

BHARAT HEAVY ELECTRICALS LIMITED

(A Government of India Undertaking)

SOLAR BUSINESS DIVISION

Prof. CNR Rao Circle, Opp. IISc., Malleshwaram,

Bengaluru, Karnataka

INDIA

Invites

**Expression of Interest from Potential partners
for Utilizing of 200 MW SPV module manufacturing
line inside BHEL SBD premises.**

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SECTION-1

DISCLAIMER

- 1.1 The information contained in this Expression of Interest (EOI) document is provided to the Interested partners, 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 Interested partners may require.
- This invitation to EOI document may not be appropriate for all persons, and it is not possible for BHEL, its employees or advisors to consider the business/investment objectives, financial situation and particular needs of each Interested partners who reads or uses this invitation to EOI document.
- Interested partners should conduct his 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 Interested partners.
- Even after selection of suitable Interested partners, 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 Interested partners shall bear all costs associated with the preparation, technical discussion/presentation and submission of EOI.
- BHEL in no case shall 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 Interested partners 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.	Activity	Date
1	Publishing of Notice for EOI document	13.05.2025
2	Last date of submission of queries	20.05.2025
3	Last date of submission of EOI response	27.05.2025 14:00 hrs
4	Opening of EOI responses	27.05.2025 14:30 hrs

2.2 CONTACT DETAILS:

All the correspondence shall be marked to the following

To, Shri Shivananda Kumar G
Sr DGM/SBD
Bharat Heavy Electricals Limited
Solar Business Division
Prof. CNR Rao Circle, Opp. IISc.,
Malleshwaram,
Bengaluru 560 012,
Karnataka, INDIA

E-Mail: shivanand.kumar@bhel.in
Mob: +91 9663746479

2.3 GUIDELINES FOR EOI SUBMISSION:

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

The size of the e-mail (with attachments) to be restricted to 15 MB due to constraint at receipt. In case of size exceeding 15 MB, the attachments can be split and sent through multiple e-mails clearly mentioning in subject of mail 'Mail 1 of N', Mail 2 of N and so on.

SECTION – 3

ABOUT BHEL

3.1 ABOUT 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 \$ 2.70 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 Defense, Battery Energy storage systems, E-Mobility etc. with over 180 product offerings to meet the needs of these sectors.

BHEL has been in the business for more than 55 years and BHEL supplied power equipment account for about 58% of the total thermal generating capacity in India with installations over 193 GW.

The company has highly skilled and committed manpower of approximately 28500 employees spread across 16 manufacturing units, 4 project execution units, 8 service centers 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 82 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

3.2 SOLAR BUSINESS DIVISION (SBD):

Solar Business Division (SBD) is a Unit of BHEL located in Bengaluru, Karnataka State in Southern India and engaged in execution of Solar PV project. BHEL is one of the leading EPC Player in Solar PV market having a Portfolio of more than 1.42 GW comprising ground-mounted, canal-top, rooftop and floating solar. However, this is only 1.38% of the country's total 102.56 GW of solar power plants installed as on 28.02.2025 (Source: MNRE, Govt. of India). Therefore, to increase the footprints in Solar, BHEL is exploring various options to address wide range of business opportunities in Solar segment.

SECTION – 4

SOLAR EPC BUSINESS

4.1 National Solar Mission:

India has declared a goal to become energy independent by 2047 and achieve Net Zero by 2070. As the recent COP26 shifted the goalpost from 450 GW to 500 GW capacity for Renewable energy comprising of solar, wind, hybrid energy sources, hydrogen, biofuels etc. Out of this 500 GW, Solar is expected to contribute around 55% of the overall installed capacity i.e. around 275 GW. As per the latest data available from MNRE, the current Solar installed capacity is around 102.56 GW (including Hybrid, off-grid & PM Surya Ghar Muft Bijli Yojna). Therefore, there is a huge potential in the segment as around 173 GW Solar power is to be installed in next 6 years in the country to meet the ambitious targets of Gol.

SECTION – 5

Expression of Interest (EOI)

BHEL's solar PV manufacturing facility is strategically located in Bengaluru, a central hub with excellent connectivity via rail, road, and sea, making it accessible to all parts of the country.

BHEL invites potential partners having experience in the solar field as well as having average annual turnover not less than 0.464 Million USD (Rs 4 Crores) in the last 3 years (upto FY 2024). Interested partners are requested to submit their proposal as per the details mentioned in this EOI.

Scope of EOI

BHEL seeks a strategic partner who can:

- utilize BHEL SBD's 200 MW PV Module Manufacturing line and take up manufacturing
- explore and offer any mutually beneficial PV business

5.1 BHEL Scope:

1. Providing right to use the existing 200 MW Solar PV module manufacturing line with covered space (list of assets as per Annexure 9) of area 4250 Sq. Mt.
2. Providing covered space with the area 5500 Sq. Mt. for packing of modules, raw materials and finished goods storage area for module manufacturing.
3. Providing open land area 4000 Sq. Mt.
4. Providing electricity and water and other amenities
5. Providing available office space for the staff and engineers

5.2 ELIGIBILITY CONDITIONS FOR PROSPECTIVE PARTNERS:

The Prospective partner(s) Government owned legal entity, Public sector organizations, Private organizations, who are already engaged in Solar business.

5.3 QUALIFYING CRITERIA:

5.3.1 TECHNICAL:

- I. The partner must have experience in Solar PV business (Manufacturing/EPC/I&C,O&M services, RESCO, etc.).

5.3.2 FINANCIAL:

- I. The average annual turnover of prospective partner should not be less than 0.464 Million USD (Rs 4 Crores) in the last 3 years (upto FY 2024).
- II. In the case Prospective partner (s) is Consortium or Joint Venture, then either of the partner individually should qualify criteria for Technical and Financial parameters.

5.4 EXCLUSIVITY:

Partners will be empanelled on non- exclusive agreement basis.

5.5 GENERAL TERMS AND CONDITIONS:

5.5.1 Language of proposal: All correspondences and documents related to EOI submission shall be in English language, provided that any printed literature furnished by the Prospective Partner(s) may be written in another language, as long as such literature is accompanied by a translation of its pertinent passages in English language in which case, for purposes of interpretation of the proposal the English translation shall govern.

5.5.2 Prospective partner (s) requiring any clarification to the EOI documents may notify the same through e-mails provided in this EOI. BHEL will respond to any request for clarification or modification of the EOI. BHEL will post amendments to the EOI if any on its website. Prospective partner (s) are also advised to regularly visit website.

5.5.3 Information relating to the examination, clarification, evaluation and comparison of responses and recommendations shall not be disclosed to Prospective Partner(s). Any effort by Prospective Partner(s) to influence BHEL in this regard may result in the rejection of the proposal.

5.5.4 ETHICS IN BUSINESS DEALINGS & FRAUD PREVENTION POLICY:

The Prospective partner (s) along with its associate/collaborators/sub-contractors/sub vendors/ Consultants/ service providers shall strictly adhere to BHEL Fraud Prevention Policy displayed on BHEL website <http://www.bhel.com> and shall immediately bring to the notice of BHEL Management about any fraud or suspected fraud as soon as it comes to their notice."

5.5.5 INTEGRITY PACT:

Successful Partners shall have to enter into Integrity Pact with BHEL.

5.6 GOVERNING LAWS AND JURISDICTION:

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

5.7 EVALUATION AND SELECTION:

- i- Offers shall be scrutinised for eligibility and qualifications as stipulated in this EOI
- ii- Acceptance of the business model proposed
- iii- Maximisation of the revenue potential of BHEL
- iv- BHEL shall issue "Letter of acceptance" of proposal based on the highest revenue potential from the bid received in line with above.

5.8 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 any offer during or after completion of EOI process, if it is found there was a material misrepresentation by any such prospective partner or the Prospective partner 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 partner in the EOI. Any such verification or lack of such verification by BHEL shall not relieve the Prospective partner of his obligations or liabilities hereunder nor will it affect any rights of BHEL.

5.9 The premises shall be made available to the successful Partner on “as is where is” condition. It will be in the purview of the successful Partner to make necessary interiors arrangement as per their requirement on their own cost without changing at the basic civil structure (Beams & Pillars). However, for the exceptional cases, where repair/modification in civil structure is required, same can be carried out by successful Partner with prior written permission from BHEL. During interior/repair/modification work, successful Partner will provide free access to BHEL representatives to ensure that no unauthorized change is done by the successful Partner. No financial assistance shall be provided by BHEL for such construction/alteration/modification.

SECTION – 6

CHECK LIST FOR DOCUMENTS TO BE FORWARDED ALONG WITH EOI

Interested partners should submit following documents along with their Proposal:

Sl. No.	Document Description	Format	Prospective partner (s) 's Conformation YES/ NO/ NOT APPLICABLE
1	Covering letter	Annexure-1	
2	General Information	Annexure-2	
3	Undertaking	Annexure-3	
4	Solar PV business experience	Annexure-4	
5	Financial Criteria	Annexure-5	
6	Product Catalogue	Annexure-6	
7	Product data sheets	Annexure-7	
8	Business Model proposed	Annexure-8	
9	List of assets available at SBD.	Annexure-9	

SECTION-7

Annexure – 1: Covering Letter

Format for Covering Letter

[On the Letterhead of the Prospective Partner]

Ref.

Dated.

To, Shri Shivanand Kumar
Sr DGM/SBD
Bharat Heavy Electricals Limited (BHEL),
Solar Business Division, Malleshwaram,
Bengaluru, Karnataka India, PIN- 560012

Subject: Submission of Expression of Interest (EOI)

Ref: EOI Reference no. **BHEL/SBD/EOI/01 dated 13.05.2025**

Sir,

We would like to associate with BHEL to tie up regarding 200 MW PV Module line at SBD Unit.

I, (Name of Authorized Signatory), hereby certify that all the information and data furnished with regard to this EOI No. **BHEL/SBD/EOI/01 dated 13.05.2025** are true and complete to the best of my knowledge I have gone through the specifications, terms and conditions and stipulations in detail and agree to comply with the requirements and intent of specifications.

I hereby certify that all the documents submitted by us in support of the possession of “qualifying requirements” are true copies of the original and are fully compliant required for qualifying/applying in the EOI process and shall produce the original of the same as and when required by Bharat Heavy Electricals Limited.

I hereby further confirm that no tampering has been done with the documents submitted in support of our qualification as prospective partner. I understand that at any stage (during the EOI process or later) if it is found that fake/ false/ forged qualifying / supporting documents / certificates were submitted, it would lead to summarily rejection of our EOI/ termination of any subsequent of agreements. BHEL shall be at liberty to initiate other appropriate actions as per the terms of the EOI or other extant policies of Bharat Heavy Electricals Limited.

I, further certify that I have been duly authorized by my company for signing and submission of bids and all other documents.

Yours faithfully,

(Signature of Authorized Signatory)

Name:

Designation:

Address:

Place:

Date:

Annexure-2: General Information

Date:

Legal name of company	
Country of constitution	
Year of constitution	
Legal address in the country of constitution	
Mobile Number of the Concerned Person	
Email id of the Concerned Person	
Willing to get registered as a Supplier in BHEL's Supplier Directory	

Attached are copies of original documents of

- Articles of Incorporation or Documents of Constitution, and documents of registration of the legal entity named above.
- Lead agency in the consortium shall submit the details for all their associates

(Signature of Authorized Signatory)

Name:

Designation:

Address:

Date:

Annexure – 3: Undertaking

Declaration for eligibility
(on non- judicial stamp paper of appropriate value)

We, (1) Mr _____ and (2) Mr. _____

aged (1) yrs., (2) yrs., respectively; Directors / Power of Attorney holder of the Firm / Company

having its office at _____

hereby gives

an UNDERTAKING as under:

AND WHEREAS the BHARAT HEAVY ELECTRICALS LIMITED, SOLAR BUSINESS DIVISION had published the Expression of Interest to empanel partner(s) to Utilizing of 200 MW SPV module manufacturing line at BHEL SBD premises.

And WHEREAS, we want to participate in the said EOI procedure, we hereby give an undertaking as hereinafter appearing: -

- We hereby agree and undertake that our Firm/Company is government owned legal entity/ we are legally and financially autonomous, and operate under commercial law (Strike down if not applicable)
- We hereby agree and undertake that our Firm/Company wish to exclusively tie-up with BHEL and we also confirm that our associates/affiliates (inclusive of parent firms) cannot directly or indirectly address the business opportunities either individually or in association with other partners in India during the currency of association agreement.
- We hereby agree and undertake that our Firm/Company is not barred or Blacklisted or put on holiday list by any Government department., Semi Government department & Government Under-taking and any Multilateral Funding Agency, urban local body in India or abroad etc., as on date of submission of EOI.
- We hereby agree and undertake that our Firm/Company is not expelled from any project or contract by any public entity in the last 3 years prior to submission of EOI.

- We hereby agree and undertake that our Firm/Company has obtained the security clearances from Govt. of India i.e. Ministry of Home Affairs or from any of its department and provided along with this proposal
- We hereby further agree and undertake that, at any stage of EOI Process if the said information is found incorrect, it should be lawful for BHEL to forthwith debar us from the EOI process and initiate appropriate penal action.

The undertaking is binding upon us/our heirs, executor's administrators and assigns and/or successor and assigns.

Place

Date:

Directors/POA Holder

(Seal of Firm/Co.)

Identified by me,

BEFORE ME

Annexure – 4: Solar PV business experience

Legal Name of the company:

S. No.	Name of Project	Scope	Capacity	PO date	Customer Details with contact

Supporting documents purchase/work order (PO/WO) indicating scope & value to be enclosed.

(Signature of Authorized Signatory)

Name:

Designation:

Address:

Date:

Annexure-5: Financial Criteria

Legal Name of the company:

1. Net Worth:

Net worth at the end of 2023-24	Value (in INR)
Supporting documents enclosed	YES/ NO

2. Average annual turnover:

Average Annual Turn Over	Value (in INR)
2023-24	
2022-23	
2021-22	
Supporting documents enclosed	YES/NO

(Signature of Authorized Signatory)

Name:

Designation:

Address:

Date:

Annexure-6: Product Catalogue

(Prospective party to furnish on company letter head)

Annexure-7: Product data sheets

(Prospective party to furnish on company letter head)

Annexure-8: Business Model proposed

(Prospective party to furnish details with revenue projections)

Annexure-9:

List of assets available at SBD.

A.	PLANT & MACHINERY	
1.1	<p>Automatic Tabber-Stringer M/c.</p> <ul style="list-style-type: none"> • Throughput perm/c.: 1800 cells/hr or equivalent (no. of m/cs to be decided based on throughput) • Solar cells sizes: 78, 125, 156 mm (square/ pseudo-square), 160-250 1-1m thick, mono/ poly, bifacial type, • No of Bus bars: 2, 3, 4 & 5 • Interconnect spacing: 30 - 76.5 mm • String length: 78-2000 mm • Optical inspection & alignment • Soldering System: IR/Hot Air/Induction/ Combination 	4 Nos
1.2	<p>Automatic Layup Station</p> <ul style="list-style-type: none"> • Throughput to match or exceed that of Tabber-Stringer (<:: 1800 cells/hr.) & to be integrated with Tabber-Stringer • Glass Size: upto 2M x 1M x 3.2 or 4 mm thick • Loading arrangement & centering of glass with EVA • Precision alignment & positioning of cell strings on glass with optical aid and placement accuracy of± 1.00 mm & bow < 0.5 mm • Bussing Station for interconnection of strings & final bus-bars 	2 Nos
1.3	<p>Laminator with loading I unloading system</p> <ul style="list-style-type: none"> • 2 stage automatic laminator • Min. usable area: 2.1M x 4.4M (Each laminator capable of manufacturing min. 4 no's laminates of size: 2M x 1M per cycle) • Operating temperature: Upto 180 °C ± 20 °C • Heating System: Electrical I Hybrid Heating • Auto Loading, unloading & centering system • Touch-screen, operation & data logging with PLC control system 	4 Nos

1.4	<p>EVA I Backsheet Cutting M/c.</p> <ul style="list-style-type: none"> • EVA I Backsheet size: 1.05M (W), 2M (L) • Adjustable parameters for cut lengths, no. of cuts & speed • Provision for keeping two spools (1 EVA & 1 Backsheet roll) • Automatic piece counter • Unloading trolley with wheels for storage I movement of cut sheets 	2 Nos
1.5	<p>Edge Trimming Station</p> <ul style="list-style-type: none"> • Turn-table/Ball table with vacuum holding system. • Size of laminate: upto 2M x 1M x 5.5 mm thick • Edge trimming is to be done by precision blade/knife 	2 Nos
1.6	<p>Ribbon Cutting M/c.</p> <ul style="list-style-type: none"> • Adjustable parameters to cut lengths & no. of cuts • Ribbon Thickness: 0.1 mm to 0.4 mm • Width: 0.8 mm to 6 mm • Loading: Spools/Carton reels 	2 Nos.
1.7	<p>Edge Sealant Application System</p> <ul style="list-style-type: none"> • Tape dispensing tool for applying double sided adhesive tape on the laminate • Turn-table with vacuum holding and Pneumatic pop-up pads to hold securely the module during tape fixing 	2 Nos
1.8	<p>Automatic Framing Station with Corner Block M/c.</p> <ul style="list-style-type: none"> • Module size upto 2 M x 1 M • Frame thickness: upto 50 mm 	2 Nos
1.9	<p>Sealant Application for Junction Box Fixing</p> <ul style="list-style-type: none"> • Turn-table with vacuum holding system for holding Module • Pneumatic dispensing gun 	2 Nos.
1.10	<p>Other Online Equipment viz.,</p> <ul style="list-style-type: none"> • Module repair tables - 1 Set • Junction Box Posting station - 1 No • Bussing station - 1 set 	1 Set
1.11	<p>Other Offline Equipment viz., Glass Washing Station</p> <ul style="list-style-type: none"> • Automated Packing station - 1 No. • Module repair tables - 1 Set 	1 Set

EOI Reference Number: BHEL/SBD/EOI/01 dated 13.05.2025 rev00

Sl. No.	Description	Qty.
1.12	Online Testing equipment viz., <ul style="list-style-type: none"> • Electro-Luminescence Tester- 2 Nos • Hi-pot tester- 1. No • IV Tester (Sun simulator)- 1 No. 	2 Set
1.13	<ul style="list-style-type: none"> • Roller Conveyors, Tables, Trolleys, Work & Test stations & Buffers for Automatic Module line Set of conveyors for transportation of module material and semi-finished modules in process from glass washer-strings layup-EVA layups-EL Tester-Bussing station-EVA & back sheet layup-Laminator-Inspection-Trimming-Framing-Curing-Junction Box assembly-Inspection & Testing- Packing, comprising of a set of uni-directional & bi-directional conveyors, rotation & flipping units, loading & unloading gantries, buffer stations, storage racks etc. 	2 Set
1.14	<ul style="list-style-type: none"> • Turnkey supply, Installation & Commissioning of above equipment and process optimization of automated 200 MW PV Module line. 	1 Set
2.0	Automated Vertical Storage Systems <ul style="list-style-type: none"> • Shuttle type System with 54/59 trays unit with usable net load of about 24 MT /system with SAP integration for inventory management. 	4 Nos
B	Services	
3.0	Augmentation of Mechanical Services <ul style="list-style-type: none"> • Air Compressor- 200 CFM/Bar: 4 Nos. • Compressed air distribution lines • Air curtain for entry & exit points of enclosed manufacturing shop. - 12 	1 Set
4.0	Electrical Services up-gradation <ul style="list-style-type: none"> • VCB Panel to connect existing 11kV ring main- 8 Nos • 1250 kVA Transformers- 2 Nos • LT Main & Distribution Panel - 4 Nos • Set of MCCB's & Cables • Set of LED lights for shop lighting 	1 Set
5.0	UPS System <ul style="list-style-type: none"> • Rating: 1x250 KVA, 3 phase input, 3 phase output • Backup time: 30 minutes for full load • Technology: Digital, high frequency, IGBT 	2 Set

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6.0	Air Conditioning system <ul style="list-style-type: none">•Direct expansion type HVAC System - 25 Nos•Outdoor units – 25 Nos•Air Handling Units- 5 Nos•Piping system, Insulation and miscellaneous works.	1 Set
7.0	Office Furniture- work stations, chairs, file storage racks etc.	