- Digital and hard copy reporting capability
- Ability to provide urgent / priority testing services if required

4.4 RESULT OF EOI:

Identification of Competent Testing Laboratories and Establishment of Competitive Pricing Benchmarks for the testing requirements of BHEL R&D. Based on the data furnished, BHEL will register the Laboratories / Organizations in their database for utilising their services.

4.5 INSTRUCTIONS

a) A prospective Laboratory / Organization requiring any clarification to the EOI documents may notify the same through e-mail or by post at the address indicated in Section 2 of this EOI.

BHEL will respond to any request for clarification or modification of the EOI.

Prospective Laboratory / Organization are advised to regularly visit BHEL's website for clarifications, modifications if any.

b) BHEL at their sole discretion may Communicate with the Laboratory / Organization for evaluation and may call for physical / virtual interaction, if required.

4.6 MISCELLANEOUS:

Right to accept or reject any or all Applications:

- i) Notwithstanding anything contained in this invitation to EOI, BHEL reserves the right to accept or reject any EOI and to annul the EOI Process and reject all EOIs at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reasons, thereof.
- ii) BHEL reserves the right to disqualify prospective Laboratory / Organization during or after completion of EOI process, if it is found there was a material misrepresentation by any such prospective Laboratory / Organization or the prospective Laboratory / Organization fails to provide within the specified time, supplemental information sought by BHEL.

- iii) BHEL reserves the right to verify all statements, information and documents submitted by the Prospective Laboratory / Organization in the EOI. Any such verification or lack of such verification by BHEL shall not relieve the Prospective Laboratory / Organization of their obligations or liabilities hereunder nor will it affect any rights of BHEL.

4.7 Governing Laws & Jurisdiction:

The EOI process shall be governed by, and construed in accordance with, the laws of India and the Courts at Hyderabad (India) shall have exclusive jurisdiction over all disputes arising under, pursuant to and / or in connection with this EOI process.

4.8 Documents required to be submitted:

As per check-list given in Section-5.

SECTION-5

CHECK LIST FOR DOCUMENTS TO BE FORWARDED ALONG WITH EOI

Prospective Testing Laboratories should submit following documents (additional sheets can be added as required) along with their Proposal:

Sl. No.	Document Description	Format	Respondent's confirmation (Yes / No / Not Applicable)
1.	General information (Testing Laboratory)	Annexure - 1	
2.	Specific Technical & Commercial Information	Annexure-2	
3.	Test Capability Matrix	Annexure-3	
4.	Valid NABL Certificate	-	
5.	Sample Test Reports/Blank Templates	-	
6.	List of Clients (Non-confidential) (Industries, R&D Organizations, PSUs, Educational Institutes)	-	
7.	Work Experience certificate/ Analysis carried out Certificates issued by Clients/Customers	-	
8.	Details (Non-confidential) of Tests available (NABL and Non-NABL) and Facilities/Equipment available at the Laboratory (especially related to Coal, Biomass and Chemicals/Fuels Testing)	-	
9.	About the Laboratory/Company/Organization (1-2-page write-up)	-	
10.	Any other document (please mention the titles)	-	

SECTION-6 Annexure – 1

General Information (Testing Laboratory)

Date:

Sl. No.	Description	Respondent's information/response																								
1.	Name of Laboratory / Organization																									
2.	Country of origin of the Laboratory / Organization																									
3.	Year of constitution/establishment:																									
4.	Legal Status: <input type="checkbox"/> Government Laboratory <input type="checkbox"/> Public Sector Undertaking <input type="checkbox"/> Private Limited <input type="checkbox"/> LLP <input type="checkbox"/> Partnership <input type="checkbox"/> Others (Specify) _____																									
5.	NABL Accreditation Details: A. NABL Certificate Number: _____ (copy to be enclosed) B. Validity Period: _____ C. Scope of Accreditation Enclosed: <input type="checkbox"/> Yes <input type="checkbox"/> No D. ISO/IEC 17025 Compliant: <input type="checkbox"/> Yes <input type="checkbox"/> No																									
6.	Laboratory Location(s) (indicate multiple locations, if available, with their details: <table border="1"> <thead> <tr> <th>Sl. No.</th> <th>Location Name</th> <th>Contact Person</th> <th>Email</th> <th>Phone Number</th> <th>Address</th> </tr> </thead> <tbody> <tr> <td>i.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>ii.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>iii.</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </tbody> </table> Use more rows if required.	Sl. No.	Location Name	Contact Person	Email	Phone Number	Address	i.						ii.						iii.						
Sl. No.	Location Name	Contact Person	Email	Phone Number	Address																					
i.																										
ii.																										
iii.																										
7.	Correspondence Address of the Main Laboratory/Head Quarter:																									
8.	Contact Details of Concerned Person at the Main Laboratory/Head Quarter: Name: _____																									

