



Expression of Interest (Eoi) for technology tie-up
for Unitized Wellhead

Bharat Heavy Electricals Limited
(A Government of India Undertaking)
Delhi – 110 049
India

Notice for Inviting
Expression of Interest for
Technology tie-up for
Unitized Wellhead

Eoi Ref No.: BHEL/AA/TL/0110

Date: 17 March, 2023



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SECTION-1 **Disclaimer**

The information contained in this Expression of Interest (Eoi) document provided to the Prospective Collaborator(s), by or on behalf of Bharat Heavy Electricals Limited (BHEL) or any of its employees or advisors, is provided to the Prospective Collaborator(s) 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. The purpose of this Eoi document is to provide the Prospective Collaborator(s) with information to assist the formulation of their proposal. This Eoi document does not purport to contain all the information each Prospective Collaborator may require. This 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 Prospective Collaborator who reads or uses this Eoi document. Each Prospective Collaborator should conduct his own investigations and analysis and should check the accuracy, reliability and completeness of the information in this Eoi document and where necessary obtain independent advice from appropriate sources.
2. 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 Eoi document.
3. BHEL may, in its absolute discretion, but without being under any obligation to do so, modify, amend or supplement the information in this Eoi document.
4. The issue of this Eoi does not imply that BHEL is bound to select and shortlist any or all the Prospective Collaborator(s). Even after selection of suitable Prospective Collaborator, BHEL is not bound to proceed ahead with the Prospective Collaborator and in no case be responsible or liable for any commercial and consequential liabilities in any manner whatsoever.
5. The Prospective Collaborator(s) shall bear all costs associated with the preparation, technical discussion/presentation and submission of response against this Eoi. BHEL shall in no case be responsible or liable for these costs regardless of the conduct or outcome of the Eoi process.
6. Canvassing in any form by the Prospective Collaborator(s) or by any other agency on their behalf shall lead to disqualification of their Eoi.
7. Notwithstanding anything contained in this Eoi, BHEL reserves the right to accept or reject any application and to annul the Eoi process and reject all applications, at any time without any liability or any obligation for such acceptance, rejection or annulment and without assigning any reasons, thereof. In the event that BHEL rejects or annuls all the applications,



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it may at its discretion, invite all eligible Prospective Collaborators to submit fresh applications.

8. BHEL reserves the right to disqualify any applicant during or after completion of Eoi process, if it is found there was a material misrepresentation by any such applicant or the applicant fails to provide within the specified time, supplemental information sought by BHEL.
9. BHEL reserves the right to verify all statements, information and documents submitted by the applicant in response to the Eoi. Any such verification or lack of such verification by BHEL shall not relieve the applicant of his obligations or liabilities hereunder nor will it affect any rights of BHEL.



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SECTION-2

SCHEDULE OF Eoi PROCESS & CONTACT DETAILS

A. Schedule of Eoi process:

The schedule of activities during the Eoi Process shall be as follows -

Sl. No.	Description	Date
1.	Issue of Eoi document	17 th March, 2023
2.	Last date of submission of Eoi response	10 th April, 2023

B. Contact Details:

Senior Deputy General Manager (CTM)
Corporate Technology Management,
Bharat Heavy Electricals Limited (BHEL),
BHEL House, Siri Fort, New Delhi 110049
Tel: +91-11- 66337213 / 66337339
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SECTION – 3

Details of Expression of Interest

3.1 Introduction:

This Expression of Interest (Eoi) seeks response(s) from Original Equipment Manufacturer(s) (OEMs) of Unitized Wellhead (also known as Compact Wellhead or Multi Bowl Wellhead), who are meeting the requirements of this Eoi and are willing to be associated with BHEL through a license & technology collaboration agreement on long term basis, to enable BHEL to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, troubleshoot, service and repair state of the art Unitized Wellhead for Surface Installations (both Onshore as well as Offshore) to meet the market requirements.

3.2 About BHEL:

BHEL is a leading state owned company, wherein Government of India is holding 63.17% of its equity. BHEL is an integrated power plant equipment manufacturer and one of the largest engineering and manufacturing organization in India, catering to the core infrastructure sectors of Indian economy viz. energy, transportation, heavy engineering industry, defense, renewable and non-conventional energy. The energy sector covers generation, transmission and distribution equipment for thermal, gas, hydro, nuclear and solar photo voltaic. BHEL has been in this business for more than 50 years and BHEL supplied equipment account for more than 57% (approx. 180 GW) of the total thermal generating capacity in India. BHEL has 16 manufacturing units, 4 power sector regions, 8 service centers and 15 regional offices besides host of project sites spread all over India and abroad. The annual turnover of BHEL for the year 2021-22 was around US \$2.65 Billion*.

BHEL's highly skilled and committed manpower of approx. 30000; state-of-the-art manufacturing, R&D facilities and latest technologies helped BHEL to deliver a consistent track record of performance since long. To position leading state-owned companies as Global Industrial giant and as a recognition for their exemplary performance, Government of India categorized BHEL as "Maharatna Company" in 2013. The high level of quality & reliability of BHEL products is due to adherence to international standards by acquiring and adapting some of the best technologies from leading companies in the world, together with technologies developed in its own R&D centers.

Our ongoing major technology tie-ups include agreements with Siemens Energy Global GmbH & Co. KG., Germany (for Steam Turbines, Generators and Condensers); MHI, Japan (for Flue Gas Desulfurization Systems); Leonardo S.p.A, Italy (for Super Rapid Gun Mount);

*[*Note: Currency conversion rate considered: 1 US \$=Rs. 76.20 as on 31st March 2022]*



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GE Tech. GmbH, Switzerland (for Steam Turbine for Nuclear Power Plant); Vogt Power International, USA (for Heat Recovery Steam Generators); Indian Space Research Organization (ISRO), India (for Space Grade Lithium-Ion Cells); CSIR-IIP, India (PVSA based Medical Oxygen Plant); NANO Company Ltd., Korea (for SCR Catalysts); HLB Power Company Ltd., Korea (for Gates and Dampers); Kawasaki Heavy Industries, Japan (for Stainless Steel Coaches for Metros); Valmet Automation Oy, Finland (for DCS System), Babcock Power Environmental Inc., USA (for Selective Catalytic Reduction Systems) and Sumitomo SHI FW Energia Oy, Finland (for CFBC Boiler).

***More details about the entire range of BHEL's products and operations can be viewed by visiting our web site www.bhel.com**

3.3 About High Pressure Boiler Plant (HPBP), Trichy:

High Pressure Boiler Plant (HPBP), established in 1965 at Tiruchirappalli is one of the major manufacturing unit of BHEL. Valves division of HPBP manufactures valves for meeting requirements for the thermal power plant orders secured by BHEL. Xmas Tree and Wellheads are one of the major products of HPBP. Manufacturing range of these products is as below:

- a) Pressure Rating: 2000 PSI to 15000 PSI
- b) Size: 1-13/16" to 21"
- c) Material Class: AA through HH
- d) Temperature Rating: P, U
- e) Performance Requirement Level: PR1, PR2, PR2F

HPBP, Trichy is currently having valid API Monograms for API 6A, API 16C and API 17D. Scope of these license includes:

API-6A: Wellhead and Christmas Tree Equipment:

Casing and Tubing Heads, Mandrel type Hangers, Cross-over connectors, Top Connectors, Tees and Crosses, Blind and test Flanges, Gate Valves, Chokes - PSL 1 through 4. Surface Safety Valves- PSL 2 through 4, Slip-Type Hangers, Adapter Spools and Spacer Spools - PSL 1 through 3. Bull Plugs, Valves Removal Plugs, Back Pressure Valves, Pneumatic and Hydraulic Actuators.

API-16C: Choke and Kill Equipment:

1. Choke and kill manifold buffer chamber.

API-17D: Mudline Suspension System:

1. Casing Hangers for PSL 2
2. Corrosion Caps for PSL 2



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3.4 Scope of Cooperation:

BHEL is seeking Expression of Interest(s) from Original Equipment Manufacturer(s) (OEMs) / Prospective Collaborator(s) for Technology Collaboration Agreement (TCA) for state-of-the-art & proven Unitized Wellhead technology.

The TCA shall enable BHEL to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, troubleshoot, service and repair Unitized Wellheads. Interested OEMs/Prospective Collaborator(s) meeting the PQR requirement as specified in clause 3.5 below are invited to submit their response to this Eoi, as per indicative scope of technology transfer given in **Annexure-1**.

Upon receipt of response(s) against this Eoi, BHEL will review the response(s) to ascertain suitability of the offer and shortlist Prospective Collaborator(s) for further discussions. Detailed discussions on commercial and other terms and conditions to finalize the Technology Collaboration Agreement (TCA) shall be held with shortlisted Prospective Collaborator(s). The detailed terms and conditions for such a paid-up license agreement shall be mutually agreed upon.

3.5 Prequalification requirements (PQR):

The Prospective Collaborator(s) shall meet all the following qualification requirements as on the date of submission of Eoi **(to be substantiated by a documentary evidence)**:

- a) The Prospective Collaborator should have designed Unitized Wellhead.
AND
- b) The Prospective Collaborator should have engineered, manufactured, supplied, installed, field tested and commissioned at least 05 (five) numbers of Unitized Wellhead (as specified in Annexure-3) up to pressure range of 10,000 psi applicable for Oil and Gas Exploration in the last 07 (seven) years from closing date of Eoi. Out of this, Prospective Collaborator should have successfully executed supply, install, commission and test at least 02 (two) sets of 10,000 psi Unitized Wellhead to E&P companies or Service Provider to E&P Companies during the last 05 (five) years from the date of closing of Eoi
AND
- c) The Prospective Collaborator should be a Manufacturer-cum-Service provider of Unitized Wellhead and associated services including installation, commissioning, trouble shooting and testing of Unitized Wellhead and should be in the servicing business for more than 07 (seven) years to be reckoned from the date of closing of Eoi.
AND



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d) The Prospective Collaborator should have experienced & competent Unitized Wellhead engineers having at least 05 (five) years of experience in oil & gas drilling wells for running, installation and testing of Unitized Wellhead. During the period of five years (preceding the bid closing date of Eoi), the Compact Wellhead Engineer must have successfully completed at least 03 (three) such jobs independently. (Prospective collaborator is required to substantiate this PQR by providing suitable self-certified Work experience certificate clearly stating the well nos./locations, dates of execution and details of Wellheads must be mentioned in the certificate as documentary evidence)
AND

e) The Prospective Collaborator should have valid API 6A License as on date of closing of the Eoi.

Note: E&P Companies means Companies involved in Exploration & Production of Oil & Gas.

3.6 INSTRUCTIONS:

3.6.1 The interested Prospective Collaborator(s) should submit their response(s) along with enclosed annexures on or before **10th April, 2023**.

Annexure-1: Indicative Scope of Technology Transfer

Annexure-2: Prospective Collaborator's Experience in the field of Unitized Wellheads

Annexure-3: General technical specifications of Unitized Wellhead proposed for TCA

Annexure-4: Reference List: The Prospective Collaborator's major supplies in last 5 years

3.6.2 The response shall necessarily be accompanied with following details:

1. Company background
2. Product Profile
3. Unitized Wellhead technical details
4. Reference list of customers
5. Unitized Wellhead data sheet and
6. Annual audited financial reports for last 3 (three) years.

3.6.3 Language: All correspondences and documents related to the Eoi response shall be in English language, provided that any printed literature furnished by the Prospective Collaborator(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 bid, the English translation shall govern.

3.6.4 The Prospective Collaborator(s) shall abide by the terms & conditions, as applicable, of the Eoi.



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- 3.6.5** All pages of the response against this Eoi shall be duly signed by the authorised signatory.
- 3.6.6** Multiple proposals from the same Prospective Collaborator should not be submitted.
- 3.6.7** BHEL at its discretion shall inspect the Prospective Collaborator's works/office/reference site premises for the purpose of evaluation, as deemed necessary before selection of Collaborator. BHEL decision in this regard shall be final.
- 3.6.8** Any Prospective Collaborator which has been debarred/blacklisted by Central/State Governments of India or by any entity controlled by Central/State Governments of India from participating in any of their project, as on date of submission of Eoi, shall not be eligible to submit the Eoi.
- 3.6.9** BHEL shall receive applications pursuant to this Eoi in accordance with the terms set forth herein, as modified, altered, amended and clarified from time to time by BHEL, and all applications shall be submitted in accordance with such terms on or before the date specified in this Eoi for submission of applications.

In case any amendment/corrigendum to this Eoi is issued, it shall be notified only at www.bhel.com

3.7 PROCESS TO BE CONFIDENTIAL:

Information relating to the examination, clarification, evaluation and comparison of Eoi and recommendations shall not be disclosed to Prospective Collaborator(s). Any effort by Prospective Collaborator(s) to influence BHEL in processing of Eoi or selection decisions may result in the rejection of the response against Eoi.

3.8 GOVERNING LAWS & JURISDICTION:

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

Annexure-1

Indicative Scope of Technology Transfer

a)	<p><u>Technology Transfer</u></p> <ol style="list-style-type: none"> I. Licensing & transfer of state of the art technology relating to the design, engineer, manufacture, assemble, quality control, test, supply, install, commission, troubleshoot, service and repair Unitized Wellhead and all allied accessories II. Transfer of applicable and relevant knowledge and information/ Know-how and Know-why pertaining to design, engineer, manufacture, assemble, quality control, test, supply, install, commission, troubleshoot, service and repair Unitized Wellhead as specified in this Eol. III. Purchase specification, indicative drawings and quality Plan for raw materials (Casting & Forging) and all bought out items. IV. Manufacturing drawings for all components, sub-assemblies required for Unitized Wellhead as specified in this Eol. V. Design calculations, 3D models, stress analysis and CFD Reports of existing Unitized Wellhead Technology. VI. Transfer of typical documents of Unitized Wellhead as specified in this Eol already supplied by Prospective Collaborator such as sectional arrangement drawing indicating bill of materials, quality assurance plan, welding procedures along with procedural quality records, heat treatment procedures, painting procedures, spare parts, special tools, actual performance test data (at manufacturer's works and at site).
b)	<ol style="list-style-type: none"> I. Transfer of improvements/modifications/developments/up gradations carried out by the Prospective Collaborator over the duration of the technology transfer for taking care of new market requirements and obsolescence. II. Subsequent updates required due to component obsolescence or updates implemented by Prospective Collaborator due to safety consideration / Standards updates / Legal requirements would also be provided.
c)	<p>List of sources along with the contact information and the related technical details required for procurement of products/services, which are being sourced by the Prospective Collaborator (either from sister concerns or from open market).</p>
d)	<p>Transfer of site feedback and troubleshooting information.</p>
e)	<ol style="list-style-type: none"> I. Transfer of both in-house and third party computer programs including logics and source code, if any. Details of all the required hardware and software needed to run the shared computer programs. II. Specification for necessary third party software and hardware required for design and engineering.



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f)	<ol style="list-style-type: none">I. Support through engineering services from Prospective Collaborator's design office/ manufacturing facilities for Unitized WellheadII. Technical and quality surveillance assistance and supervision during design, engineer, manufacture, assemble, quality control, test, supply, install, commission, troubleshoot, service and repair Unitized Wellhead as specified in this Eoi.
g)	Deputation of Prospective Collaborator's experts to assist BHEL in absorbing the technology for Unitized Wellhead.
h)	<p><u>Training</u></p> <ol style="list-style-type: none">I. Training of BHEL personnel at Prospective Collaborator's & BHEL's work in the area of design, selection of equipment, detailed engineering including models, drawing creations, generating technical specifications, bill of materials, identification of list of spares, manufacturing, assembly, quality control/quality assurance, testing.II. Training on installation, commissioning, troubleshooting, service maintenance & operation of the above Unitized Wellheads at drilling sites.
i)	<ol style="list-style-type: none">I. Support in planning & establishing the new manufacturing, assembly and testing facilities & processes/ suitable augmentation at BHEL's existing facilities/processes by way of expert advice in terms of identifying, sizing & selection and preparation of specification of equipment / machinery required for manufacturing, their layout and foundation etc.II. Support during procurement of new machines, special tools, Jigs & Fixtures, setup of test facility etc. required for manufacturing and testing of Unitized Wellhead at BHEL works and also assistance required during erection, test at site.III. Support in identifying, procuring / hiring necessary tools and equipment along with skilled manpower for installation and commissioning at drilling sites.

Signature & Seal:

Authorized Signatory of the Prospective Collaborator



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Annexure-2

Prospective Collaborator's Experience in the field of Unitized Wellhead

Sl. No.	Requirement	Prospective Collaborator's response Yes/No and remarks, if any
a)	Whether the prospective collaborator is an Original Equipment Manufacturer (OEM) of Unitized Wellhead.	
b)	Whether Prospective Partner has its own manufacturing facility for Unitized Wellhead. If not, furnish details of where these are being manufactured.	
c)	i. Whether Prospective Collaborator has designed Unitized Wellhead.	
	ii. Whether Prospective Collaborator has engineered, manufactured, supplied, installed, field tested and commissioned at least 05 (Five) numbers of Unitized Wellhead (as specified in Annexure-3) up to pressure range of 10,000 psi applicable for Oil and Gas Exploration in the last 7 (seven) years from closing date of Eoi. Out of this, Prospective Collaborator should have successfully executed supply, install, commission and test at least 02 (two) sets of 10,000 psi Unitized Wellhead to E&P companies or Service Provider to E&P Companies during the last 05 (Five) years from the date of closing of Eoi	
	iii. Whether the Prospective Collaborator is a Manufacturer-cum-Service provider of Unitized Wellhead and associated services including installation, commissioning, trouble shooting and testing of Unitized Wellhead and should be in the servicing business for more than 7 (seven) years to be reckoned from the date of closing of Eoi.	
	iv. Whether Prospective Collaborator has experienced & competent Unitized Wellhead engineers having at least five (5) years of experience in oil & gas drilling wells for running, installation and testing of Unitized Wellhead. During the period of five years (preceding the bid closing date of EOI), the Compact Wellhead Engineer must have successfully completed at least 3 (three) such jobs independently. (Prospective collaborator is required to substantiate this PQR by providing suitable self-certified Work experience	



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Sl. No.	Requirement	Prospective Collaborator's response Yes/No and remarks, if any
	certificate clearly stating the well nos./locations, dates of execution and details of Wellheads must be mentioned in the certificate as documentary evidence)	
	v. Whether Prospective Collaborator has valid API 6A License as on date of closing of the Eoi.	
	vi. Whether Prospective Collaborator has provided relevant certificate/ document to substantiate all of the above PQRs.	
d)	Whether the Prospective Collaborator agrees for technology transfer as per scope given in Annexure-1.	
e)	Whether the Prospective Collaborator's Unitized Wellheads are successfully type tested for ratings mentioned in Annexure-3 as per latest API 6A.	
f)	Whether details of company background, product catalogues have been enclosed.	
g)	Whether Prospective Collaborator's detailed reference list has been enclosed in Annexure-4.	
h)	Whether Prospective Collaborator's annual audited financial reports for last 3 (three) years has been enclosed.	
i)	Whether Prospective Collaborator is having positive net worth for last 3 years.	
j)	Whether the Unitized Wellhead offered for technology transfer is the latest being marketed by the Prospective Collaborator	
k)	Whether the Prospective Collaborator owns the IPRs for the technology being proposed for transfer under the Technology Collaboration Agreement (TCA) or have unencumbered right from the owner of the IPRs to sub-license the technology, if applicable. If yes, list of such IPRs to be enclosed.	
l)	Whether Prospective Collaborator has any experience in establishing a new manufacturing, testing and assembly facilities, if so please specify.	

Signature & Seal:

Authorised Signatory of the Prospective Collaborator



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Annexure-3

General technical specifications of Unitized Wellhead proposed for TCA

SN	Parameters	Value
1.	Product	Unitized Wellhead
2.	Standard	API Product Specification 6A
3.	Size	Unitized Wellhead catering for casing sizes ranging from 30" (False Conductor), 20" to 5-1/2" and tubing sizes 5" to 2-7/8"
4.	Pressure Range	2000 PSI to 10000 PSI (Preferred up to 20000 PSI)
5.	Product Specification Level	PSL 1, PSL 2, PSL 3 and PSL 3G as per API 6A (Preferred PSL 4 also)
6.	Material Class	AA, BB, CC, DD, EE, FF as per API 6A (Preferred HH also)
7.	Temperature Ratings	P, S, T, U as per API 6A
8.	Tools and accessories	Tools, accessories, fittings and other applicable items for installation and retrieval of Unitized Wellhead
9.	Performance Requirement Level	PR2 (Preferred PR2F as per API 6A Annexure F also)

Note:

1. The detailed technical specification shall be finalized during discussion stage.
2. There shall be provision of other range of Unitized Wellheads available with Prospective Collaborator in the TCA.

Signature & Seal:

Authorized Signatory of the Prospective Collaborator

Annexure-4

Reference List: The Prospective Collaborator shall furnish a summary of Unitized Wellhead in last 5 years.

Sl. No.	Project Name / Location	Customer & End user details	Type of Unitized Wellhead	No of Each Type supplied	Technical parameters including size, pressure, material class and temperature rating	Month and year of supply	Year of commissioning

Signature & Seal:
Authorized Signatory of the Prospective Collaborator