	Designation: _____ Mobile Number: _____ Email ID: _____	
9.	Major Testing Infrastructure Available (Tick & Specify): <input type="checkbox"/> CHNS / Elemental Analyzer <input type="checkbox"/> Proximate Analyzer (TGA-based) <input type="checkbox"/> Ash Fusion Furnace <input type="checkbox"/> ICP-OES / ICP-MS <input type="checkbox"/> XRF <input type="checkbox"/> Gas Chromatograph (GC-TCD) <input type="checkbox"/> Gas Chromatograph (GC-FID) <input type="checkbox"/> GC-MS <input type="checkbox"/> Karl Fischer Titrator <input type="checkbox"/> Other (Specify) _____	

Declaration:

We hereby confirm that the information provided above is true and correct.

(Signature of Authorized Signatory)

Name:

Designation:

Address:

Date:

SECTION-6 Annexure – 2

Specific Technical & Commercial Information

Date:

Sl. No.	Description	Respondent's information/response
1.	Name of Laboratory / Organization:	
2.	Experience Details: A. Total Years of Experience in Fuel / Biomass / Gas / Chemical Testing: _____ Years Experience in NABL Accredited Testing: _____ Years	
3.	Gas Analysis Capability (if applicable) A. GC Type Available: <input type="checkbox"/> TCD <input type="checkbox"/> FID <input type="checkbox"/> MS B. Calibration using Certified Gas Standards: <input type="checkbox"/> Yes <input type="checkbox"/> No C. Mention Typical Detection Limits Available: D. Experience in Syngas / Industrial Gas Testing: <input type="checkbox"/> Yes <input type="checkbox"/> No	
4.	Liquid Chemical Testing Capability A. Experience in Industrial Solvent Testing: <input type="checkbox"/> Yes <input type="checkbox"/> No B. Ability to Test Methanol as per IS 517: <input type="checkbox"/> Yes <input type="checkbox"/> No C. Ability to Test DME as per ASTM D7901: <input type="checkbox"/> Yes <input type="checkbox"/> No	
5.	Past Experience A. Experience with Government / PSU / Industrial Clients: <input type="checkbox"/> Yes <input type="checkbox"/> No B. List of Major Clients (Non-confidential): _____ C. Sample Test Report Enclosed: <input type="checkbox"/> Yes <input type="checkbox"/> No	

Declaration:

We hereby confirm that the information provided above is true and correct.

(Signature of Authorized Signatory)

Name:

Designation:

Address:

Date:

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SECTION-6 Annexure – 3

Test Capability Matrix

(Please indicate “Y” or “N” and specify whether NABL Accredited)

Date:

Sl. No	Test Description with applicable standard	Applicable Standard	Testing Capability (Y/N)	NABL Accredited (Y/N)	Test Method / Instrument Used	Turn Around Time (in Days)	Sampling Available from Hyderabad (Y/N)	Sample Collection Charges (in INR)	Typical Charges for the test (in INR)
1.	Proximate Analysis of Biomass	ASTM D7582							
2.	Ultimate Analysis of Biomass	ASTM D5373							
3.	Ash Fusion Temperature of Biomass	ASTM D1857							
4.	Ash Chemical Composition of Biomass	ASTM D6349							
5.	Proximate Analysis of Coal	ASTM D7582							
6.	Ultimate Analysis of Coal	ASTM D5373							

E IOI Reference Number: BHEL/RND/IOI/CES/003, Rev 01 Dated 18.03.2026

7.	Ash Fusion Temperature of Coal	ASTM D1857							
8.	Ash Chemical Composition of Coal	ASTM D6349							
9.	Syngas Composition (CO, CO ₂ , H ₂ , CH ₄ , N ₂)	Relevant GC methods							
10.	Methanol Purity	IS 517							
11.	DME Purity	ASTM D7901							

Declaration:

We hereby confirm that the information provided above is true and correct. We agree to perform the indicated tests as per the specified standards and provide reports within the declared turnaround time.

(Signature of Authorized Signatory) Name:

Designation:

Address:

Date: